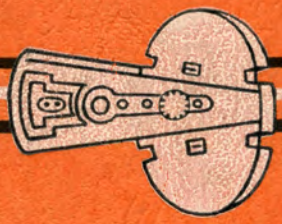
W. W. TROUT

LUFKIN OIL FIELD EQUIPMENT



CATALOG 37

Equipment of Advanced Design with Large Factors of Safety

A Rich Background of Experience Means Real Values in Lufkin Equipment

---

You CAN Balance Your Well with a Lufkin Unit and a Trout Crank

---

LUFKIN FOUNDRY & MACHINE COMPANY • LUFKIN, TEXAS

LUFKIN EQUIPMENT OF ADVANCED DESIGN

LUFKIN FOUNDRY & MACHINE CO.

FACTORY AND GENERAL OFFICES

LUFKIN, TEXAS

BRANCH OFFICES AND WAREHOUSES

GULF COAST DIVISION
Houston, Texas.
806 2nd Nat'l Bank Bldg.
'Phone Preston 8610

WAREHOUSES
Odessa, Texas
Phone 216
Alice, Texas
'Phone 25834

CALIFORNIA DIVISION
Los Angeles, California,
5959 South Alameda
Bakersfield Warehouse,
30th and M Streets,
Bakersfield, California

EAST TEXAS DIVISION
Kilgore, Texas,
Phone 875
Longview, Texas,
Phone 1576

DALLAS OFFICE
1504 Magnolia Building

MID-CONTINENT DIVISION
Tulsa, Okla
1203 Philtower Bldg.

WAREHOUSES
Seminole, Oklahoma

EXPORT DIVISION
New York, N. Y.,
149 Broadway,
Cable address "LUFFO"

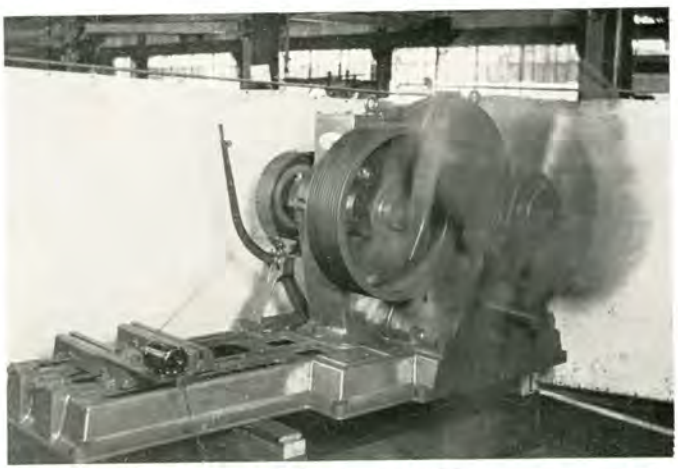
ARKANSAS-LOUISIANA DIVISION
El Dorado, Arkansas

INTRODUCTION

As pioneers in the manufacture of geared units for oil field pumping, the Lufkin Foundry & Machine Company has gained its present position as the world's largest manufacturer of PUMPING EQUIPMENT through no miracle, but rather having won this place through the continued efforts of its engineers seeking new and improved designs as experience dictated. In this endeavor we have had the fine and friendly cooperation of oil company engineers and practical operators in the field. As a result of this constant striving for the best to be had for the desired operation, LUFKIN UNITS stand foremost in the minds of producers everywhere.

Being located close to many producing areas has enabled our engineers to keep in close touch with the performance of our equipment, which has made it possible to continually watch details, which many times makes for success or failure in practical operation.

In appreciation of the confidence of our friends, we will continue our policy of producing the most efficient, practical equipment, proportionately designed, manufactured of the best materials available; of superior workmanship, and to maintain helpful service as long as our equipment is in use.



NO FRICTION HERE

Our largest unit, No. 58, weighing 20,000 lbs. turning 20 Strokes per Minute, driven by ½ H.P. motor.

TWENTY BOILED DOWN FACTS AND ADVANTAGES

1. Simple, rugged construction.
2. Large factors of safety in design.
3. Constructed of best material available.
4. Precision workmanship.
5. Interchangeable parts.
6. All wearing parts easily renewable.
7. Main bearings renewable in the field.
8. Ample bearing capacities throughout.
9. All bearings have patent oil seals and are oil tight.
10. Alloy steel shafts, gears and pinions, turned and ground.
11. Tensile strength of crank shafts 110,000 lbs. per square inch.
12. Tensile strength of pinion shafts 130,000 lbs. per square inch.
13. Lufkin-Sykes Herringbone Gears accurately cut from the hardest Alloy Steels.
14. Lufkin Units require little attention.
15. Practically no repairs.
16. Large users report fifty cents to one dollar per month as repair costs on complete rigs.
17. Down time and rod trouble reduced to the minimum.
18. Accident hazard almost entirely eliminated.
19. 100% salvage value—excepting foundation.
20. Lufkin Units are a permanent investment.

After all, the real cost is not determined by the purchase price but by how well the unit performs and how long it lasts!

To date no Lufkin Herringbone Gears have failed.

LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS

SINGLE REDUCTION GEAR UNITS

Single reduction gear units are preferred where slow speed engines (up to 750 R.P.M.) are used. They are built in four sizes and four horse powers.

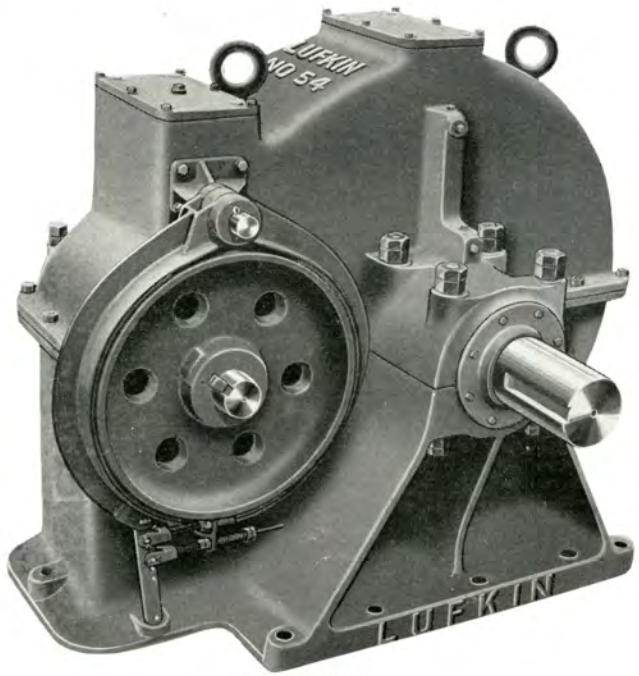


FIGURE 1

DOUBLE REDUCTION GEAR UNITS

Double reduction gear units are used with electric motors and multi-cylinder gas engines. They are made in six sizes and six horse powers.

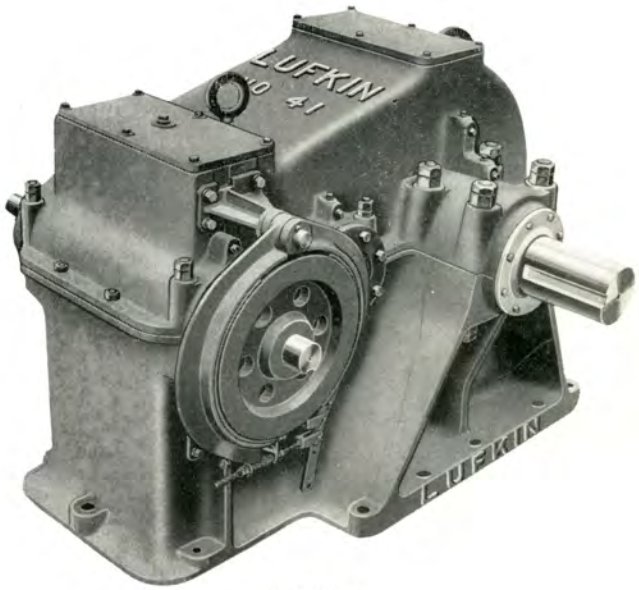


FIGURE 3

LUFKIN ENGINEERS HAVE A RICH BACKGROUND of practical experience not only in unit operation, but behind their manufacturing processes is a plant using modern production methods, and up-to-date tools where absolute duplicate precision work is maintained.

Our entire product is made in jigs or by template, even to posts and walking beams to secure correct alignment and absolute duplication.

FIGURE 2
Single Reduction Gear Unit, cover removed.

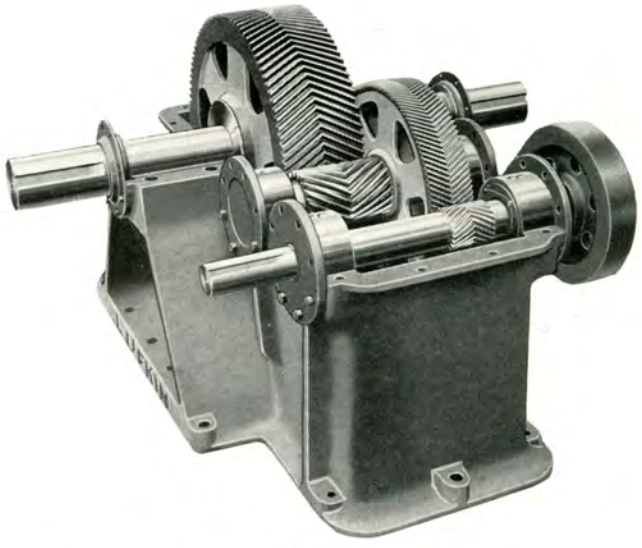


FIGURE 4
Double Reduction Gear Unit, cover removed.

BOILED DOWN FACTS ABOUT LUFKIN COUNTERBALANCE CRANKS

THE TROUT COUNTERBALANCE CRANK

Rotary crank counterbalancing (originated by Lufkin) is now universally accepted, the idea not only reducing the power required, but due to the even strain produced on rods and walking beam, as well as the geared unit, rod trouble and beam breakage has been almost eliminated.

Cranks in several forms have since been offered, but our many customers continue to favor the Trout crank. It has twelve outstanding mechanical advantages:

1. Simple, practical construction.
2. Easily adjustable from zero to maximum counterbalance.
3. Accurate balance within 2-amps on up and down stroke.

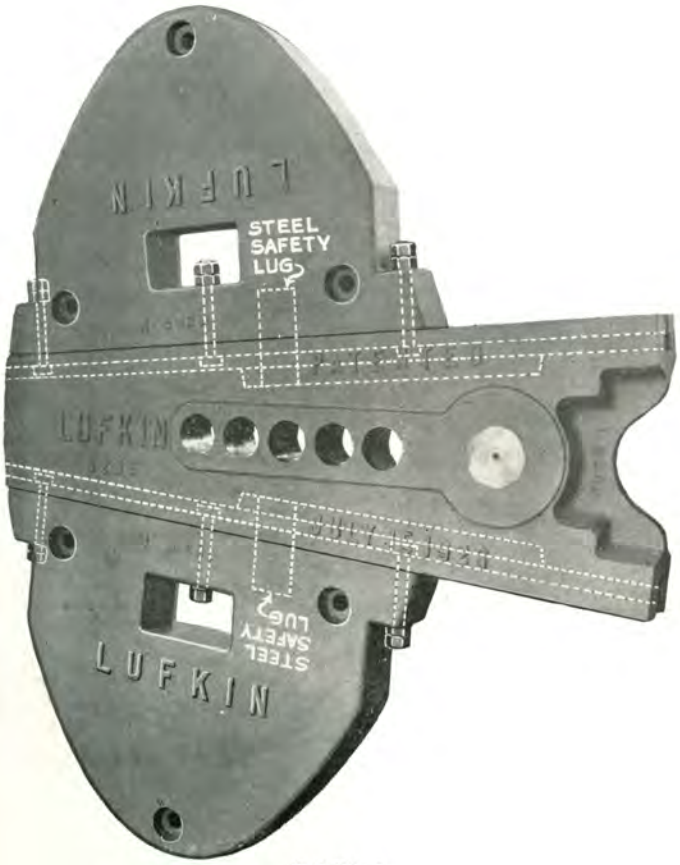


FIGURE 5

Adjustable Counterbalance Crank. Note safety lugs: weights cannot slide off. This feature with fly-wheel brake allows weights to be shifted in five minutes.

4. Adjustments quickly made. Average not over five minutes, no weights to lift, add or subtract.
5. Lead or lag balance readily obtainable.
6. Safety feature—impossible to slide off—steel safety lug cast in each weight with forged steel bolts insure absolute safety. Unquestionably the safest crank to handle from the operator's standpoint.
7. When servicing well, weights in neutral position, crank has fly wheel effect which is very desirable for quick pick up on rods and tubing.
8. Trout cranks have a short radius of gyration (do not require as high concrete foundations as do those with weights on out end) consequently a better balance at top and bottom of dead center, and due to concentrated weight closer to crank pin, insures less bearing pressure and eliminates excessive strains on crank shaft.
9. Due to gas and other changing conditions frequent adjustment is necessary and advantageous in pumping oil, saving power, etc., which is readily accomplished with a Trout crank, yet very impractical on an "added to," or "subtracted from" drop crank.
10. Sufficient counterbalance proportionate to stroke readily obtainable, and is especially desirable in a three-well hook-up, see page 1086.
11. Counterbalance cranks aided by high speed fly wheels cut down the strain on pumping equipment, aid economical operation by permitting the use of smaller electrical equipment and lets the driving power operate at a higher efficiency.
12. You CAN balance a well with a Lufkin Unit and Trout Crank.

LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS

LUFKIN TWIN CRANK UNITS

Being self contained, they are always in perfect alignment, work strains are equally divided on shafts and bearings, and with ample counterbalance, double crank pin bearings, they make for easy, efficient operation. While costing more, they are cheaply installed, easily portable, an advantage that is being realized more and more as they are used.

FIGURE 6

Lufkin T. C. No. 2-31B unit on Republic Production well, Ariola, Texas

Twin crank units are becoming more popular every day. They constitute the major portion of our business. When their many advantages are known, customers seldom use other types.

LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS

Illustrating two-well take-off which is not usually furnished.

FIGURE 7

LUFKIN TWIN CRANK UNITS

NO. 0 TWIN CRANK ASSEMBLY. Designed for 30,000 lbs. Polish Rod Load and 74″ Maximum Stroke.

GENERAL SPECIFICATIONS: Depth Base 16″; width Base 49¾″; Tripod Samson Post 13′-0″ High; No. 1-A Bronze Center Bearing, 6″ x 20″, 120 sq. ins.; Walking Beam 24″ x 14″ x 130-lbs., Hinge Horse Head Type, Working Centers 10′-0″ and 10′-0″; Pitman, Structural][Cross Beam Type, 4″ Pipe Connections; 4″ x 6″ Crank Pins; 7472 Cranks, 71½″ radius.

Unit No.	Type Gears	A.P.I. Rating	Ratio	Crank Shaft Dia.	Drive Sheave Bore	Sheave Dia. and No. Grooves	Dia. and Face Main Gear	Weight Complete	Polish Rod Stroke	Static Counterbalance, Lbs.	
										No. 1 Reg. Wts.	C.I. Aux. Wts.
58	SR	67.4 HP 333,327 PT	9.7	6 1/16″	3 15/16″	43¼″—11C 43¼″ Max.	55″ x 10″	40,725 lb	34″	32,000	39,900
									44″	24,750	30,850
									54″	20,150	25,100
51	DR	54.3 HP 268,541 PT	28.79	6 1/16″	3 3/16″	35″ —11C 52″ —Max.	36″ x 12″	40,925 lb	64″	17,000	21,200
									74″	15,100	18,850

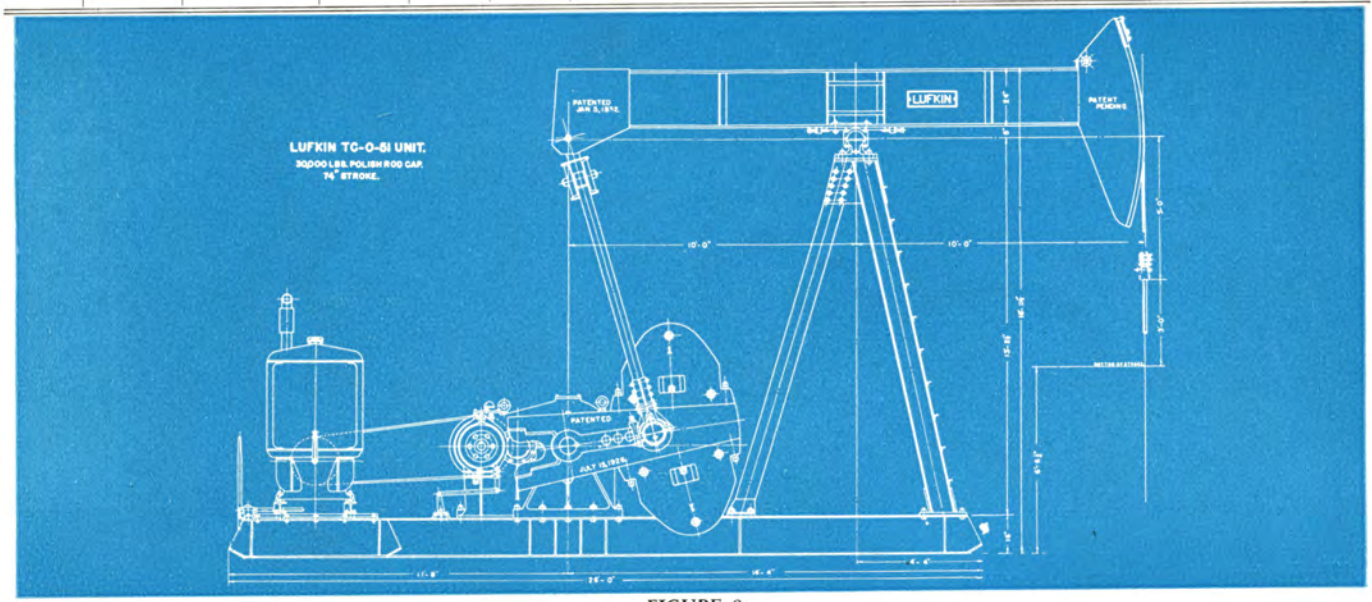


FIGURE 8

LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS

One of seventy such installations in the Oklahoma City field.

FIGURE 9

LUFKIN TWIN CRANK UNITS

NO. 0-A TWIN CRANK ASSEMBLY. Designed for 30,000 lbs. Polish Rod Load and 74″ Maximum Stroke.

GENERAL SPECIFICATIONS: Depth Base 16″; Width Base 49¾″; Straight Front Samson Post 13′-0″ High; No. 1-A Bronze Center Bearing, 6″ x 20″, 120 sq. ins.; Walking Beam 24″ x 14″ x 130-lbs., Hanger Type, Working Centers 25′ or 28′; Pitman, Structural] [Cross Beam Type, 4″ Pipe Connections; 4″ x 6″ Crank Pins; 7472 Cranks, 71½″ radius.

Unit No.	Type Gears	A.P.I. Rating	Ratio	Crank Shaft Dia.	Drive Sheave Bore	Sheave Dia. and No. Grooves	Dia. and Face Main Gear	Weight Complete	Polish Rod Stroke	Static Counterbalance, Lbs.	
										No. 1 Reg. Wts.	C.I. Aux. Wts.
58	SR	67.4 HP 333,327 PT	9.7	6 7/16″	3 13/16″	43¼″—11C 43¼″—Max.	55″ x 10″	25′ Beam 41,600 lb	34″	32,000	39,900
									44″	24,750	30,850
									54″	20,150	25,100
51	DR	54.3 HP 268,541 PT	28.79	6 7/16″	3 3/16″	35″ —11C 52″ —Max.	36″ x 12″	25′ Beam 41,800 lb	64″	17,000	21,200
									74″	15,100	18,850

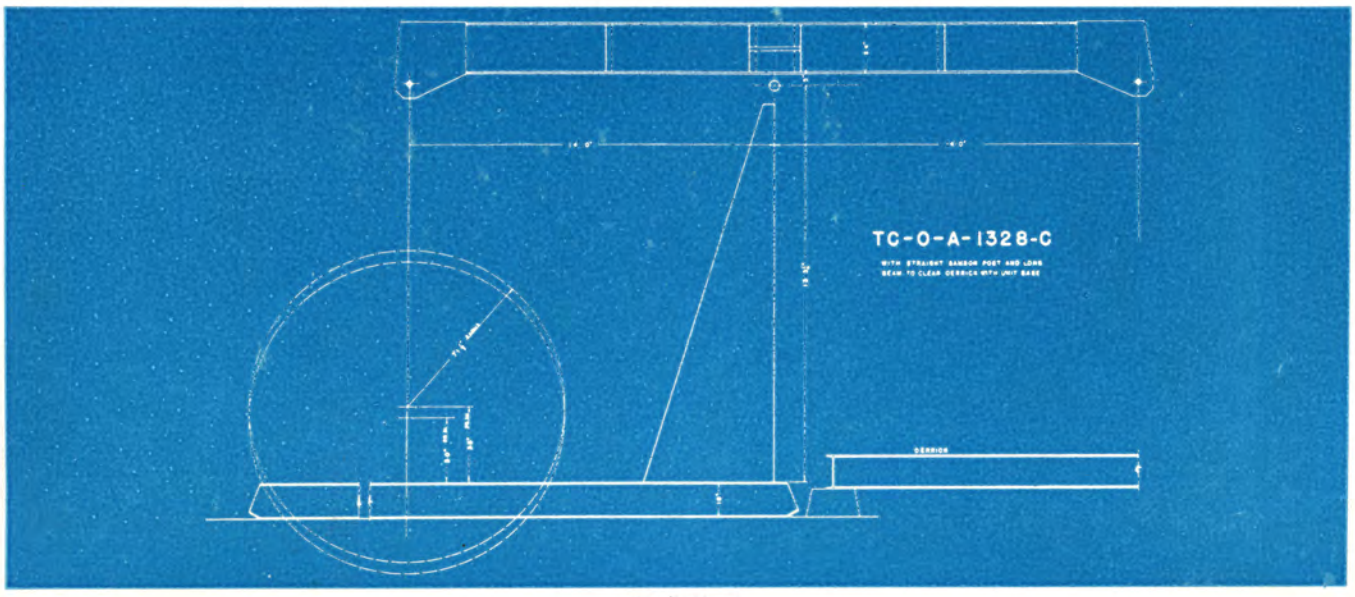


FIGURE 10

LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS

FIGURE 11

LUFKIN TWIN CRANK UNITS

NO. 1 TWIN CRANK ASSEMBLY. Designed for 25,000 lbs. Polish Rod Load and 74″ Maximum Stroke.

GENERAL SPECIFICATIONS: Depth Base 16″; Width Base 43″; Tripod Samson Post 13′-0″ High; No. 1-A Bronze Center Bearing, 6″ x 20″, 120 sq. ins.; Walking Beam 24″ x 14″ x 130-lbs., Hinge Horse Head Type, Working Centers 10′-0″ and 10′-0″; Pitman, structural][Cross Beam Type, 4″ Pipe Connections; 4″ x 6″ Crank Pins, 7466 Cranks, 65½″ radius.

Unit No.	Type Gears	A.P.I. Rating	Ratio	Crank Shaft Dia.	Drive Sheave Bore	Sheave Dia. and No. Grooves	Dia. and Face Main Gear	Weight Complete	Polish Rod Stroke	Static Counterbalance, Lbs.	
										No. 2 Reg. Wts.	C.I. Aux. Wts.
54	SR	51.7 HP 255,682 PT	9.4	6 7/16″	3 7/16″	35″—11C 35″—Max.	47″ x 10″	32,500 lb	34″	24,200	30,100
									44″	18,700	23,250
									54″	15,250	18,950
41	DR	44.0 HP 217,602 PT	30.12	6 7/16″	2 15/16″	25″— 8C 48″—Max.	34″ x 10″	32,700 lb	64″	12,850	16,000
									74″	11,150	13,850

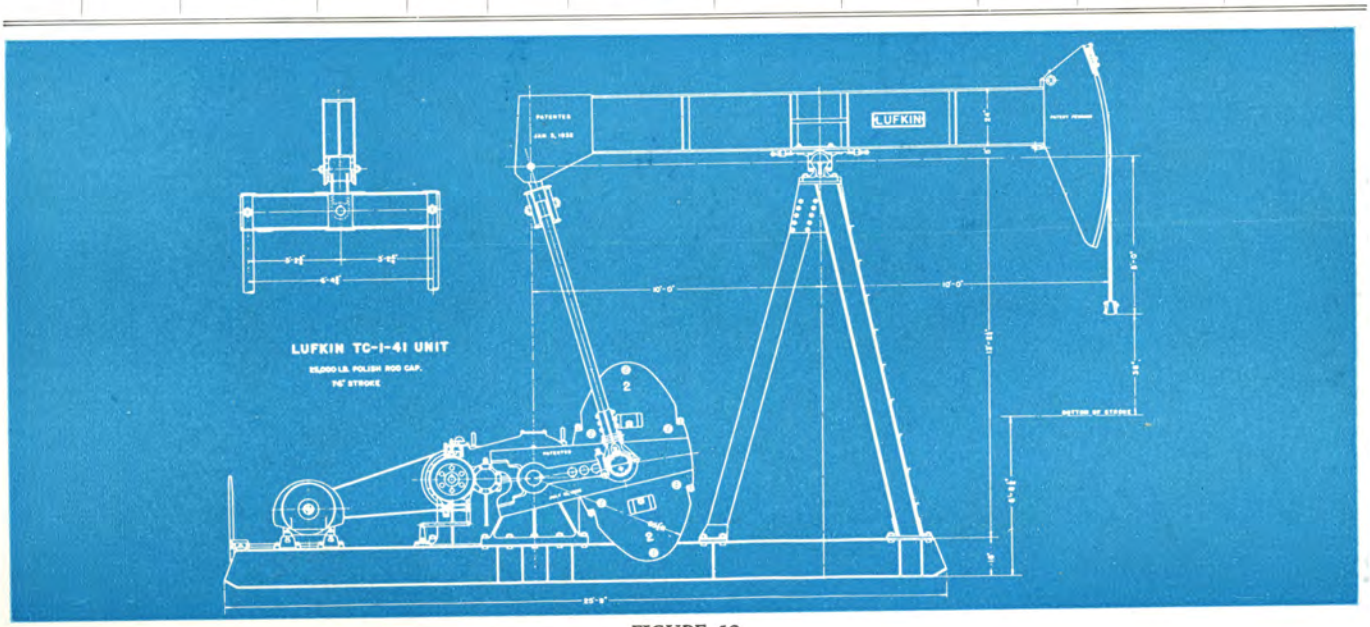
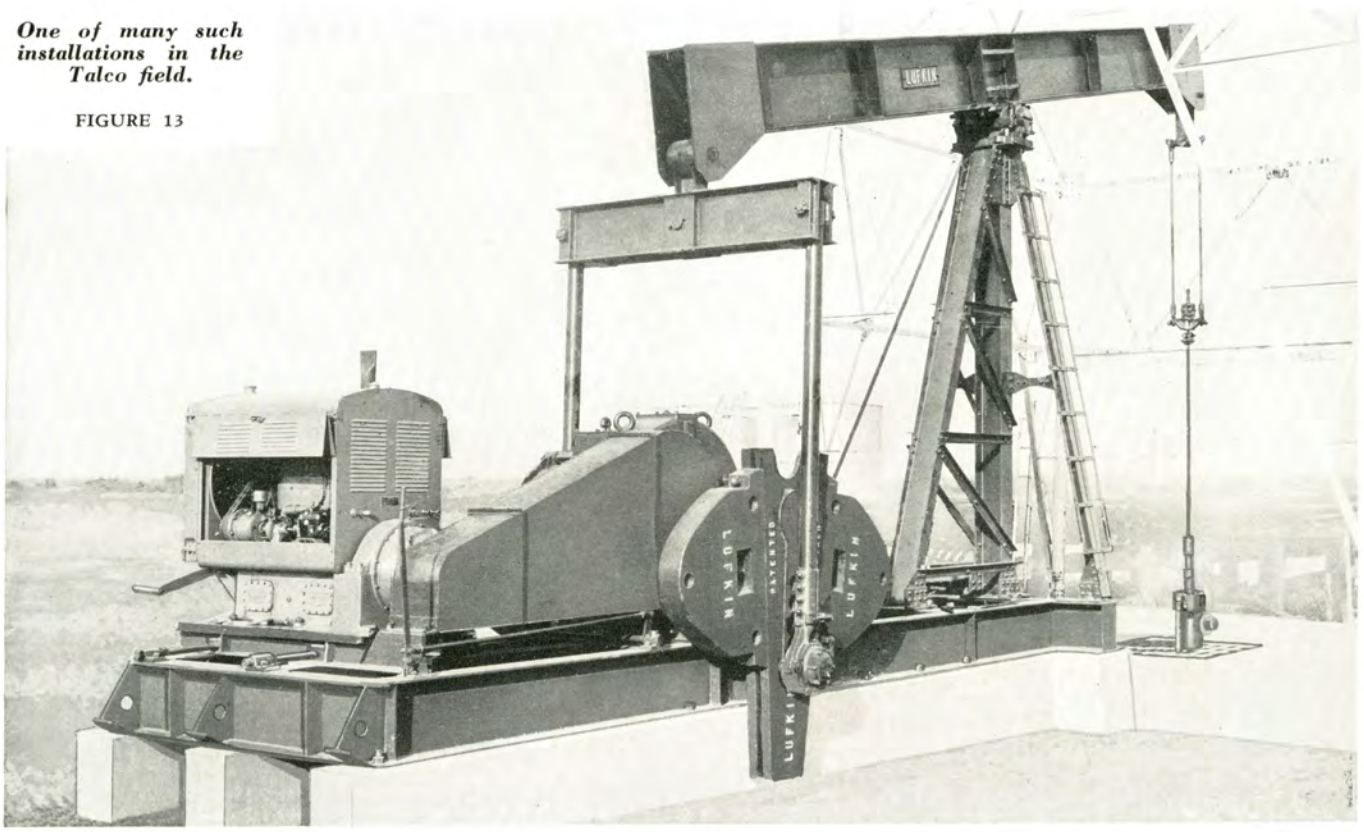


FIGURE 12

LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS

One of many such installations in the Talco field.

FIGURE 13



LUFKIN TWIN CRANK UNITS

NO. 1-A TWIN CRANK ASSEMBLY. Designed for 25,000 lbs. Polish Rod Load and 74″ Maximum Stroke.

GENERAL SPECIFICATIONS: Depth Base 16″; Width Base 43″; Straight Front Samson Post 13′-0″ High; No. 1-A Bronze Center Bearing 6″ x 20″, 120 sq. ins.; Walking Beam 24″ x 14″ x 130-lbs., Hanger Type, Working Centers 12′-6″ and 12′-6″; Pitman, Structural][Cross Beam Type, 4″ Pipe Connections; 4″ x 6″ Crank Pins; 7466 Cranks, 65½″ radius.

Unit No.	Type Gears	A.P.I. Rating	Ratio	Crank Shaft Dia.	Drive Sheave Bore	Sheave Dia. and No. Grooves	Dia. and Face Main Gear	Weight Complete	Polish Rod Stroke	Static Counterbalance, Lbs.	
										No. 2 Reg. Wts.	C.I. Aux. Wts.
54	SR	51.7 HP 255,682 PT	9.4	6 1/16″	3 1/16″	35″—11C 35″—Max.	47″ x 10″	34,100 lb	34″	24,200	30,100
									44″	18,700	23,250
									54″	15,250	18,950
41	DR	44.0 HP 217,602 PT	30.12	6 1/16″	2 15/16″	25″— 8C 48″—Max.	34″ x 10″	34,300 lb	64″	12,850	16,000
									74″	11,150	13,850

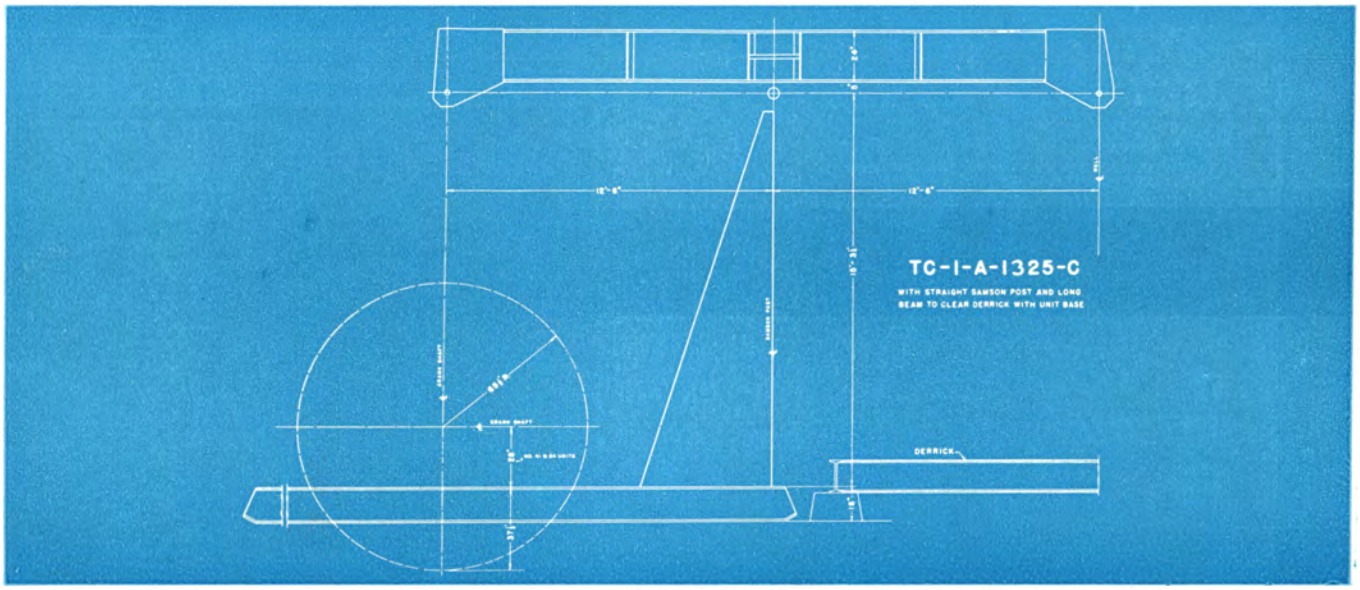


FIGURE 14

FIGURE 15

LUFKIN TWIN CRANK UNITS

NO. 2-A TWIN CRANK ASSEMBLY. Designed for 20,000 lbs. Polish Rod Load and 64″ Maximum Stroke.

GENERAL SPECIFICATIONS: Depth Base 16″; Width Base 37″; Tripod Samson Post 12′-0″ High; No. 2-A Bronze Center Bearing, 6″ x 17″, 102 sq. ins.; Walking Beam 24″ x 12″ x 100-lbs., Hanger Type, Working Centers 10′-0″ and 10″-0″; Pitman, Structural][Cross Beam Type, 3″ Heavy Pipe Connections; 3½″ x 5″ Crank Pins; 6460 Cranks, 59½″ radius. An 18″ Sub-base may be furnished to clear cranks over foundation.

Unit No.	Type Gears	A.P.I. Rating	Ratio	Crank Shaft Dia.	Drive Sheave Bore	Sheave Dia. and No. Grooves	Dia. and Face Main Gear	Weight Complete	Polish Rod Stroke	Static Counterbalance, Lbs.			
										Regular		Special	
										#2A Wts.	Aux. Wts.	#2 Wts.	Aux. Wts.
26-B	SR	32.1 HP 158,750 PT	10.5	6″	2 13/16″	32″— 8C 32″—Max.	42″x8″	26,000 lb	24″	25,950	31,950	28,800	35,950
									34″	18,300	22,550	20,350	25,350
									44″	14,150	17,400	15,700	19,600
31-B	DR	30.8 HP 152,320 PT	28.7	6″	2 7/16″	25″— 6C 40″—Max.	27″x11″	26,260 lb	54″	11,550	14,200	12,800	15,950
									64″	9,750	12,000	10,800	13,500

No. 2 Twin Crank Assembly is identical with No. 2-A above except Hinge Horse Head Type Beam furnished instead of Hanger Type.

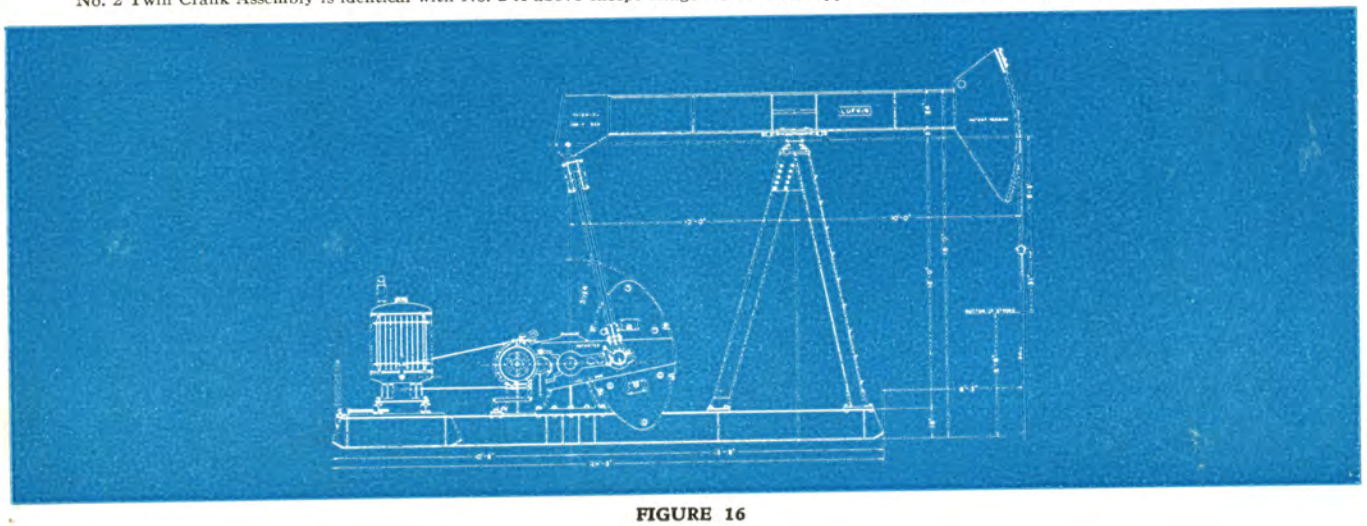


FIGURE 16

LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS

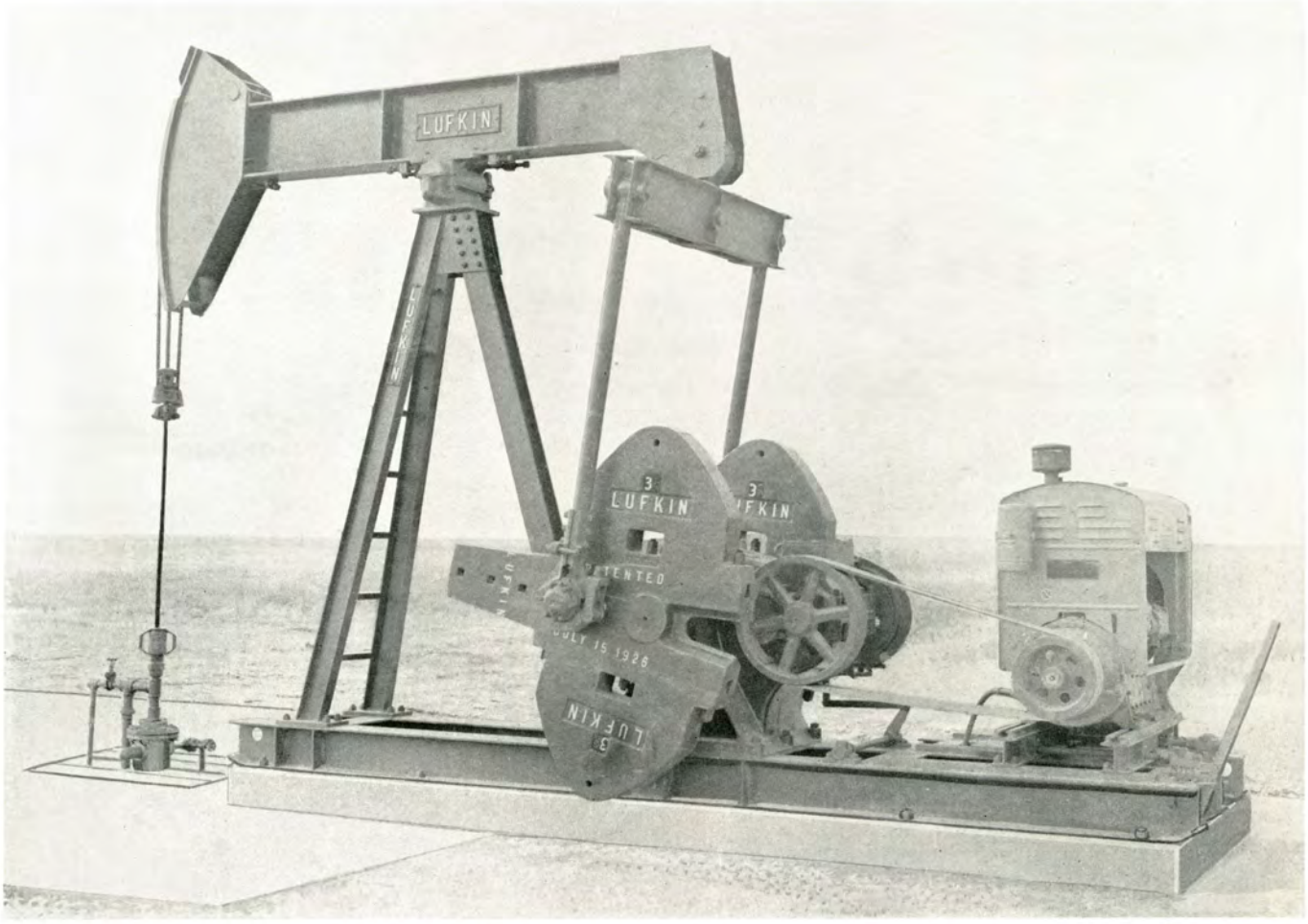


Figure 17—Showing unit with belt cover removed.

TC-3-22-B

LUFKIN TWIN CRANK UNITS

NO. 3 TWIN CRANK ASSEMBLY. Designed for 17,000 lbs. Polish Rod Load and 54″ Maximum Stroke.

GENERAL SPECIFICATIONS: Depth Base 10″; Width Base 32″; Tripod Samson Post 10′-0″ High; No. 3-A Bronze Center Bearing, 6″ x 14″, 84 sq. ins.; Walking Beam 18″ x 8¾″ x 64-lbs., Hinge Horse Head Type, Working Centers 5′-3¼″ and 7′-0″; Pitman, Structural][Cross Beam Type, 3″ Heavy Pipe Connections. 3½″ x 5″ Crank Pins; 4146 Cranks, 45½″ radius. A 10″ Sub-base may be furnished to clear cranks over foundation.

Unit No.	Type Gears	A.P.I. Rating	Ratio	Crank Shaft Dia.	Drive Sheave Bore	Sheave Dia. and No. Grooves	Dia. and Face Main Gear	Weight Complete	Polish Rod Stroke	Static Counterbalance, Lbs.	
										No. 3 Reg. Wts.	C. I. Kidney Aux. Wts.
18	SR	25.4 HP 125,616 PT	10.5	4 7/16″	2 11/16″	34″— 6C 34″—Max.	42″ x 6″	19,300 lb	27.9″	12,550	18,050
22-B	DR	22.2 HP 109,790 PT	28.67	4 7/16″	2 3/16″	25″— 5C 40″—Max.	25″ x 7 5/8″	19,300 lb	41.2″	8,500	12,250
									54″	6,450	9,300

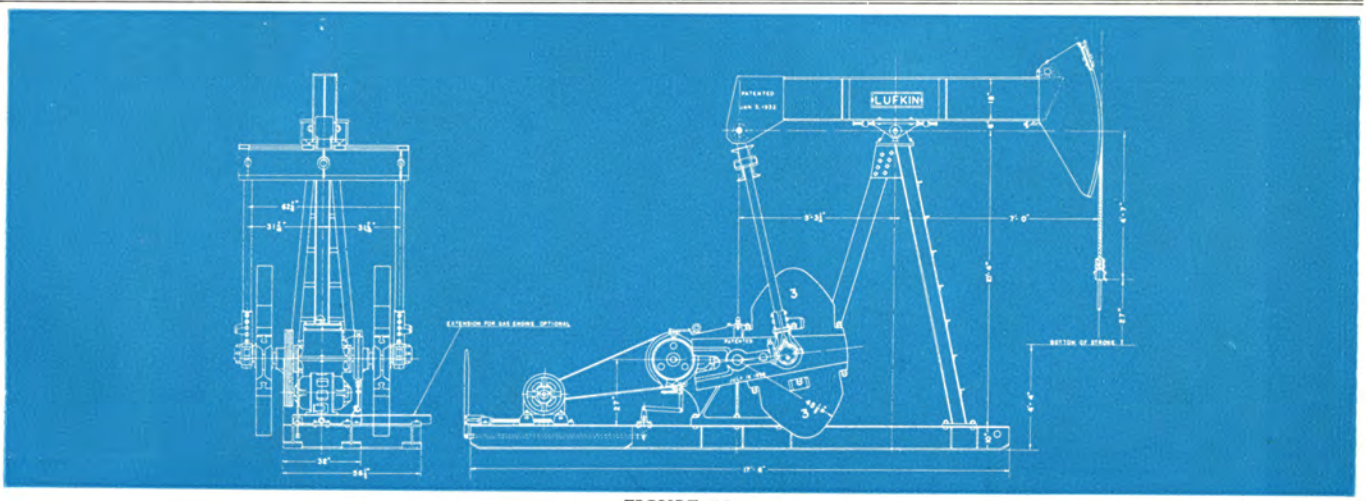


FIGURE 18

LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS

FIGURE 19

LUFKIN TWIN CRANK UNITS

NO. 4 TWIN CRANK ASSEMBLY. Designed for 12,000 lbs. Polish Rod Load and 42″ Maximum Stroke.

GENERAL SPECIFICATIONS: Depth Base 10″; Width Base 32″; Tripod Samson Post 8′-2½″ High; No. 4-A Bronze Center Bearing, 5″ x 10½″, 52.5 sq. ins.; Walking Beam 16″ x 8½″ x 58-lbs., Hinge Horse Head Type, Working Centers 5′-3¼″ and 6′-0″; Pitman, Structural][Cross Beam Type, 2½″ Heavy Pipe Connections; 2½″ x 4″ Crank Pins; 3646 Cranks, 45½″ radius. A 10″ Sub-base may be furnished to clear cranks over foundation.

Unit No.	Type Gears	A.P.I. Rating	Ratio	Crank Shaft Dia.	Drive Sheave Bore	Sheave Dia. and No. Grooves	Dia. and Face Main Gear	Weight Complete	Polish Rod Stroke	Static Counterbalance, Lbs.	
										No.3A Reg.Wts.	C. I. Kidney Aux. Wts.
11-A	DR	14.6 HP 72,204 PT	29.24	4 7/16″	1 11/16″	20″— 4C 32″—Max.	22″ x 7″	14,850 lb	18.6″	15,000	20,650
									30.5″	9,200	12,700
									42.0″	6,650	9,200

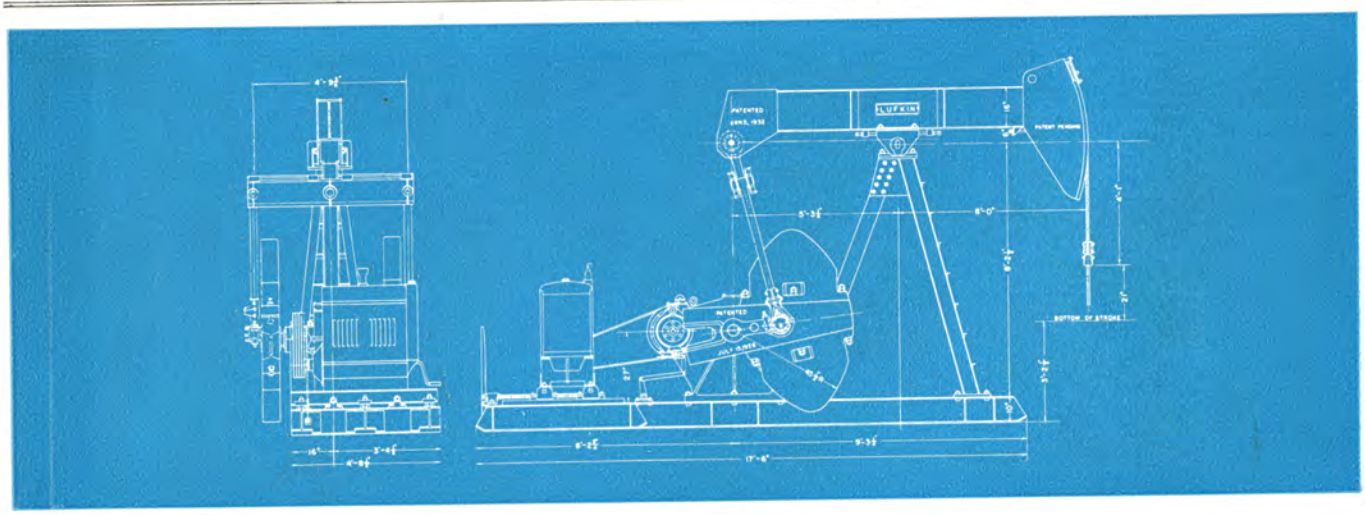


FIGURE 20

LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS

FIGURE 21

LUFKIN TWIN CRANK UNITS

NO. 5 TWIN CRANK ASSEMBLY. Designed for 10,000 lbs. Polish Rod Load and 36″ Maximum Stroke.

GENERAL SPECIFICATIONS: Depth Base 8″; Width Base 25″; Tripod Samson Post 8′-2½″ High; No. 4-A Bronze Center Bearing, 5″ x 10½″, 52.5 sq. ins.; Walking Beam 12″ x 8″ x 40-lbs., Hinge Horse Head Type, Working Centers 5′-0″ and 5′-0″; Pitman, Structural][Cross Beam Type, 2½″ Heavy Pipe Connections; 2½″ x 4″ Crank Pins; 3636 Cranks, 36″ radius. A 12″ Sub-base may be furnished to clear cranks over foundation.

Unit No.	Type Gears	A.P.I. Rating	Ratio	Crank Shaft Dia.	Drive Sheave Bore	Sheave Dia. and No. Grooves	Dia. and Face Main Gear	Weight Complete	Polish Rod Stroke	Static Counterbalance, Lbs.	
										No. 4 Reg. Wts.	C. I. Kidney Aux. Wts.
7	DR	8.5 HP 42,037 PT	29.32	3 7/16″	1 11/16″	20″— 3C 28″—Max.	20″ x 5″	11,930 lb	16″	10,750	15,350
									26″	6,600	9,450
									36″	4,800	6,800

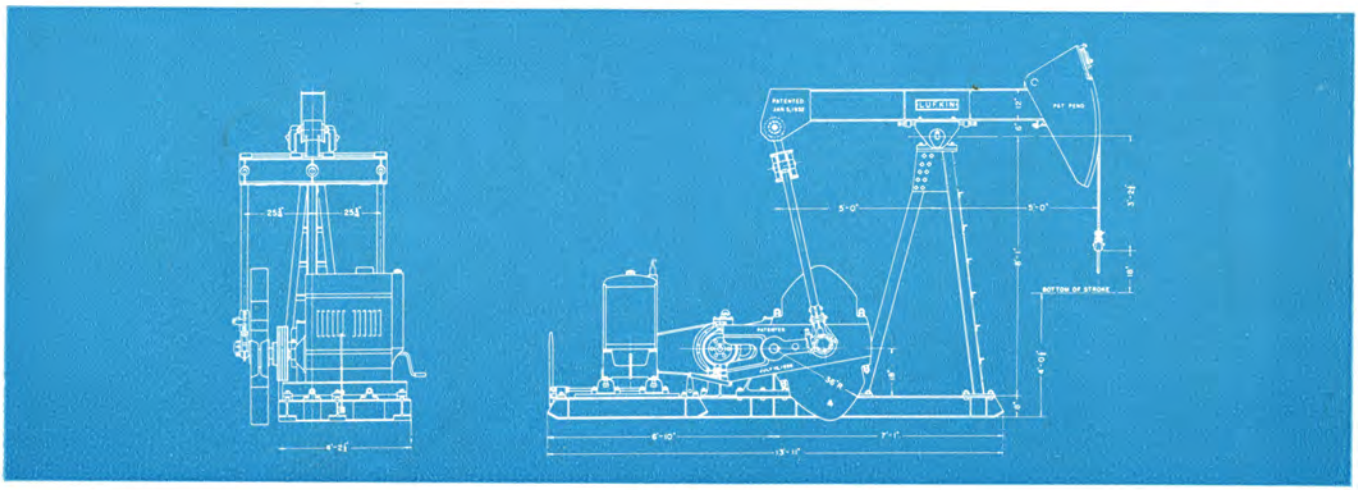


FIGURE 22

SPECIAL FEATURES OF LUFKIN TWIN CRANK UNITS

All Lufkin Twin Crank Unit bases are drilled so that an attachment for pumping two additional wells may be applied at any time. (See illustrations on this page).

The idea of pumping a multiplicity of wells with a twin crank unit is particularly adaptable in fields under proration, but is not recommended for general practice.

FIGURE 23

Lufkin Twin Crank Unit with "Under-pull" take-off pulling one additional well

FIGURE 24

Lufkin Twin Crank Unit pulling two additional wells on an East Texas well under proration.

FIGURE 25—*Showing hinged horse-head turned back over beam for servicing well*

FIGURE 26

Motor mounted under post for compactness. Note sub-base under unit so cranks can clear where unit is mounted on derrick floor. We can furnish sub-bases for all types of Lufkin twin crank units.

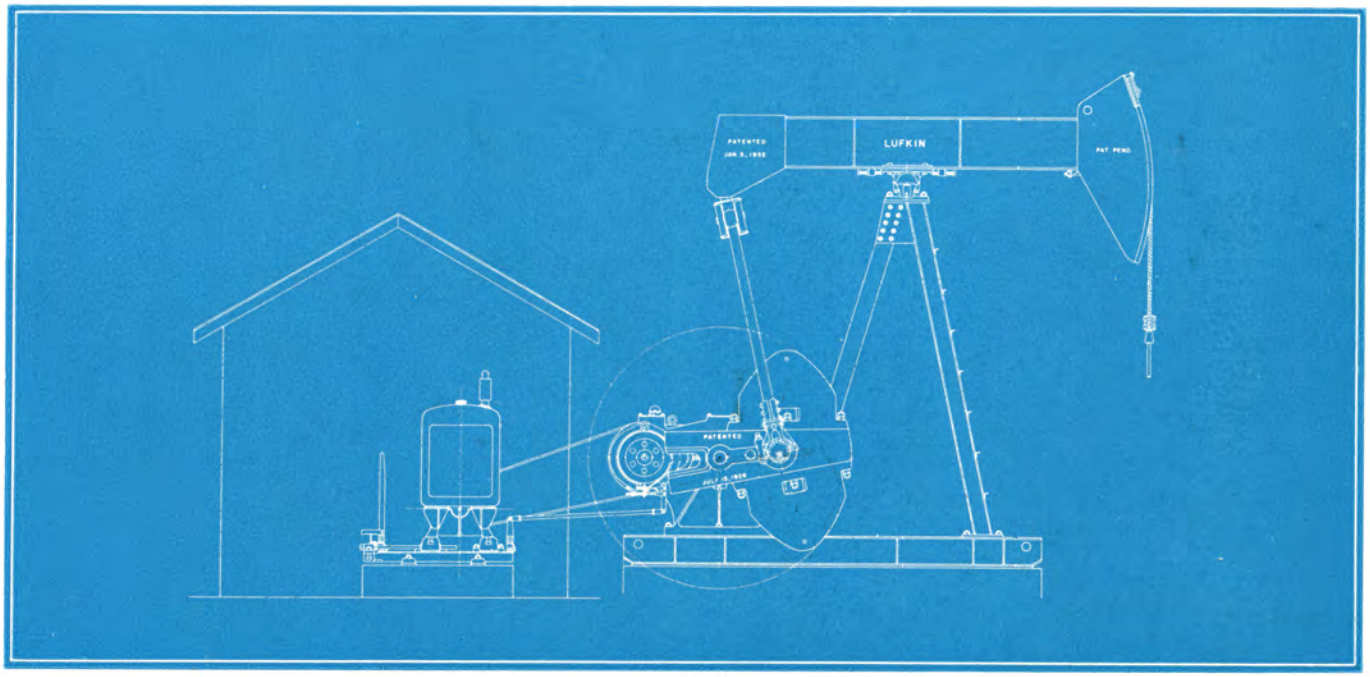


FIGURE 27

Special stub base under twin crank unit where it is desired to house engine

HORSE POWER RATINGS

Horsepower and peak torque ratings in this catalog are based on the A.P.I. tentatively adopted formula. Among many engineers, it is regarded at least as a yard stick for comparison until experience dictates a change.

We suggest that in selecting units, the size larger be used, as our experience is that as a rule horsepower requirements are under-estimated, and units are too often overloaded. Selecting the size larger is a safer investment, giving longer life and lower operating costs.

OIL SEALS ON ALL LUFKIN EQUIPMENT

After years of testing oil seals in units and bearings generally, we have standardized and adopted Garlock oil seals that really work. On all our bearings (excepting babbitted center bearings and crank pins for which they are not applicable), not only in the units but beam bearings, bronze center bearings and crank pins for which they are not throughout with these seals. They will be found economical and satisfactory.

FIGURE 28

Our warehouse and office, Alice, Texas. Units in foreground are a part of stock which is carried on hand, as well as parts, etc.

LUFKIN TWIN CRANK UNITS

Lufkin Twin Crank Unit Assembly No. O-A-58. Oklahoma City field installation. Well cleaning out easily done with Lufkin Units.

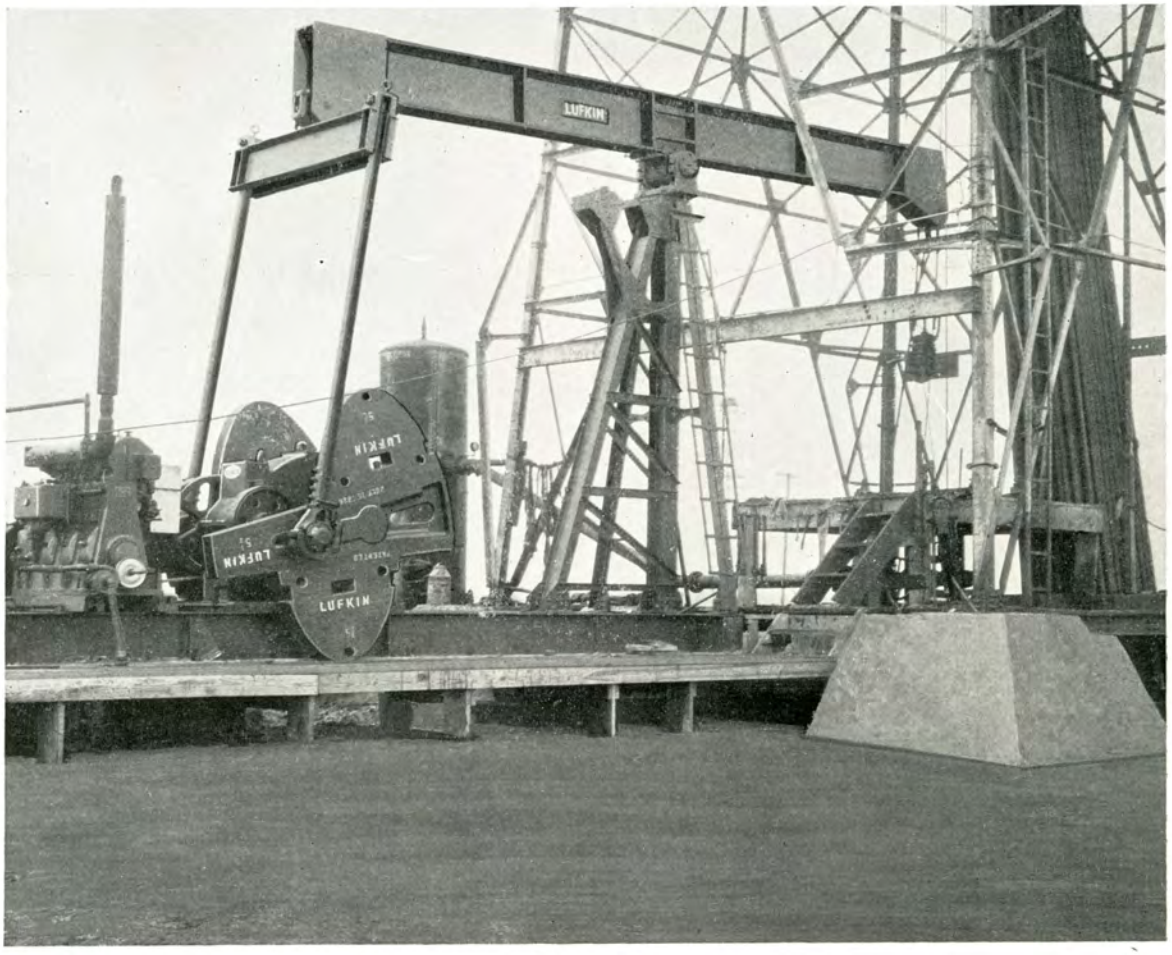


FIGURE 29

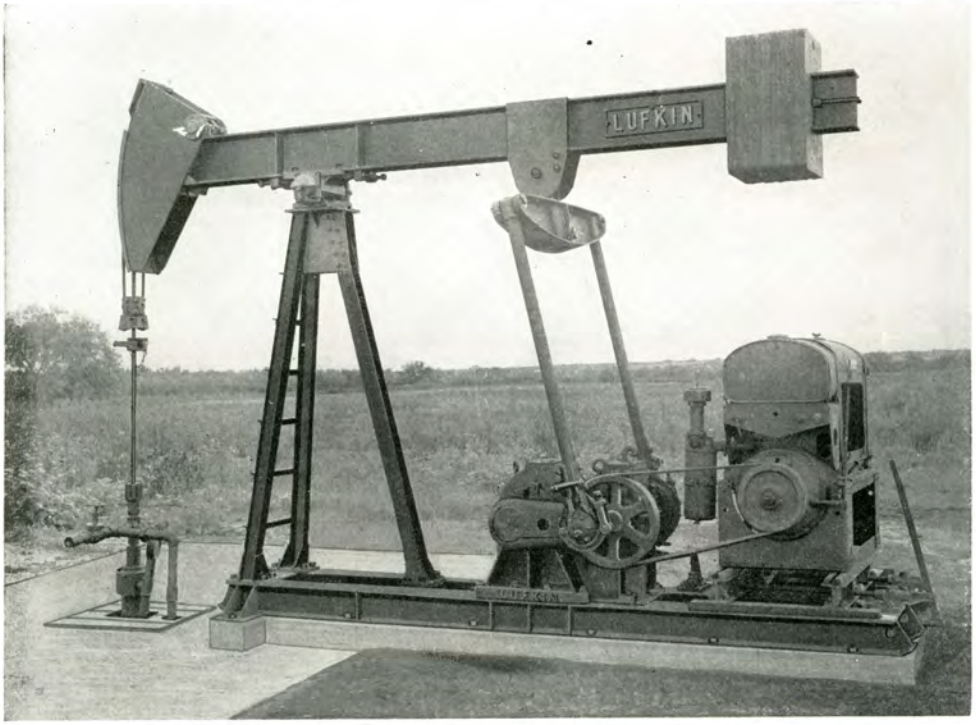


FIGURE 30

SPECIAL TWIN CRANK UNITS

Lufkin Twin Crank Units with weighted beams are designed for light production and, usually, slow pumping. This type unit is made in the T. C. 5-7 size only, 8.5 H.P. with 36″ stroke. Their general characteristics are as follows:

Base 8″ deep, width 25″.
Tripod post 8′ 2½″ high.
No. 4-A center bearing.
Walking Beam, 12″x8″x40-lb., 10′ centers.
Hinged Horsehead.
Universal pitman and equalizer.

Arranged for electric motor under samson post or for multi-cylinder engines.

LUFKIN LONG STROKE UNITS

While oil producers vary in opinion as to the advantages of long stroke pumping, there are undoubtedly well conditions under which long stroke pumping shows decided advantages.

We offer what we believe is a very practical unit for this service, in the main built like our regular line units, except gear box is in front and a short base is used so that it may be set on the derrick floor over water if desired.

The accompanying illustrations show the design and the comparison.

First: We have a wide deep base to make a self contained unit.

Second: A four legged samson post of the most rigid design.

Third: A suitable walking beam with duplicate removable horse head at each end and with wire line hangers that maintain absolute straight line motion, not only for the polish rod but counterbalance as well.

Fourth: Only two working bearings are required excepting the crank pins. The main center bearing and the equalizer bearing on top of the beam, both of renewable bronzoid, oil sealed, with ample bearing surface to withstand the heaviest loads.

Fifth: The unit operates like any of our six foot stroke units, there is no surge or undue strain at the bottom of the stroke, just steady even motion.

Sixth: Strokes of 40", 60", 80", 100" or 120" with suitable speeds can be had by changing motor sheaves (10 to 20 S.P.M.) making it a very flexible unit that is desirable for testing or permanent installations.

FIGURE 31

LUFKIN LONG STROKE UNITS

FIGURE 32

10-Foot Stroke Unit, with either No. 41 or 51 reduction gears.

(Notice spread of samson post.)

This unit is built in one size, 10-Foot Stroke, with either:

No. 41 Reduction Gears—27 H. P. at 12 R.P.M. weight 27,050 lbs., Less Counterweights.
No. 51 Reduction Gears—34 H. P. at 12 R.P.M. weight 30,200 lbs., Less Counterweights.

GENERAL SPECIFICATIONS

Polish rod load capacity 30,000 lbs.
Strokes 40″, 60″, 80″, 100″ and 120″.
H.P. Reduction gears to suit.
Walking beam centers 24′.
Post, 4-legs 14′ 3″ above base.
Base 9′ wide, 14′ 6″ long, 16″ deep.
Bronzoid center bearing 6″ x 20″.
Bronzoid equalizer bearing 5″ x 12″.
Connection rods of 5″XX tubing.
No. 41 unit sheave 37″, 8-C grooves.
No. 51 unit sheave 43″, 11-C grooves.
Motor sheave to suit.

COUNTERBALANCE WEIGHTS

Basket 3′ x 4′ 10″.
4″ thick, 4 weights wide—450 lbs. each.
2″ thick, 4 weights wide—215 lbs. each.
1″ thick, 4 weights wide—105 lbs. each.

Driven by electric motor or multi-cylinder gas engine.

See drawing Fig. 38, page 1062.

FEATURES OF THE LUFKIN LONG STROKE UNIT

Hanger removed showing clearance for servicing well

FIGURE 33

FIGURE 35

Weight basket and weights

Showing substantial design of horse head. Both ends of beam are built alike.

FIGURE 34

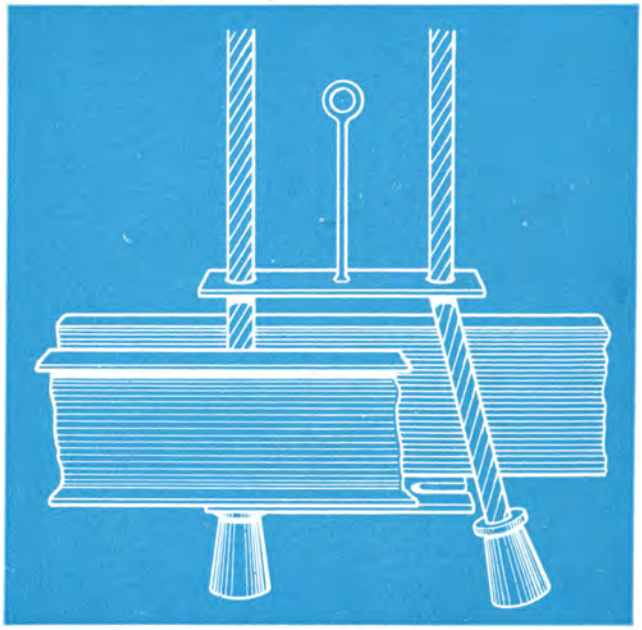


FIGURE 36

Sketch showing simple design of latch on weight basket which may be released in one minute

FIGURE 37

Lufkin Long Stroke Unit operating in California

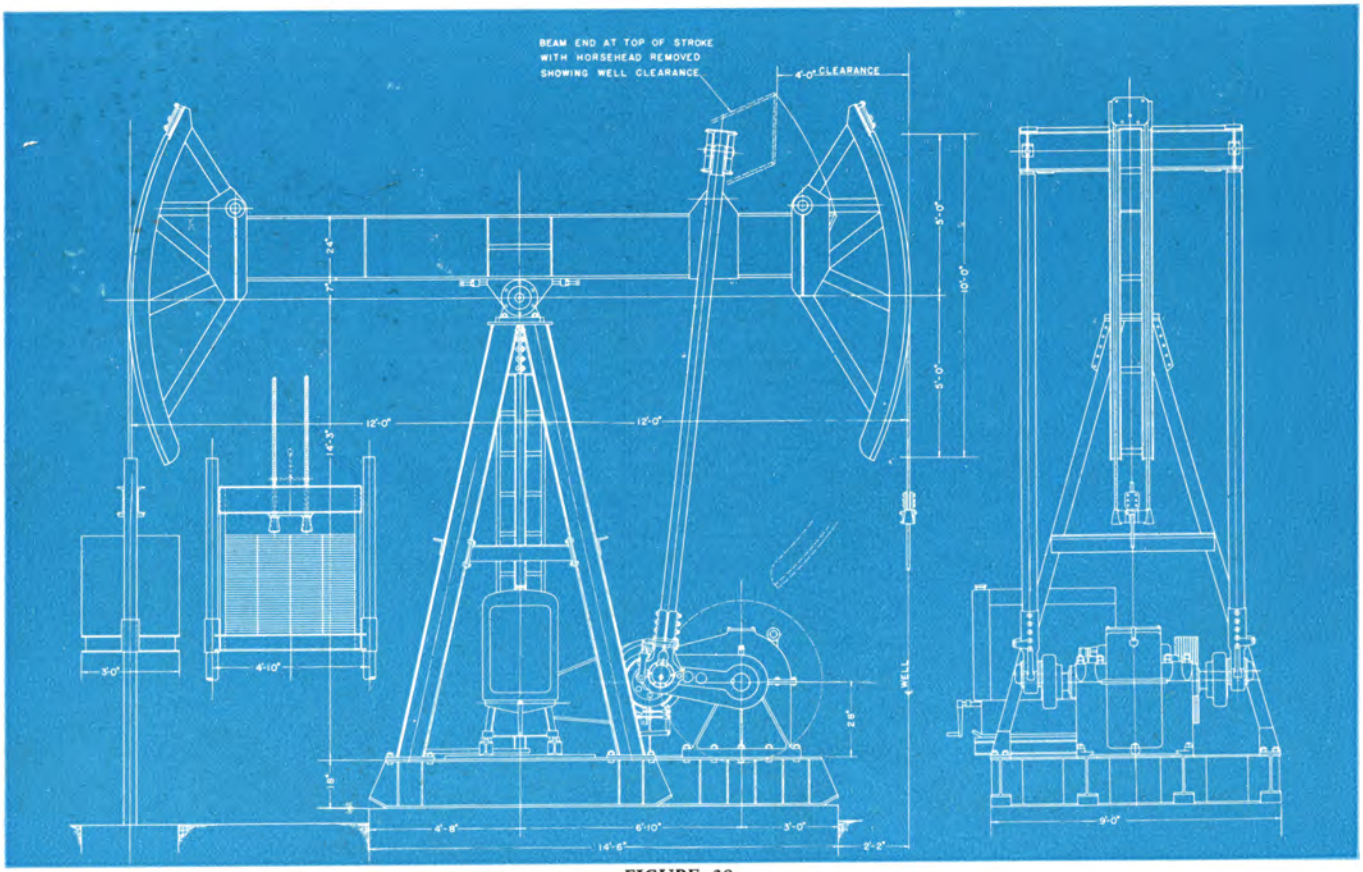


FIGURE 38

Line drawing showing general dimensions Lufkin Long Stroke Unit

FIGURE 39

Lufkin No. 58 Herringbone Gear Single Crank Unit with "Back-side" crank arrangement for pumping one or two extra wells. Note also Lufkin underslung take-off. The beam assembly is the Lufkin Center-line type, all working points in line and all bearings bronze bushed and either oil-bath or Alemite lubricated, insuring positive oiling and long wearing qualities.

FIGURE 40—*An East Texas installation Lufkin Single Crank Unit*

FIGURE 41—*Typical Lufkin Single Crank Unit installation*

FIGURE 42

Typical installation Lufkin Herringbone Gear Unit—single cylinder gas engine drive—Lufkin Center-line Beam assembly—Lufkin Rod and Tubing Hoist. View before engine house was erected

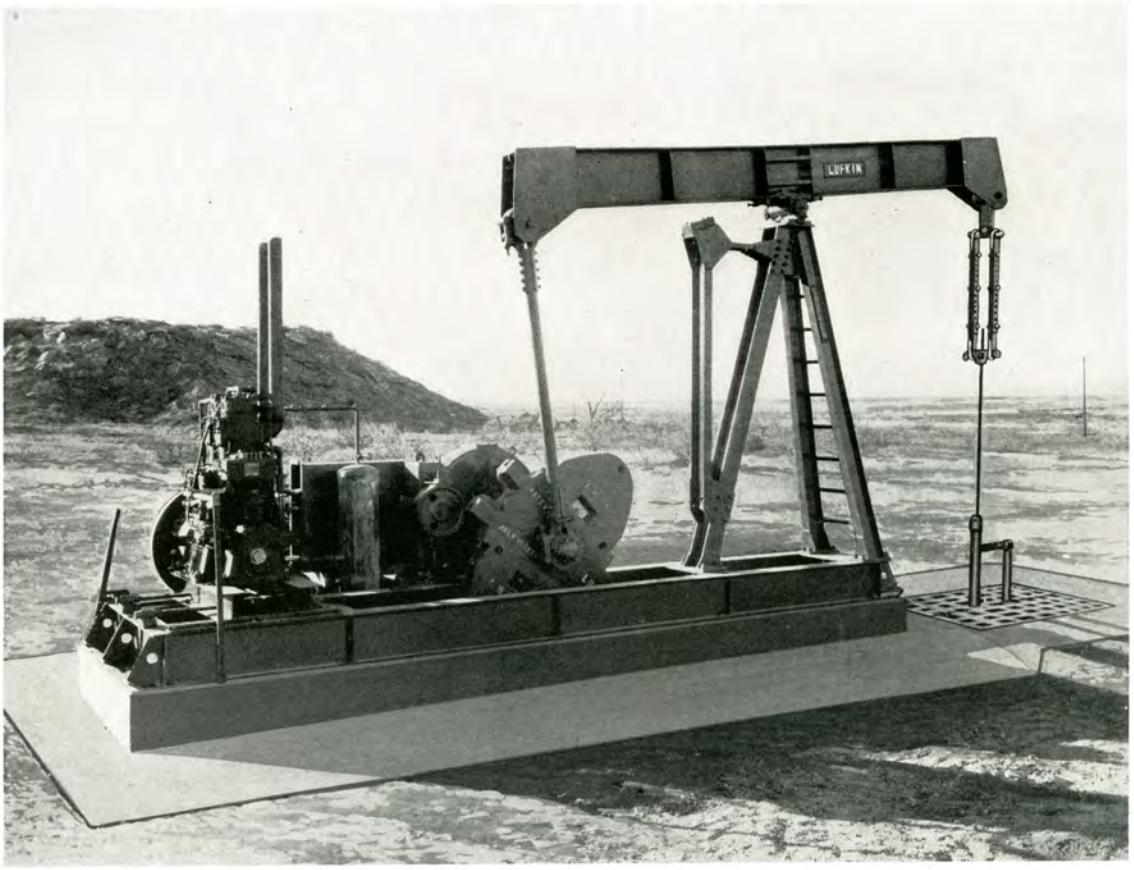


FIGURE 43

Lufkin Single Crank Unit mounted on steel base in West Texas — also arranged with Back Crank

FIGURE 44

Typical East Texas installation—East Side Wells. No. 21-B Unit, No. 2 Post, Beam and Pitman Assembly

FIGURE 45

SPECIAL SINGLE CRANK UNITS

Single crank units, with weighted beams, are used especially for light production and slow pumping and are furnished on special order only.

Two Sizes

SC No. 4-11A Unit—42″ stroke, 14.6 H.P., 10″ base, post 8′ high, 16″ x 8½″ walking beam, 11′ 3¼″ working centers, No. 4A center bearing, Universal pitman. For gas engine or electric motor.

SC No. 5-7 Unit—36″ stroke, 8.5 H.P., 8″ base, post 7′ high, 12″ x 8″ beam, 10′ working centers, No. 4A center bearing and Universal pitman. For Gas engine or electric motor.

LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS

NOTES ON ORDERING LUFKIN UNITS—OPERATING INSTRUCTIONS

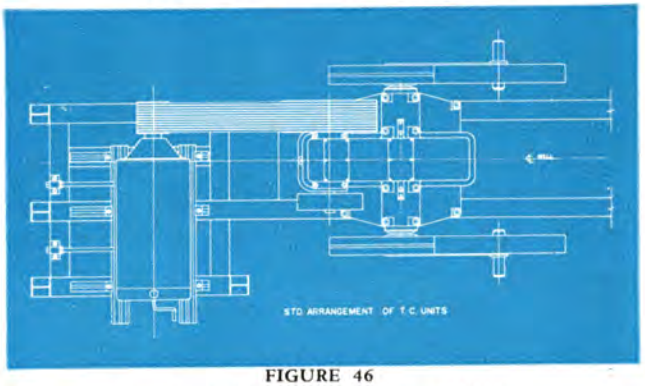


FIGURE 46
Standard Layout Twin Crank Units

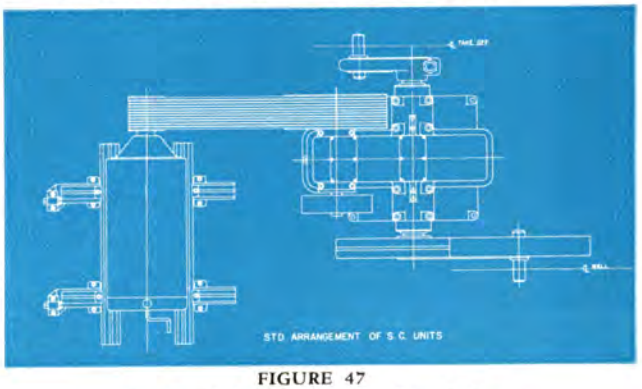


FIGURE 47
Standard Layout Single Crank Units

GENERAL NOTES APPLYING TO TWIN AND SINGLE CRANK UNITS

Drive Sheaves are on the left and Brake on the right, standing behind the unit looking toward the well.

With gas engines double reduction gear units run clockwise, single reduction gear units run counter clockwise.

Unless otherwise specified units will be shipped to operate at 20 strokes per minute. Motor sheaves are furnished for any desired speed.

TWIN CRANK UNITS

Standard Twin Crank Unit Bases are made as per print above, extension for gas engine or motor is on the right standing behind unit facing the well. Bases are the same for gas engine or electric motor. Any motor or multi-cylinder gas engine will fit. Also on large sizes some makes of 2 cylinder, slow speed engines fit without changes. However with some engines having large fly wheels special designs are necessary for the base for which we make slight extra charge.

Standard bases are regularly in stock, special bases delay shipments, but usually can be made promptly.

Units No. 0, 1, 3, 4 and 5 have short beams and wire line horse heads. Units No. OA and 1A have long beams with hanger on front end.

2-A Units may have horsehead or hanger (same length beam).

Lufkin Twin Crank Units are priced complete except Prime Mover, Foundation Bolts and Polish Rod Clamps, which are extra.

Note: Bolts are provided for bolting gas engine or motor to our Universal rails.

With each Unit we furnish Crank Pin Wrench and Wrench for counter weights.

Complete guards around cranks can be furnished at extra price.

SINGLE CRANK UNITS

Single Crank Units are quoted complete except Prime Mover, Foundation Bolts, Brake Levers and Connections, Belt Cover and Polish Rod Clamps, as these items are only furnished when specified.

Units include Drive with Motor Sheave having bore and K.S. to suit Prime Mover, "V" Belts, Brake and Brake Band (only), Crank, Crank Pin and Counter Weights. Back Cranks are extra.

Headache posts between sampson post and well are extra.

Electric Motors, include overload relay and push button station.

Gas Engines (multi-cylinder type) are complete except Volume Tank, Scrubber and Regulator.

ERECTING AND OPERATING INSTRUCTIONS

NOTE: For ready office reference we include operating instructions herewith as they appear on our name plates—which have of course identification information for each unit as follows: Type, Order No., Gear Ratio, Serial No., H.P. Ratings, Peak Torque in accordance with A.P.I. requirements.

1. When erecting a unit, special attention and care should be taken to see that crank pins and bearings, equalizer pins and holes for same are well cleaned.
2. When applying counterweights see that ways and slots are clean. Use wrench furnished to tighten bolts thoroughly.
3. Be sure that pulley and brake keys are tight before starting.
4. Do not jam on brake. Apply gradually.

Lubrication—Most Important

GEAR BOX

Use S.A.E. 50 motor oil for temperatures 70°F. and above.
Use S.A.E. 40 motor oil for temperatures 70°F. and below.
Fill gear box until oil runs out top pet cock.
NOTE: Do not fill above top pet cock.
Change oil semi-annually. This unit requires — gallons.

PITMAN

Fill with 120 to 150 S.A.E. (steam cylinder oil) to oil level plug in cover. Check weekly. Change every three months. Too much oil causes leaks. For roller bearings use No. 3 grease.

CENTER BEARINGS

Use same oil as in gear box. Be sure center bearing is full to gauge. To insure this, remove plugs from both ends of bearing, fill and replace.

ROD HANGER AND EQUALIZER BEARINGS

Use No. 3 gun grease. To insure filling remove small plugs to let air out. See that grease comes thru before replacing plugs. Check weekly.

GENERAL

The above instructions are for average operating conditions. However, for unusually heavy wells in cold weather, lubrication should be watched closely, especially the pitman, center bearings, and beam bearings.

When ordering parts, give serial number of unit.

THE BACK-BONE OF A LUFKIN UNIT

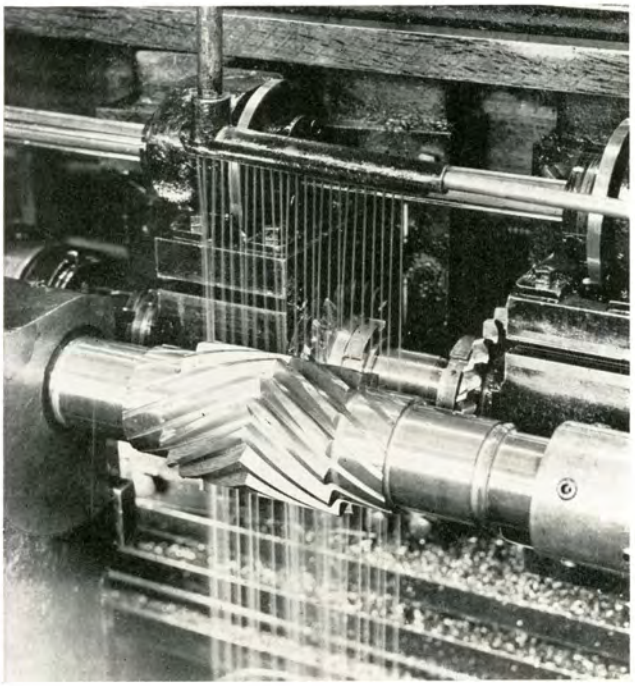


FIGURE 48

Lufkin-Sykes Herringbone gears are often called "The Gears with a back-bone". All gears used in Lufkin Units are generated on machines in our own plant under a most rigid inspection system. The gear and its mating pinion are "lapped in" by running together for several hours using ground glass and oil on the teeth, to insure smooth and silent operation.

Lufkin-Sykes Herringbone gears have many distinct advantages over other types of gearing: The teeth are stronger due to arch-like construction; uniform load across face due to balanced thrust of the opposing helices; no thrust bearings necessary; smoother action due to absence of distortion; better lubrication due to oil film formed by "wedge action" of the teeth; and due to the accuracy of their cutting they are more silent.

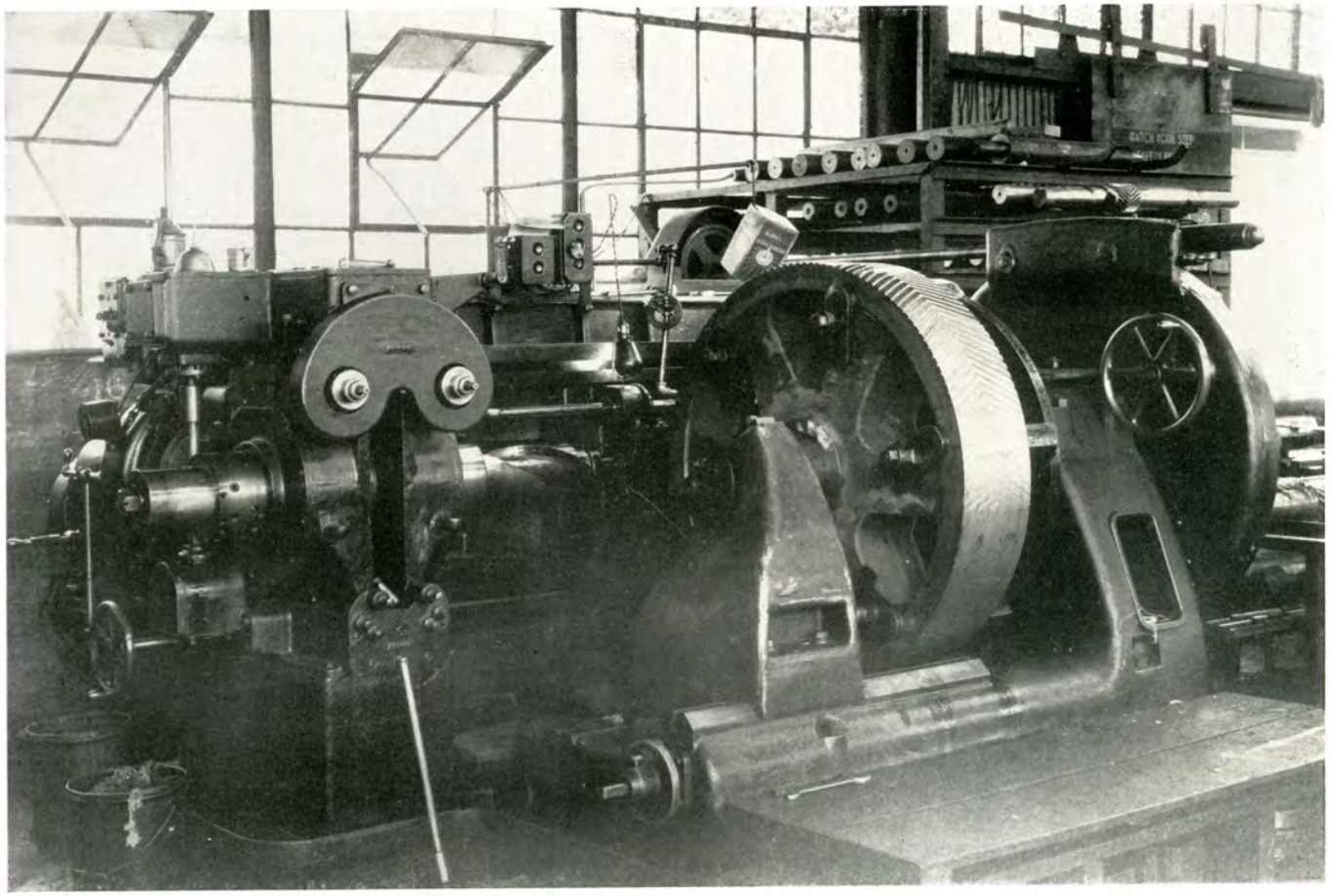


FIGURE 49

One of a battery of Sykes Gear Generators—Starting the cut on a large gear Above—Showing cutters finishing a pinion on the same machine

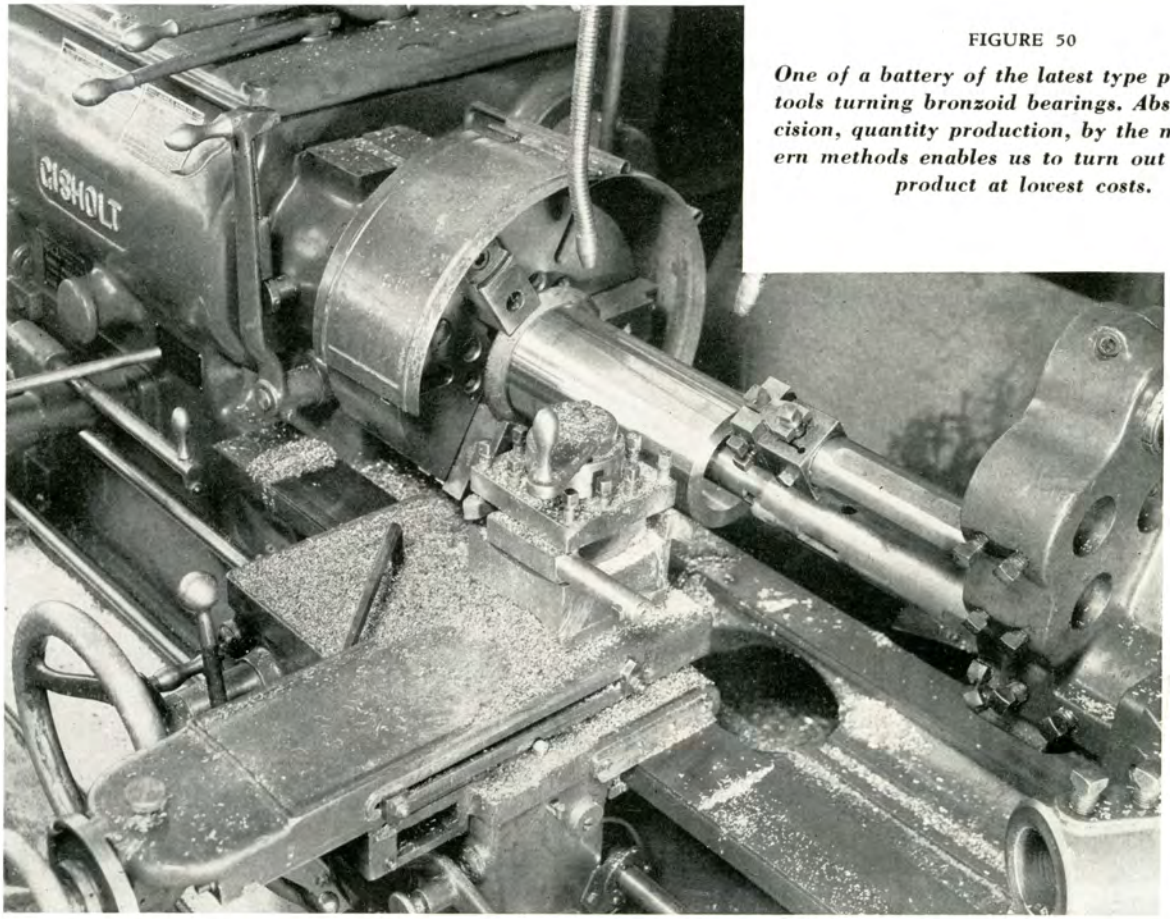


FIGURE 50

One of a battery of the latest type production tools turning bronzoid bearings. Absolute precision, quantity production, by the most modern methods enables us to turn out a quality product at lowest costs.

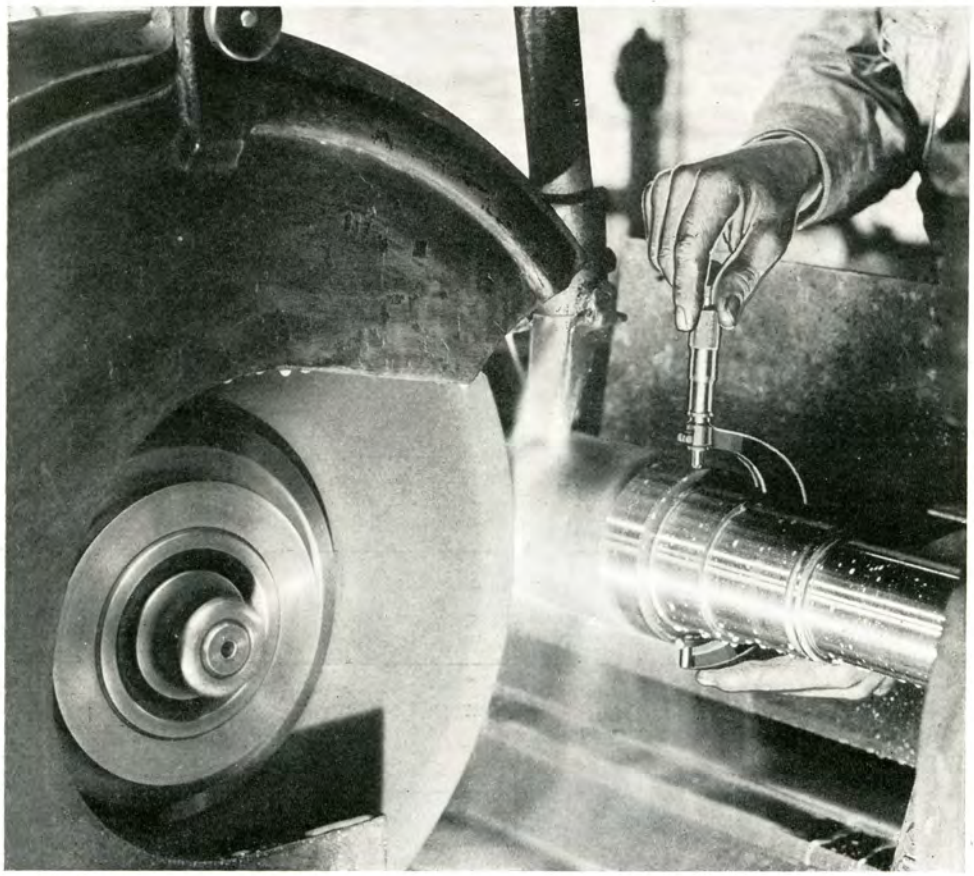


FIGURE 51

Grinding for accuracy—All shafts and pinions, crank pins, equalizer connection pins, beam bearings are ground to absolute size for Lufkin units, another step in production methods that means real value to the purchaser of our equipment.

LUFKIN SINGLE CRANK UNITS

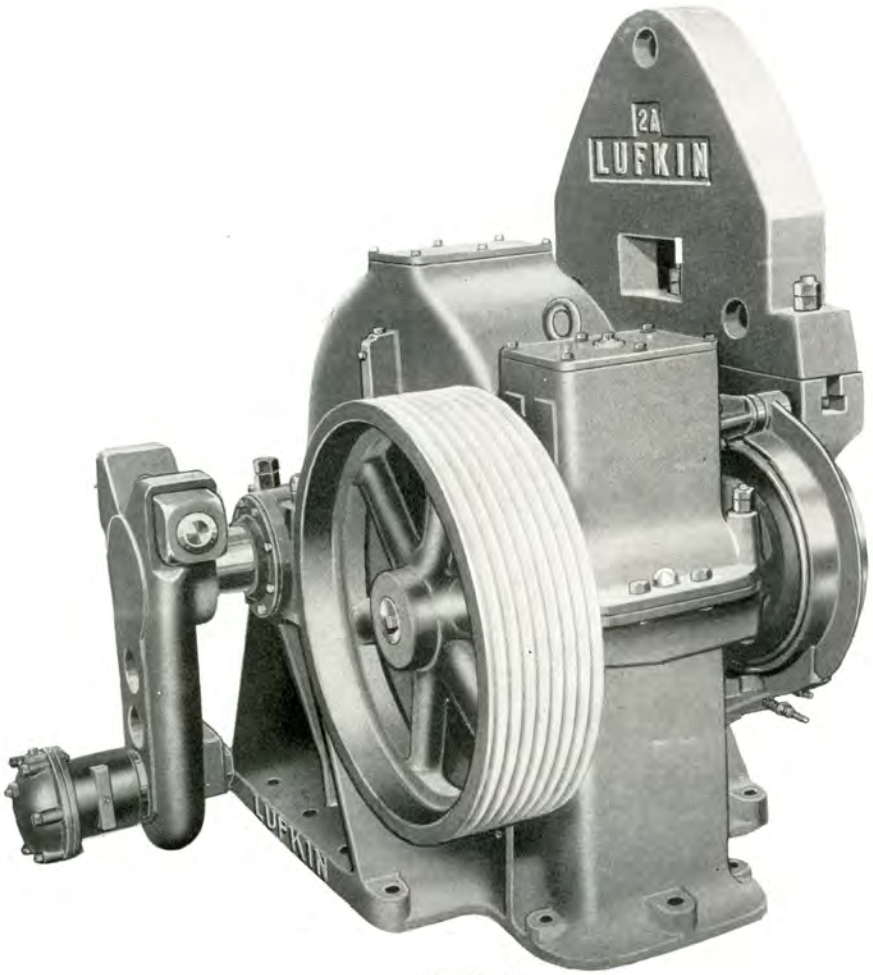


FIGURE 52

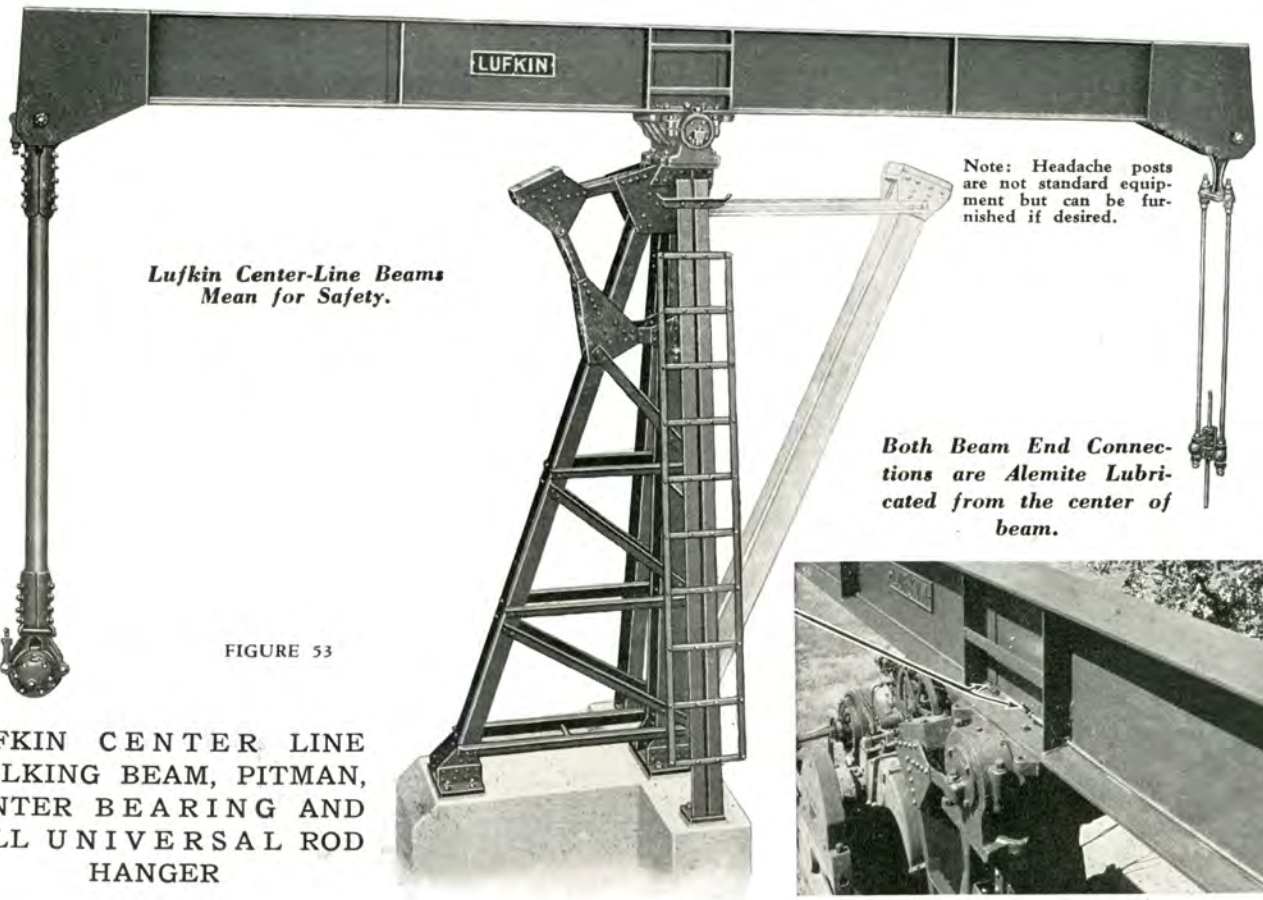
All Lufkin units, both single and double reduction types are built as illustrated with the sheave on the left side and brake on the right. The main counterbalance, of course, is on the right. The back-side crank is on the left. The sheave and brake can be reversed, if necessary, to suit special requirements. The cut to the left illustrates a complete and standard unit with the exception of the back-crank, which is extra and considered special.

Horsepower and peak torque ratings are based on the A.P.I. tentatively adopted formula on a gear hardness of 210 Brinnell and pinion hardness of 270.

SINGLE CRANK UNITS. GENERAL SPECIFICATIONS

Assembly No.	Unit No.	Type Gears	A.P.I. Rating	Ratio	Crank Shaft Dia.	Drive Sheave Bore	Sheave Dia. and No. Grooves	Dia. and Face Main Gear	Center Crank to Base Unit	Crank and Wts.	Stroke	Static Counter-Balance, Lbs. Reg. Wts.	Aux. Wts.
1.....	58	SR	67.4 HP 333,327 PT	9.7	6 7/16"	3 11/16"	43 1/4"—11C 43 1/4"—Max.	55"x10"	35"	7472 and No. 1	34"	16,000	19,950
	51	DR	54.3 HP 268,541 PT	28.79	6 7/16"	3 3/16"	35"—11C 52"—Max.	36"x12"	30"		44"	12,350	15,400
	54	SR	51.7 HP 255,682 PT	9.4	6 7/16"	3 7/16"	35"—11C 35"—Max.	47"x10"	28"		54"	10,100	12,550
	41	DR	44.0 HP 217,602 PT	30.12	6 7/16"	2 11/16"	25"—8C 48"—Max.	34"x10"	28"		64"	8,500	10,600
											74"	7,550	9,400
2.....	26-B	SR	32.1 HP 158,750 PT	10.5	6"	2 11/16"	32"—8C 32"—Max.	42"x 8"	27"	6466 and No. 2	34"	12,100	15,050
											44"	9,350	11,650
	31-B	DR	30.8 HP 152,320 PT	28.7	6"	2 7/16"	25"—6C 40"—Max.	27"x11"	27"		54"	7,650	9,500
											64"	6,450	8,000
3.....	21-B	DR	22.2 HP 109,790 PT	28.67	5 7/16"	2 3/16"	20"—5C 36"—Max.	25"x7 5/8"	22"	5460 and No. 2	24"	14,400	17,950
											34"	10,150	12,700
											44"	7,850	9,800
											54"	6,400	8,000
4.....	11-A	DR	14.6 HP 72,204 PT	29.24	4 7/16"	1 11/16"	20"—4C 32"—Max.	22"x7"	27"	4456 and No. 2-A	24"	11,500	14,150
											34"	8,100	10,000
											44"	6,300	7,750

LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS



Lufkin Center-Line Beams Mean for Safety.

Note: Headache posts are not standard equipment but can be furnished if desired.

Both Beam End Connections are Alemite Lubricated from the center of beam.

FIGURE 53

LUFKIN CENTER LINE WALKING BEAM, PITMAN, CENTER BEARING AND FULL UNIVERSAL ROD HANGER

FIGURE 54

POST, BEAM, AND PITMAN SPECIFICATIONS FOR LUFKIN SINGLE CRANK UNITS

NO. 1—POST, BEAM ASSEMBLY USED WITH NO. 1 SINGLE CRANK UNITS

No. 1325C Walking Beam, 24″ x 14″—130-lb., 25′ Centers, Rating 23,900 lbs.

No. 16 Straight Front Post, 16′-3″ Base to Center.

No. 1 Heavy duty straight front post 15′ 3″ base to center.

No. 1A Bronze Oil Bath Center Bearing (6″x20″).

No. 1 Double End Pitman for 4″ x 6″ Crank Pin and 5″ Pipe Connection.

NO. 10—POST, BEAM ASSEMBLY USED WITH NO. 2 SINGLE CRANK UNITS

No. 1025C Walking Beam, 24″ x 12″—100-lb., 25′ Centers, Rating 16,855 lbs.

No. 1 Standard Straight Front Post, 15′-3″ Base to Center. (This post takes either No.'s 1A or 2A bearings.)

No. 2A Bronze Oil Bath Center Bearing, 6″ x 17″.

No. 1 Double End Pitman for 4″ x 6″ Crank Pin and 5″ Pipe Connection.

NO. 2—POST, BEAM ASSEMBLY USED WITH NO. 3 SINGLE CRANK UNITS

No. 8220C Walking Beam, 21″ x 9″—82-lb., 20′ Centers.

No. 12 Tripod Front Post, 12′ Base to Center.

No. 3A Bronze Oil Bath Center Bearing, 6″ x 14″.

No. 1 Double End Pitman for 4″ x 6″ Crank Pin and 4″ Pipe Connection.

NO. 3—POST, BEAM ASSEMBLY USED WITH NO. 4 SINGLE CRANK UNITS

No. 6414CH Horsehead Beam, 18″ x 8¾″—64-lb., 14′ Centers.

No. 3 Tripod Post, 10′ Base to Center.

No. 4A Bronze Oil Bath Center Bearing, 5″ x 11″.

No. 2 Double End Pitman 3½″ x 5″ Crank Pin and 3″ Pipe Connection.

GENERAL NOTES:

28′ Center Line Beams may be furnished on No. 1 and No. 10 assemblies at slight extra costs.

Tripod Posts furnished in place of straight front posts at no extra cost.

Babbitted Center Bearings can be supplied in place of bronze at reduced price.

LUFKIN CENTER LINE BEAM DETAILS

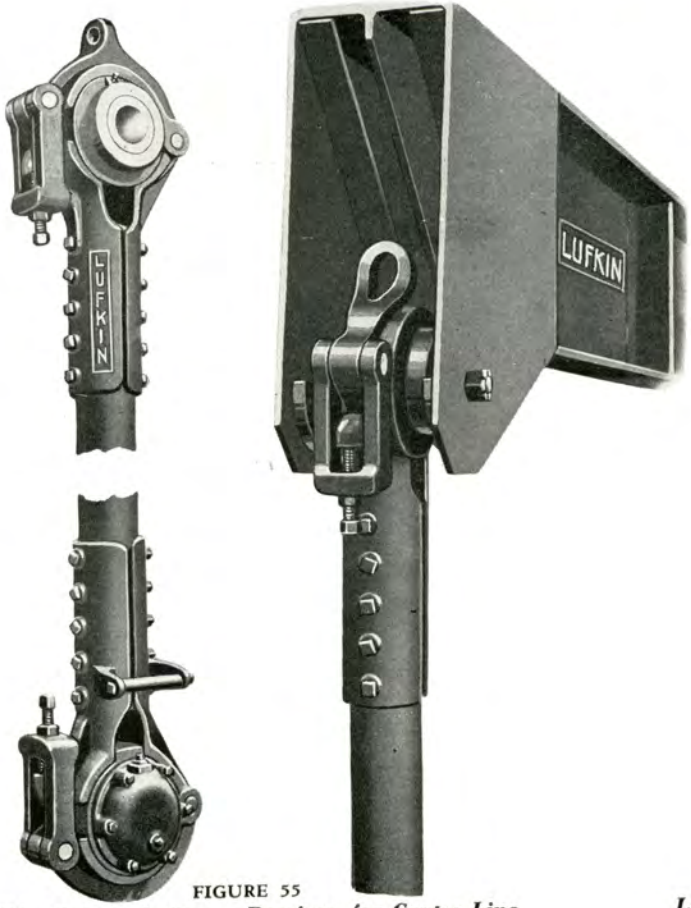


FIGURE 55
Lufkin Universal Pitman Bearings for Center Line Beam Assemblies

Lufkin polish rod clamp

FIGURE 57

FIGURE 58
Center line beam hanger with bronze bearing, equalizer and heavy duty side bars

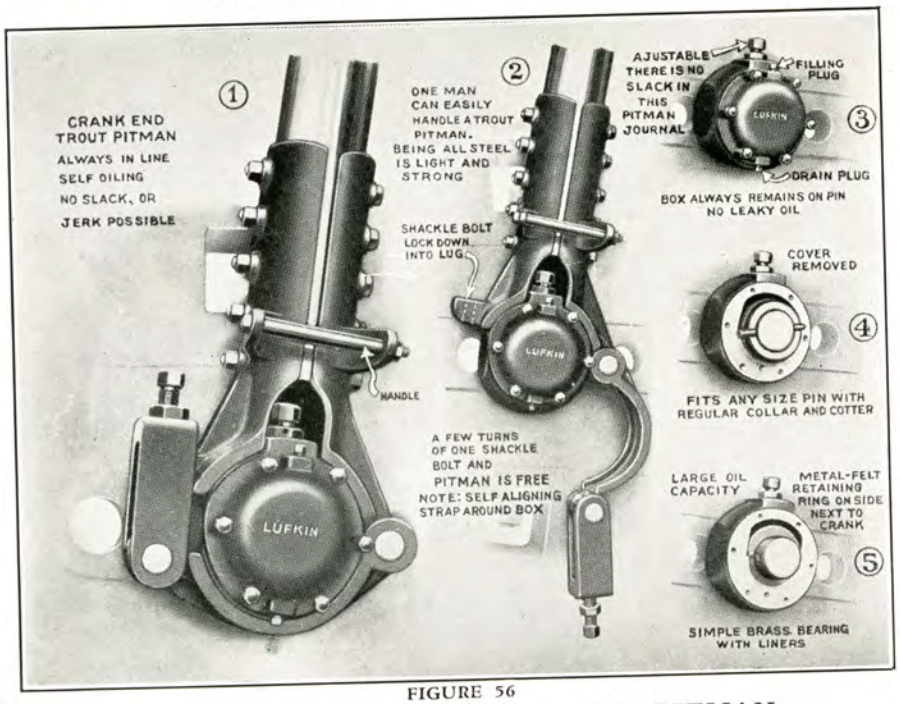


FIGURE 56

LUFKIN OIL-BATH, DUST-PROOF PITMAN

The Lufkin-Trout Universal, self-aligning Pitman met with immediate acceptance by the oil industry. The Trout Pitman is oil-tight and dust-proof. The box remains on the pin as shown in the illustration. It is only necessary to loosen shackle bolts to unstrap Pitman from box to make any necessary adjustments. Made in sizes to fit any A.P.I. Pin.

FIGURE 59
Hinged Horse Head showing Equalizer

The Lufkin Hinged Horse Head type of hanger is designed to tilt back over the beam clearing the beam end when the well is being serviced.

OIL TIGHT—BRONZE BUSHED CENTER BEARING

Patents Pending

FIGURE 60

Series "A" Center Bearings are full Bronzoid bushed, with patent oil seals and are designed to allow beam to headache to about 40° either front or back and as usual with Lufkin center bearings, beams can be swung sideways about 25° from center line. We believe this is a superior bearing in every respect, being dust proof, oil tight with renewable bronzoid bushing. They have ample bearing surface.

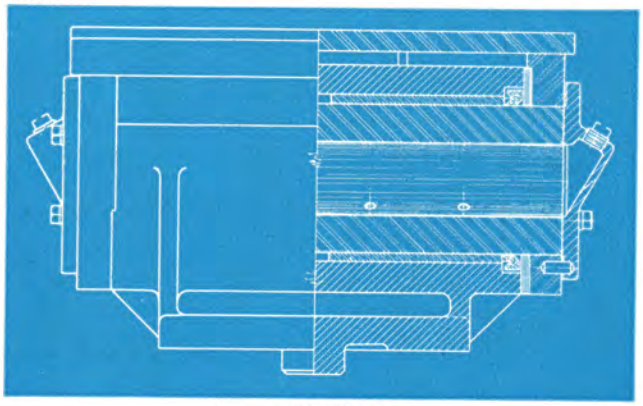


FIGURE 61

Center Iron No.	Size Bearing	Where Used
1-A	6″ x 20″	TC No. 0 and No. 1 TC No. 0-A and No. 1-A SC No. 1 Long Stroke
2-A	6″ x 17″	TC No. 2 and No. 2-A SC No. 2
3-A	6″ x 14″	TC No. 3 SC No. 3
4-A	5″ x 10½″	TC No. 4 TC No. 5 SC No. 4

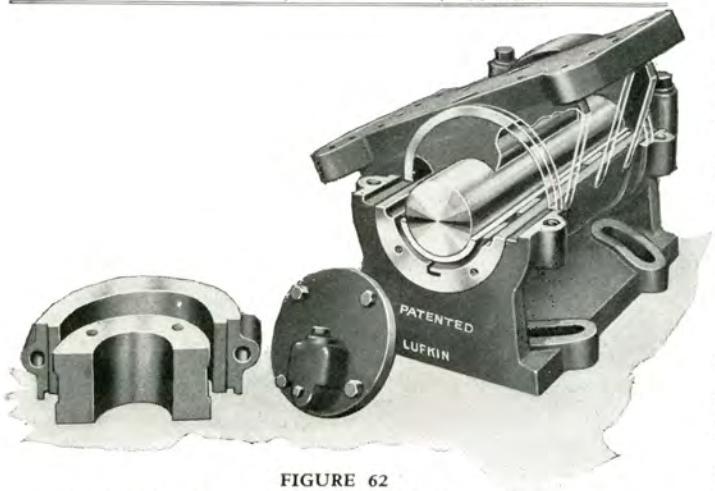


FIGURE 62

Lufkin Dust-Proof, No. 1 Oil Bath Center Iron

BABBITTED OIL BATH CENTER BEARINGS, SERIES B & C

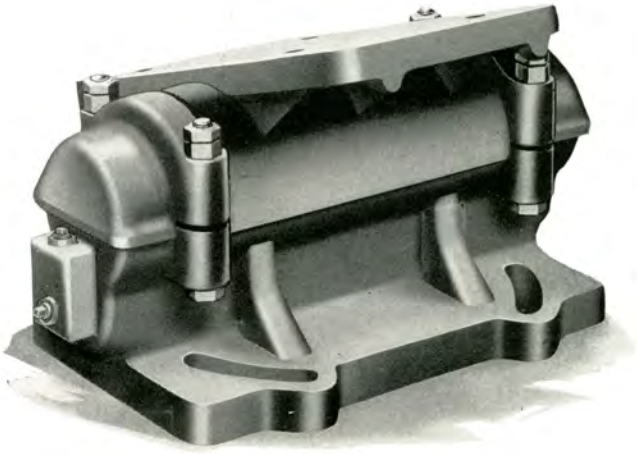


FIGURE 63

Series "B and C" Bearings listed below show our babbitted center bearings which are oil bath, but only reasonably dust proof, as blue print shows. This bearing is lined with a special high grade tin base metal to withstand the severe service of heavy loads and has ample oil capacity.

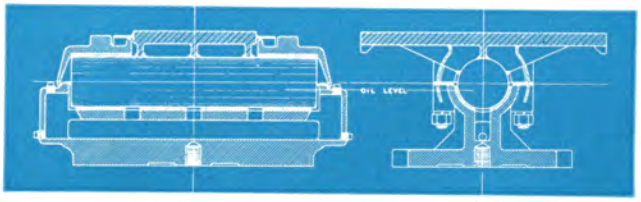


FIGURE 64

Center Iron No.	Size Bearing	Where Used
1-B	5″ x 24″	TC No. 1 and No. 1-A SC No. 1
2-B	5″ x 18″	TC No. 2 and No. 2-A SC No. 2
2-C	5″ x 24″	TC No. 2 and No. 2-A SC No. 2
3-B	4″ x 18″	TC No. 3 TC No. 4 SC No. 3 TC No. 5
3-C	5″ x 18″	TC No. 3

Our original No. 1 oil bath center bearing is still made, especially for customers to maintain standardization. This bearing has a renewable bronze bushing 5″ x 24″ and is oil tight and dust proof. Its construction insures a strong rugged center bearing which is very popular with the trade.

LUFKIN "EASY CHANGE" CRANK PIN

FIGURE 65

As every operator knows the crank pin is of vital importance in a pumping rig, usually giving the most trouble, and frequently the cause of accidents.

Due to better steels and heat treatment they now seldom break but still give trouble unless they are securely fastened in the pin hole.

Ten years experience with our "easy change" pin has given general satisfaction regardless of which direction the unit is operated.

A key has been provided to prevent pin from turning, also a castellated nut with a large cotter pin, that makes them DOUBLY SAFE. If pin and bushing is put in as directed and **nut tightened up** they **cannot come loose.**

Before adopting this pin years ago, many tests were made on straight and taper pins (without bushing) and we found that by the use of the wedge bushing the pin could be tightened where it was equal to a 25-ton press fit and yet it could be released with a few blows of a hammer. The straight fit pin can only be put in with a sledge and not over a one ton press fit, which is about all one man can do, and is the main reason they wallow out. Taper holes in crank were found impractical for the same reason and the fact that in case of a "wallowed out hole" it is impractical to rebore the cranks in the field.

With the "Easy Change" Pin, any damage to the hole usually comes in the bushing which is easily replaced.

Crank pin wrench, also counterbalance weight wrench are furnished with each Unit.

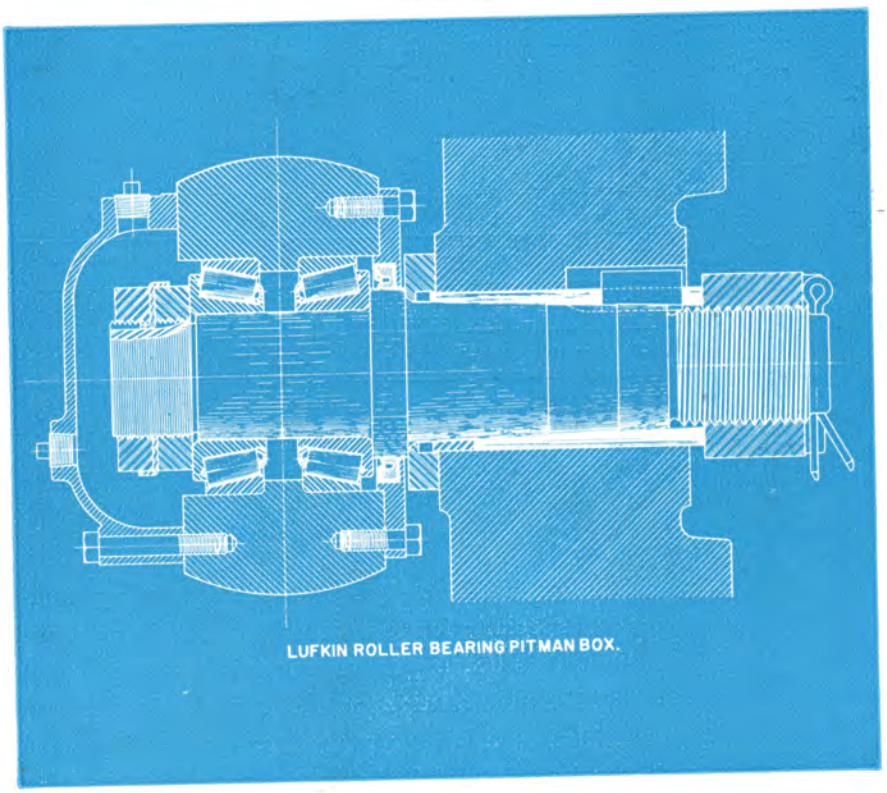


FIGURE 66

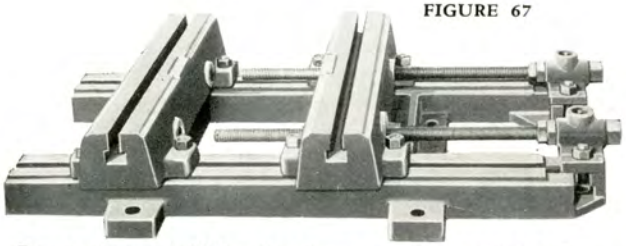
ROLLER BEARING CRANK PINS

Lufkin Roller Bearing Crank Pins, the design of which is illustrated in blue print to the left, may be furnished for any size unit upon request and at a slight increase in cost over regular bronze bearing.

LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS

UNIVERSAL RAILS — FOR MOTORS OR GAS ENGINES

FIGURE 67



Dimensions of 32" rails shown on blue print below

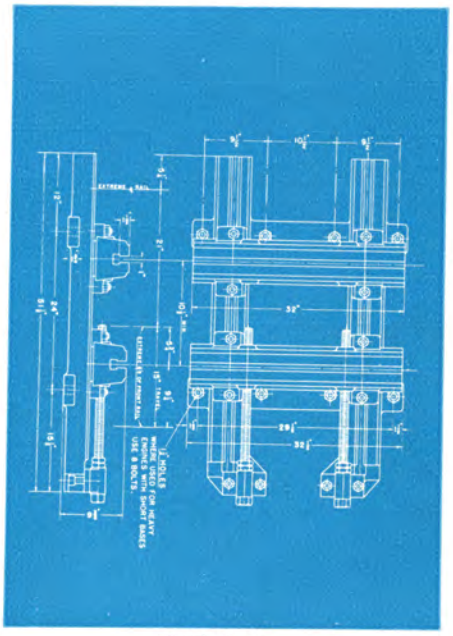
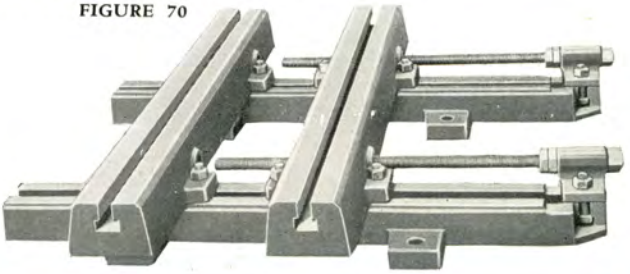


FIGURE 68

FIGURE 70



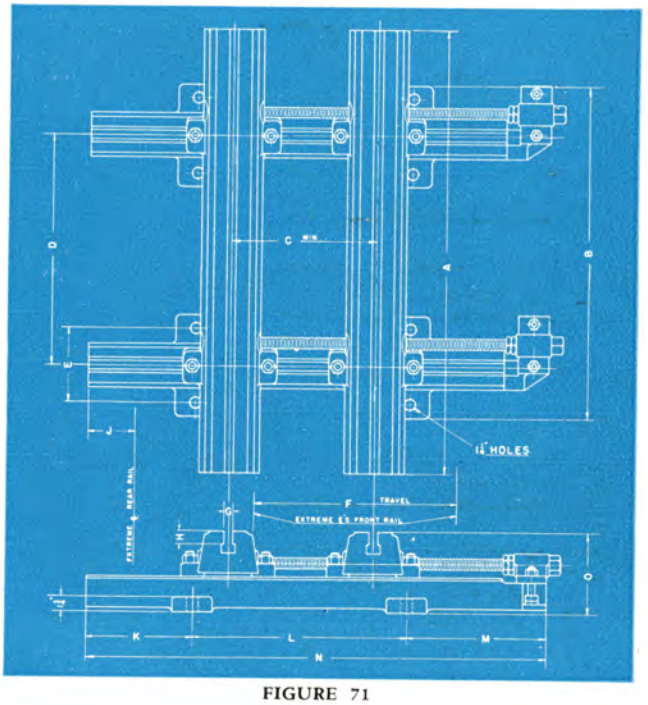
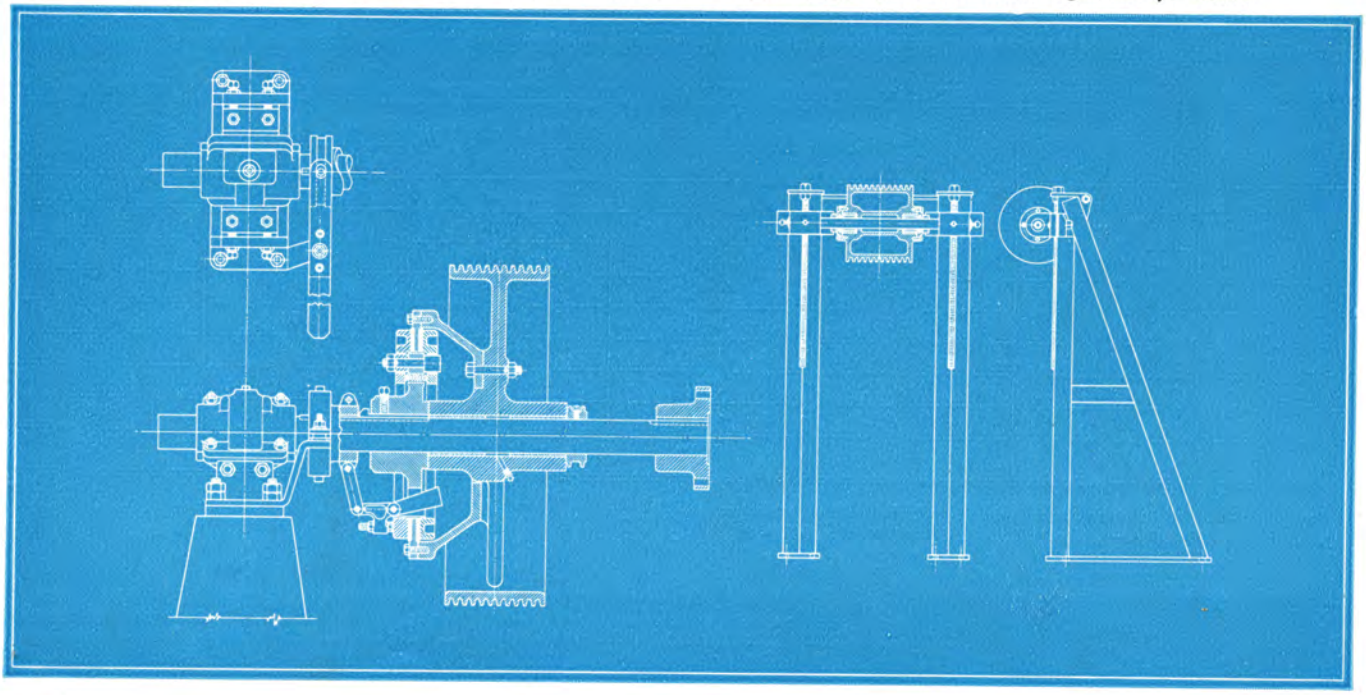


FIGURE 71

UNIVERSAL RAILS are thoroughly made. Base skids are planed and grooved—top skids planed to fit slots in base—top of skids and grooves are planed. Each set has double adjusting screws, all of substantial design.

UNIVERSAL GAS ENGINE RAILS													
DESCRIPTION	A	B	C	D	E	F	G	H	J	K	L	M	N	O
50" ENG. RAILS	50"	37½"	10½"	26"	8½"	23½"	1"	1½"	5¼"	12"	24"	15½"	51½"	9⅜"
69" ENG. RAILS	69"	47½"	10½"	36"	8½"	38½"	1"	1½"	5¼"	12"	36"	15½"	63½"	9⅜"

FIGURE 69, Below:—*CLUTCH shaft for single cylinder gas engine drive and usual tightener for same*



POLISH ROD CAPACITIES OF LUFKIN WALKING BEAMS FOR SINGLE AND TWIN CRANKS

Walking Beam Number	Section	Working Centers	RATING, LBS.		Where Used
			A.P.I.	A.I.S.C.	
1328-C	24″ x 14″ 130 lb	28′	20,375	30,565	TC-OA SC-1 and 2
1325-C	24″ x 14″ 130 lb	25′ A.P.I. Std.	23,900	35,860	TC-OA and 1A SC-1
1320-CH	24″ x 14″ 130 lb	20′	32,040	48,055	TC-O and 1
1025-C	24″ x 12″ 100 lb	25′	16,855	25,285	SC-2
1020-C	24″ x 12″ 100 lb	20′	23,045	34,570	TC-2A
1020-CH	24″ x 12″ 100 lb	20′	23,045	34,570	TC-2
8220-C	21″ x 9″ 82 lb	20′	13,770	20,655	SC-3
6414-CH	18″ x 8¾″ 64 lb	14′	15,680	23,520	SC-4
6412-CH	18″ x 8¾″ 64 lb	12′—3¼″	16,270	24,400	TC-3
5811-CH	16″ x 8½″ 58 lb	11′—3¼″	15,470	23,200	TC-4
4010-CH	12″ x 8″ 40 lb	10′	10,365	15,550	TC-5

ENGINEERING DATA FOR THE PRACTICAL ENGINEER

WELL LOADS

Weights as listed are based on a specific gravity of 1. To correct for individual condition multiply the figures in the following columns by the specific gravity of the fluid produced.

Size Plunger	Size Rods	Weight To Be Lifted Per 1000 Feet				
		½ Fluid	All Fluid	Rods	½Fluid Plus Rods*	All Fluid Plus Rods
1 25/32″	⅝″	125	250	1150	1275	1400
1¾″	⅝″	442	884	1150	1592	2034
1¾″	¾″	429	858	1690	2119	2548
2¼″	⅝″	793	1586	1150	1943	2736
2¼″	¾″	780	1560	1690	2470	3250
2¼″	⅞″	730	1460	2270	3000	3730
2¾″	¾″	1195	2390	1690	2885	4080
2¾″	⅞″	1170	2340	2270	3440	5610
3¾″	⅞″	2290	4580	2270	4560	6850

* Weight of one-half the fluid plus the rods equals the required counterbalance.
Weight of rods per 1000 Feet—⅝″ = 1150 lbs.; ¾″ = 1690 bs.; ⅞″ = 2270 lbs.

LUFKIN CENTRAL PUMPING POWERS

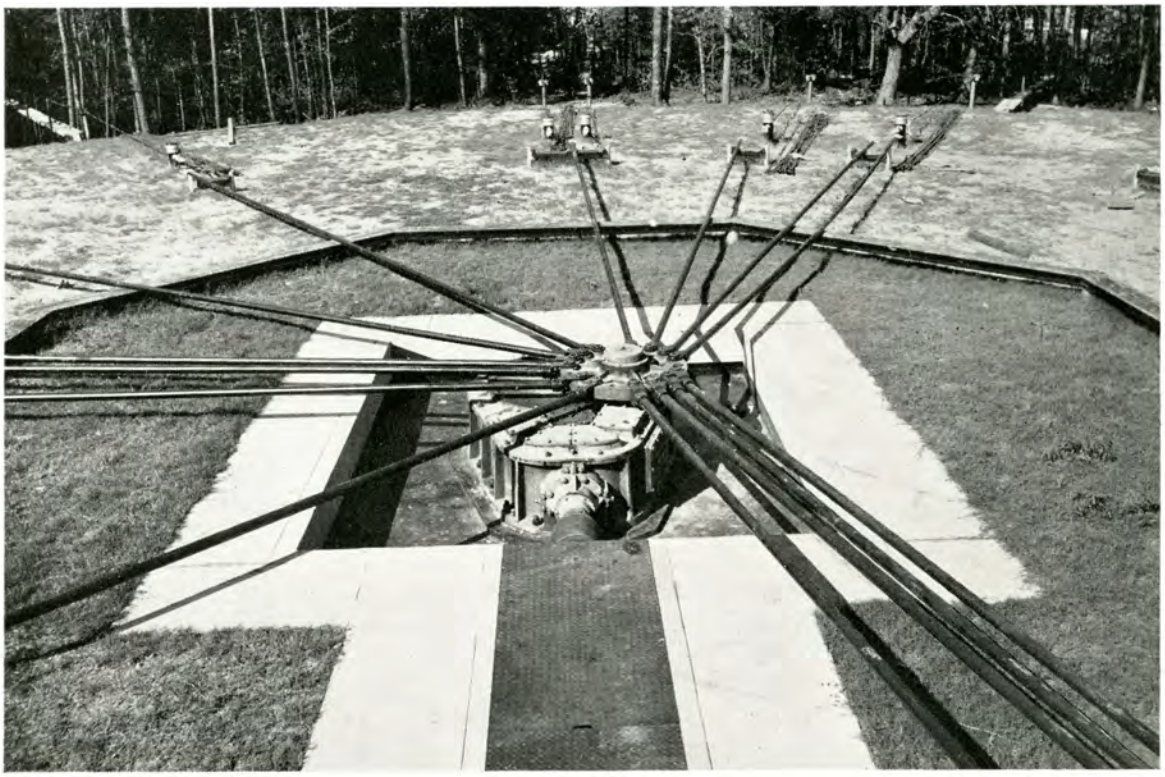


FIGURE 72

Lufkin Herringbone Geared Central Power installation in East Texas pulling 14 wells

GENERAL CHARACTERISTICS LUFKIN HERRINGBONE CENTRAL PUMPING POWERS

In general design this Power has eleven years of successful operation and experience behind it. We adopted the design of the stationary center trunnion of our worm gears and LUFKIN POWERS are now carrying pumping loads that were hardly believed possible.

While pumping units are subject to high peaks and overloads, in **Central Powers** this is accentuated almost in proportion to the number of wells, and this, with the "unbalanced load" so often disregarded by operators as impractical to overcome, challenges the manufacturer of Central Powers to meet these unusual conditions. Through experience LUFKIN designs have been developed and are successfully meeting these generally unlooked-for variable loads, inherent in their operation.

Experience teaches us also that the "power required" on most installations is underestimated, especially under proration; then too often, more wells are hooked on not only overloading the power itself, but using the motive power to its limit.

Economic conditions are largely responsible for this policy, to which there is a limit of course, but we believe LUFKIN POWERS have the "background and the backbone" to withstand the greatest loads of any Power offered for this service.

We believe any engineer who investigates these Powers will conclude that, being of the Herringbone type there is no end thrust, such as is experienced with single helical gears; that the gears, bearings, and general rugged design of the power itself is much stronger than other designs.

While every possible adjustment for gears and bearings is provided to take up wear, experience proves factory adjustments are seldom altered; once set, they require no further attention. All parts are immediately accessible for inspection and cleaning when cover is removed.

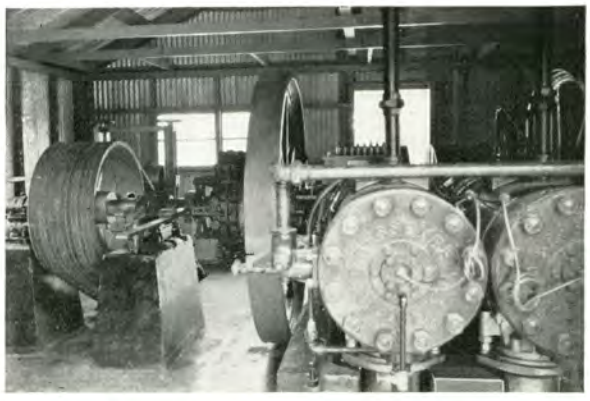


FIGURE 73

Typical Gas Engine Drive for Lufkin Herringbone Central Power Installation

LUFKIN HERRINGBONE CENTRAL PUMPING POWERS

Patented

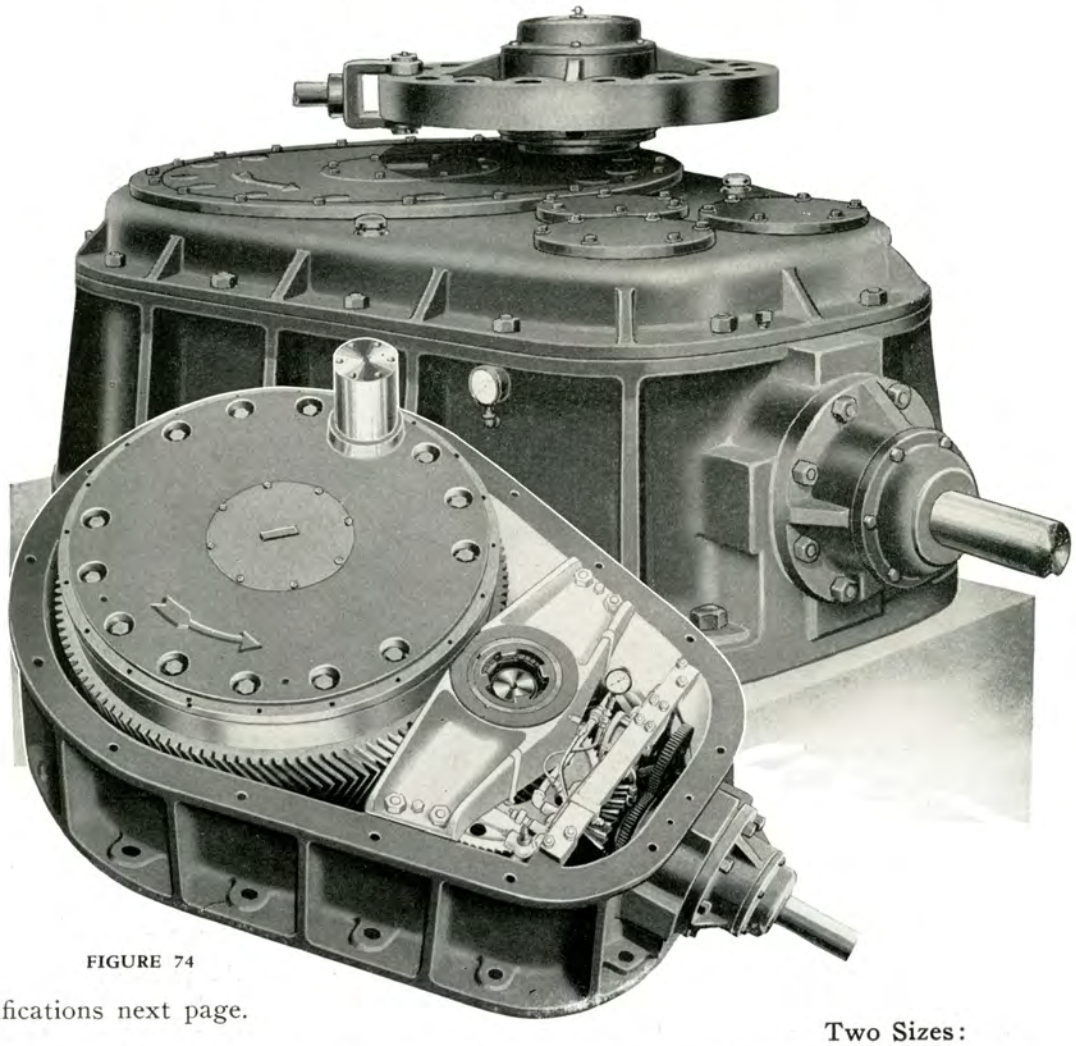


FIGURE 74

See specifications next page.

Two Sizes:

No. 100—121.7 H. P. at 20 R.P.M.
No. 150—182.7 H. P. at 20 R.P.M.

NOTE: Gears and Bearings self-contained in lower gear case.

No strain on cover which is easily removable for inspection.

Cross Section, Improved Power

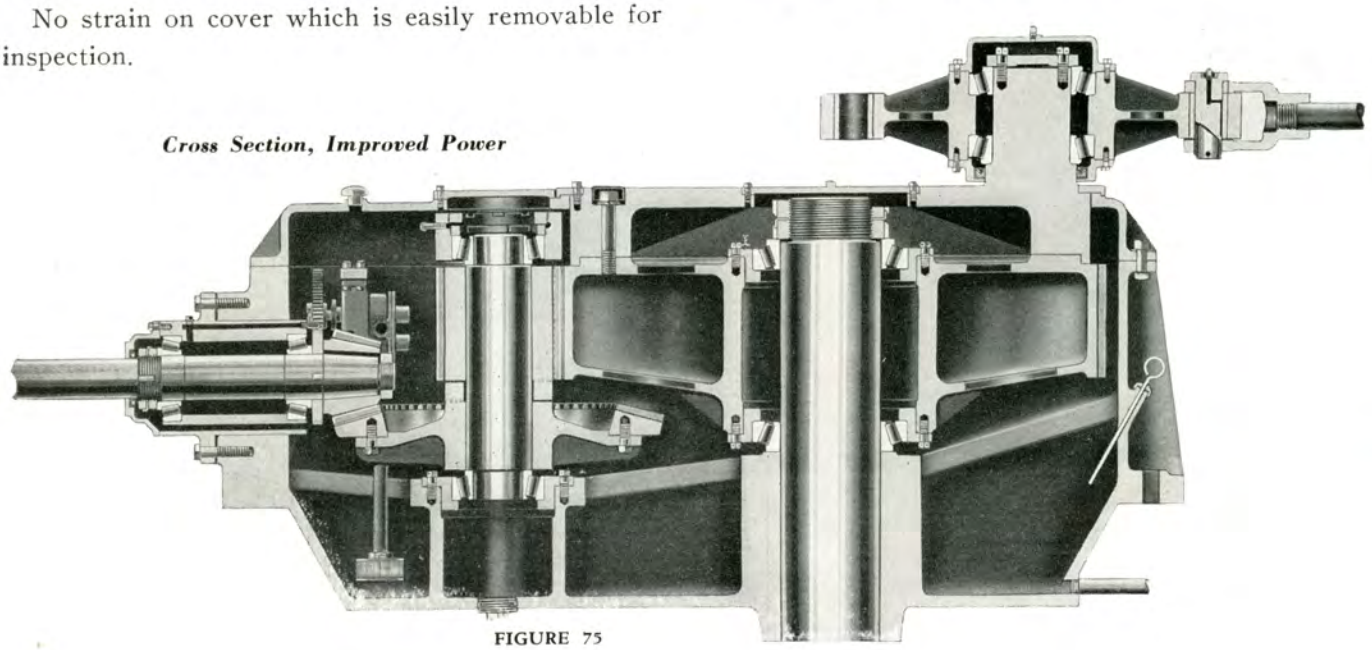
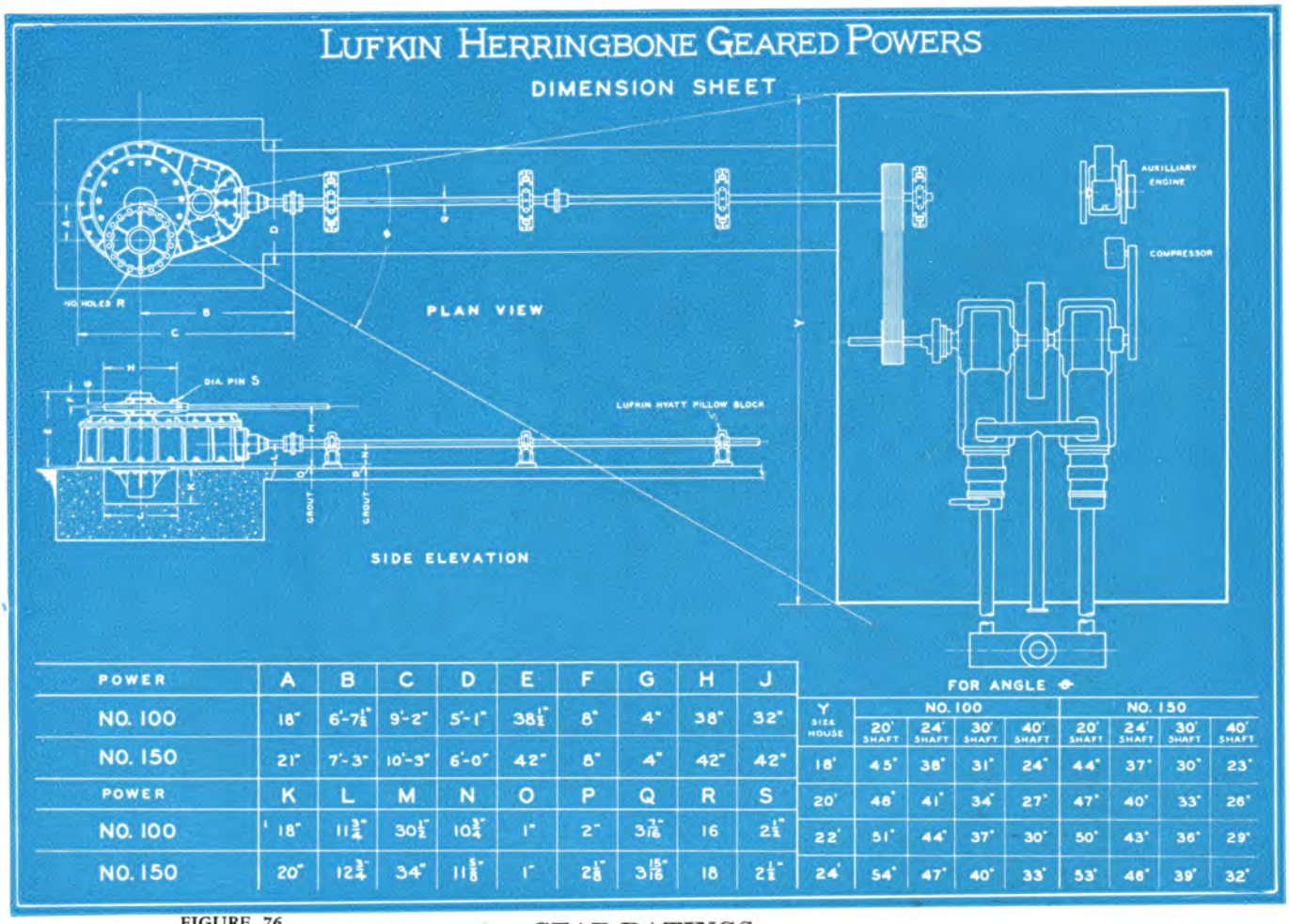


FIGURE 75

LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS



POWER	A	B	C	D	E	F	G	H	J
NO. 100	18"	6'-7½"	9'-2"	5'-1"	38½"	8"	4"	38"	32"
NO. 150	21"	7'-3"	10'-3"	6'-0"	42"	8"	4"	42"	42"
POWER	K	L	M	N	O	P	Q	R	S
NO. 100	18"	11¾"	30½"	10¾"	1"	2"	3 7/16"	16	2½"
NO. 150	20"	12¾"	34"	11⅝"	1"	2⅛"	3 15/16"	18	2½"

FOR ANGLE ⌖

Y SIZE HOUSE	NO. 100				NO. 150			
	20' SHAFT	24' SHAFT	30' SHAFT	40' SHAFT	20' SHAFT	24' SHAFT	30' SHAFT	40' SHAFT
18'	45°	36°	31°	24°	44°	37°	30°	23°
20'	48°	41°	34°	27°	47°	40°	33°	26°
22'	51°	44°	37°	30°	50°	43°	36°	29°
24'	54°	47°	40°	33°	53°	46°	39°	32°

FIGURE 76

GEAR RATINGS

Lufkin Herringbone Central Powers

Power No.	A. P. I. Rating	Type Gears	Ratio	Drive Sheave Bore	Stroke	Dia. and Face Main Gear	Base To and Pull Rods	Weight
100	121.7 H. P. 710,000 PT.	Herringbone & Spiral Bevel	19.1	3 7/16"	36"	50"x10"	34"	13,500
150	182.7 H. P. 1,138,000 PT.	Herringbone & Spiral Bevel	17.5	3 11/16"	42"	57"x12"	36½"	18,000

HERRINGBONE GEAR ELIMINATES THRUST LOAD

EASY ADJUSTABILITY

The Herringbone gear equalizes all thrust loads insuring longer bearing life. A Lufkin patented feature permits easy adjustability, in the field, of both Herringbone and Gleason Helical bevel gears.

ANTI-FRICTION BEARINGS THROUGHOUT

All bearings are Timken Roller Bearings of generous size with high load carrying capacities.

GENERAL SPECIFICATIONS

Herringbone Units

1. Lufkin-Sykes Herringbone Main Gears.
2. Gleason Helical Bevel Gears.
3. Nickel-Alloy Massive Steel Trunnion.
4. Low Center of Gravity—Compact.
5. Pressure Pump Lubrication—Positive.
6. Large Oil Reservoir.
7. Timken equipped throughout.
8. Crank Pin cast integral with crank.
9. No housing expense except for prime mover.
10. Rugged design for long, lasting service.

DISTINCT FEATURES

A distinct feature characteristic of both the Lufkin Worm Gear and Herringbone Gear Powers is the design of the **center trunnion.** This massive center trunnion is an exclusive patented Lufkin feature found in no other type of geared central power. All the shocks and strains due to unbalanced well conditions are transmitted through this center trunnion, directly to the solid concrete foundation. The Lufkin center trunnion is the result of eleven years operating experience with various designs of geared central powers.

Most engineers are familiar with these problems and can arrive at a close approximation of horsepower required for a number of wells, however, if you wish our help or suggestion in determining size of power, engine or motor, please mail us the following information:

Make a diagram of the wells to be pumped, preferably to scale, locating your idea of where Power should set, marking the length of pull rods to each well. Then letter or number each well giving depth pumped; size of tubing; size of rods; gravity of oil; production, if known; water, if any; any general information as to ground conditions, etc.; or better, have our engineer call and make up an estimate.

Lufkin Powers may be adapted to any type of prime mover.

LUFKIN WORM GEAR CENTRAL POWERS

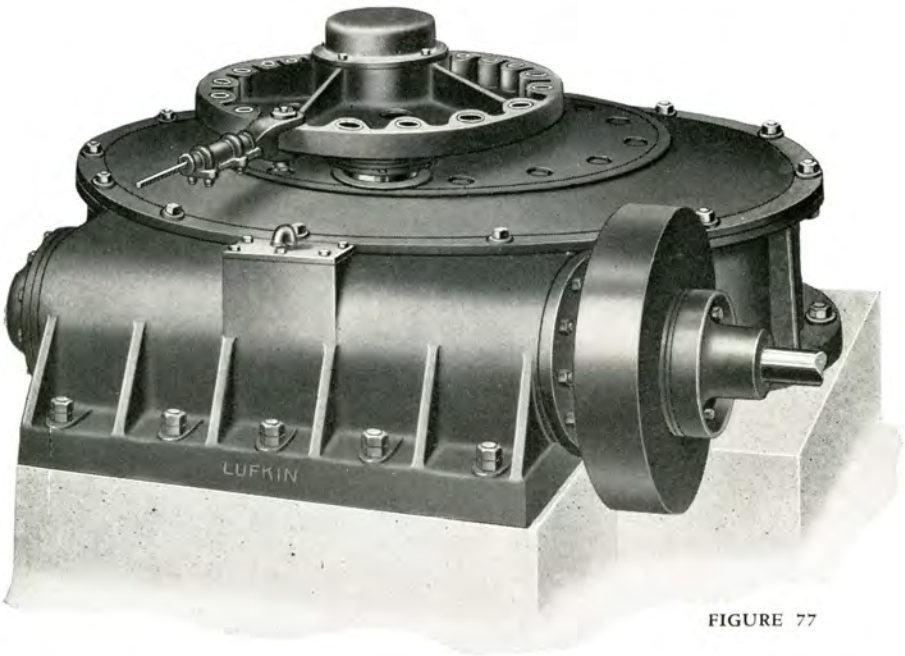


FIGURE 77

The Lufkin Giant Worm Gear Central Power—Two sizes, 50 and 125 H.P.

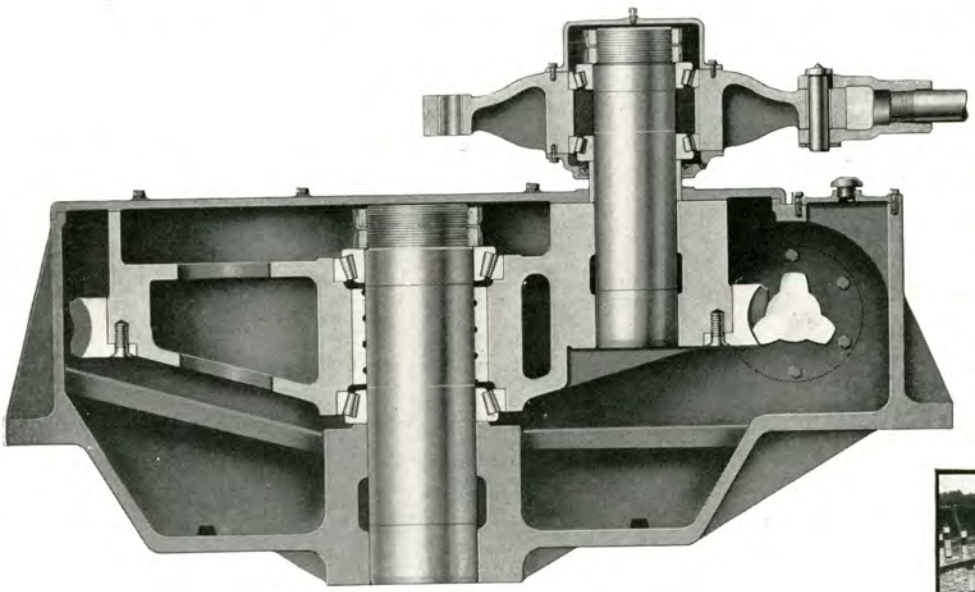


FIGURE 78
Cross-Section Lufkin Giant Power

Mechanical Characteristics

The first Lufkin Geared Powers were of the Worm Gear type. The earliest installations are today operating as efficiently as when first installed—an operating characteristic of Worm Gears, namely, sustained efficiency throughout the life of the gears.

Lufkin Worm Gear and Herringbone Gear Powers are comparable in many operating characteristics. Lufkin Worm Gear Powers, with fewer wearing parts, other mechanical features may be summed up in the following:

1. Center Trunnion of Nickel Alloy Steel.
2. Center and Crank Pin Bearings: Timken.
3. Worm Bearings: Timken thrust, Hyatt radial.
4. Gear is of alloy bronze.
5. Worm of alloy steel, heat treated.

Lufkin worm gear powers are of heavy rugged construction designed for life-time service.

Typical Lufkin Central Power Installation

GEAR RATINGS

Lufkin Worm Gear Powers

Number	H.P. @ 20 S.P.M.	Type Gears	Ratio	Drive Sheave Bore	Stroke	Dia. and Face Main Gear	Base To and Pull Rods
Standard	50	Worm	29 3/5	3 1/16"	24"	51"x4 1/2"	24"
Giant	125	Worm	29 3/5	3 11/16"	30"	71"x6"	34 5/8"

TRANSMISSION—CENTRAL POWER DRIVES

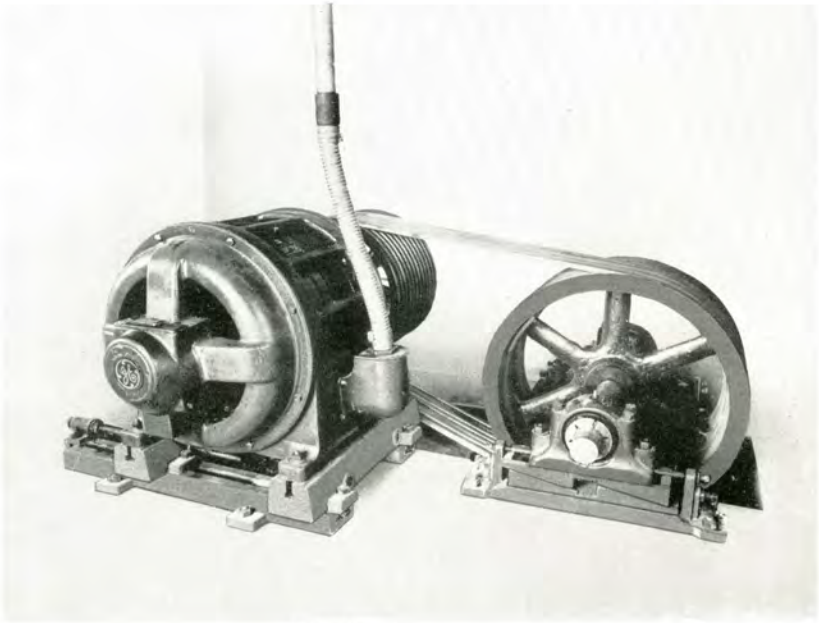


FIGURE 79

Electric Motor Central Power Drive—Motor is mounted on Lufkin Universal Motor Rails. Timken journals on Lufkin Adjustable Sole Plates.

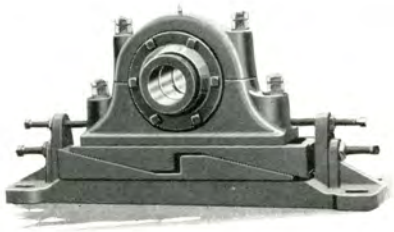


FIGURE 80

Lufkin-Hyatt Self-Aligning Bearings with Adjustable Sole Plates.

FIGURE 81

Type "C", "B" and "S"—Dodge-Timken non-expansion type, self-aligning, oil and dust-proof pillow-block.

FIGURE 82

Type S-I-C—Dodge-Timken, expansion type, self-aligning, oil and dust-proof pillow-block.

We also furnish self-aligning ball and socket babbitted journals if desired.

We manufacture and carry in stock, couplings, shaft bearings of both plain and frictionless types, "V" belt sheaves (especially for central power drives), and at all times maintain adequate stocks of "V" belts and turned and ground shafting. We are in position to furnish "V" belt drives for any purpose and solicit your inquiries.

Lufkin "V" belt sheaves will be found heavier than the usual sheaves and well designed for the job.

FIGURE 83

HEAVY DUTY "V" BELT SHEAVES

FIGURE 84

Flexible couplings always in stock.

LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS

LUFKIN ARC-WELDED IMPROVED PUMP JACKS

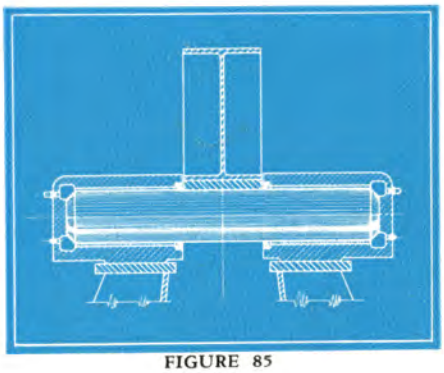


FIGURE 85

Cross-section showing construction of main bearing Lufkin Pump Jack

TWO SIZES

No. 17A .....17,000 lb. Capacity
No. 10A .....10,000 lb. Capacity

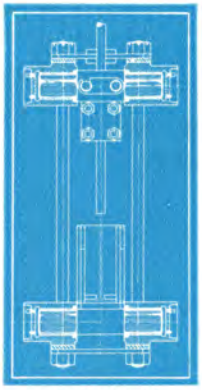


FIGURE 87

Can be furnished with horsehead and wire line hanger if desired.

Path of Polish Rod No. 17-A Jack

FIGURE 86

LUFKIN IMPROVED ARC-WELDED PUMP JACK

After many years experience in the manufacture of Pump Jacks, and a thorough study of their operation from an engineering standpoint, we have now confined our line to two sizes, in which very definite improvements have been made.

Concentration of the best engineering practice in the design of these Jacks has made possible increased strength and rigidity where most needed. Larger bearing surfaces are provided in the main saddle and hanger bearings. Improved oiling facilities found most desirable for heavy duty service are incorporated in their design.

The frame and walking beam are of structural steel arc-welded throughout. An unusual spread is obtained in the side braces both lengthwise and crosswise of the beam. The foundation or bolt layout corresponds with the foundation layout of the Lufkin T.C.-4-11A Unit, which permits of individual well pumping without additional foundation expense should this method of pumping be found desirable at any time.

The saddle bearings are bronzoid with Garlock seals making them oil tight and dust proof; ample bearing surface is provided.

The hanger is of an approved design, easily adjustable for bearing alignment. The bearings are bronzoid bushed with oil seals.

The pull bars are flat steel with an equalizing bar to fasten to rod lines. The pull bar Jack bearing is adjustable and bronzoid bushed.

All bearings are Alemite lubricated.

LUFKIN JACKS will satisfy the most exacting individual looking for practical and substantial equipment with lower maintenance cost.

LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS

LUFKIN ARC-WELDED IMPROVED PUMP JACKS

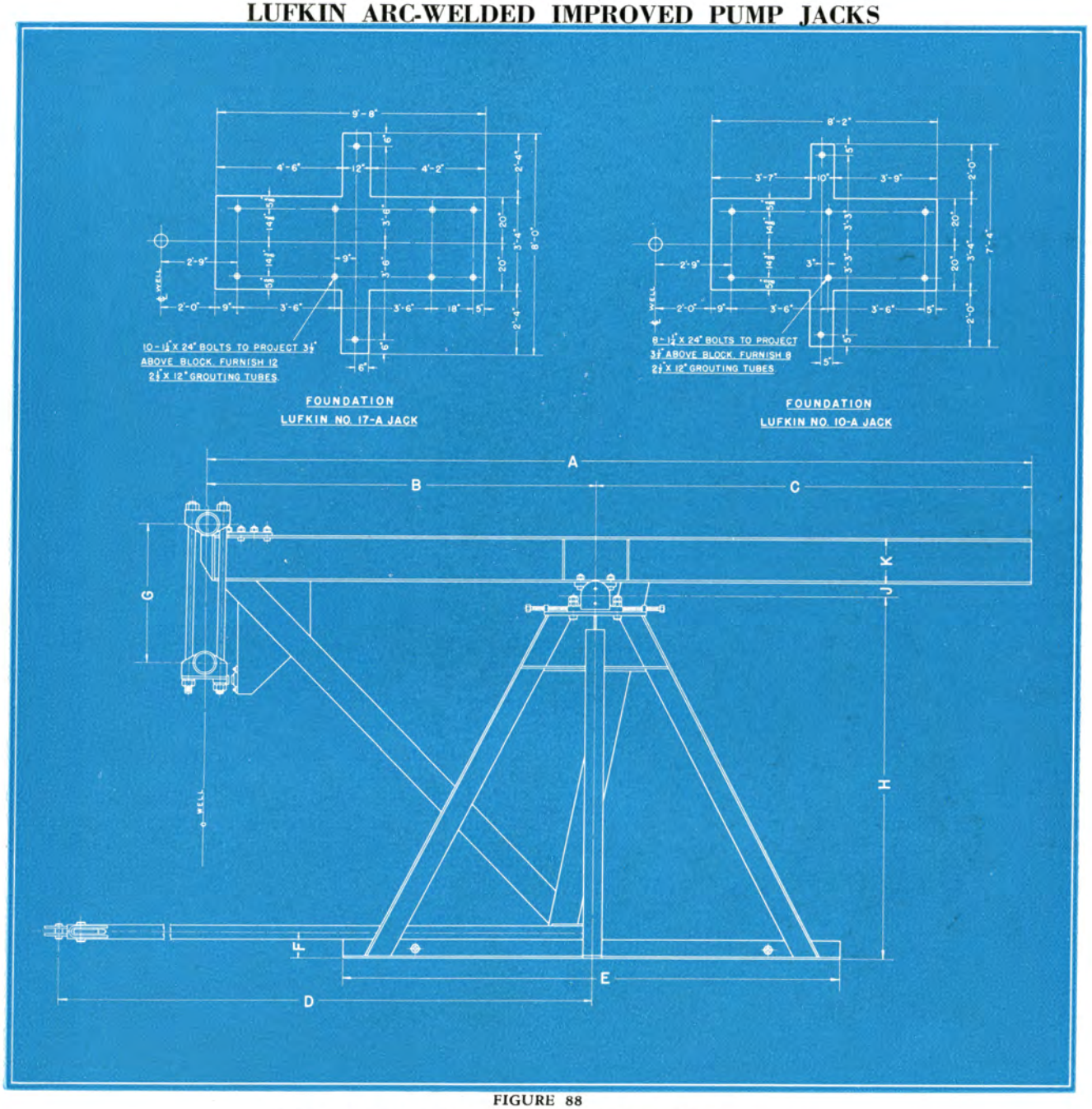


FIGURE 88

DIMENSION SHEET—LUFKIN PUMP JACKS

Jack No.	A	B	C	D	E	F	G	H	J	K
10-A	12′–10″	6′–0″	6′–10″	10′–2½″	7′–11″	8½″	2′–0″	5′–6″	2¼″	8″
17-A	14′– 8″	7′–0″	7′– 8″	12′–3¾″	8′–11″	8½″	2′–6″	6′–6⅜″	2¾″	10″

GENERAL SPECIFICATIONS

	No. 10 A	No. 17 A
Rated Polish Rod Load	10,000 lbs.	17,000 lbs.
Stroke	48″	60″
Maximum Ratio Polish Rod to Pull Rod Stroke	1.71 to 1	1.70 to 1
Minimum Ratio Polish Rod to Pull Rod Stroke	1.24 to 1	1.19 to 1
Depth Walking Beam	8″	10″
Diameter and Length Saddle Bearing	2 1/16″x10½″	3 1/16″x15″
Bearing Surface Saddle Bearing (Bronze)	31.5 Sq. In.	60 Sq. In.
Bearing Surface on Hanger (Bronze)	16 Sq. In.	25 Sq. In.
Base to Bottom of Hanger at Mid-stroke	4′—3⅞″	5′—0½″
Stirrup Bearing Size	2 1/16 x8″	3 1/16 x10″
Number and Size Foundation Bolts	8—1¼x24″	10—1¼x24″

LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS

LUFKIN SURFACE EQUIPMENT

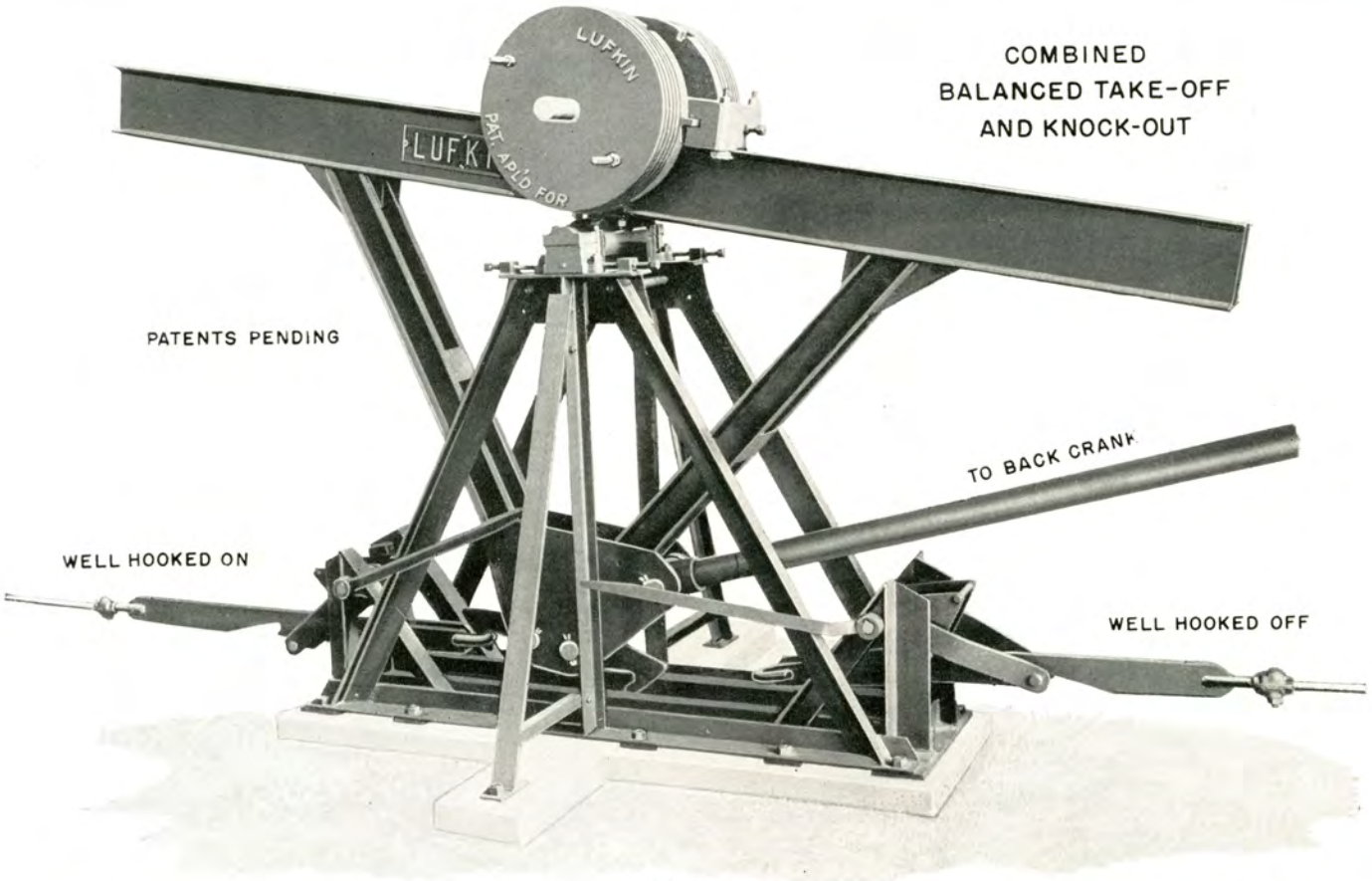


FIGURE 89

The Lufkin combined vertical swing take-off and knock-out is very compact; this feature makes it convenient for the operator and cheap to install. The take-off can be furnished without knock-out attachment if desired. Page 1085 shows how wells are balanced when any one or two wells are down. **Note:** One lever hooks each well on or off.

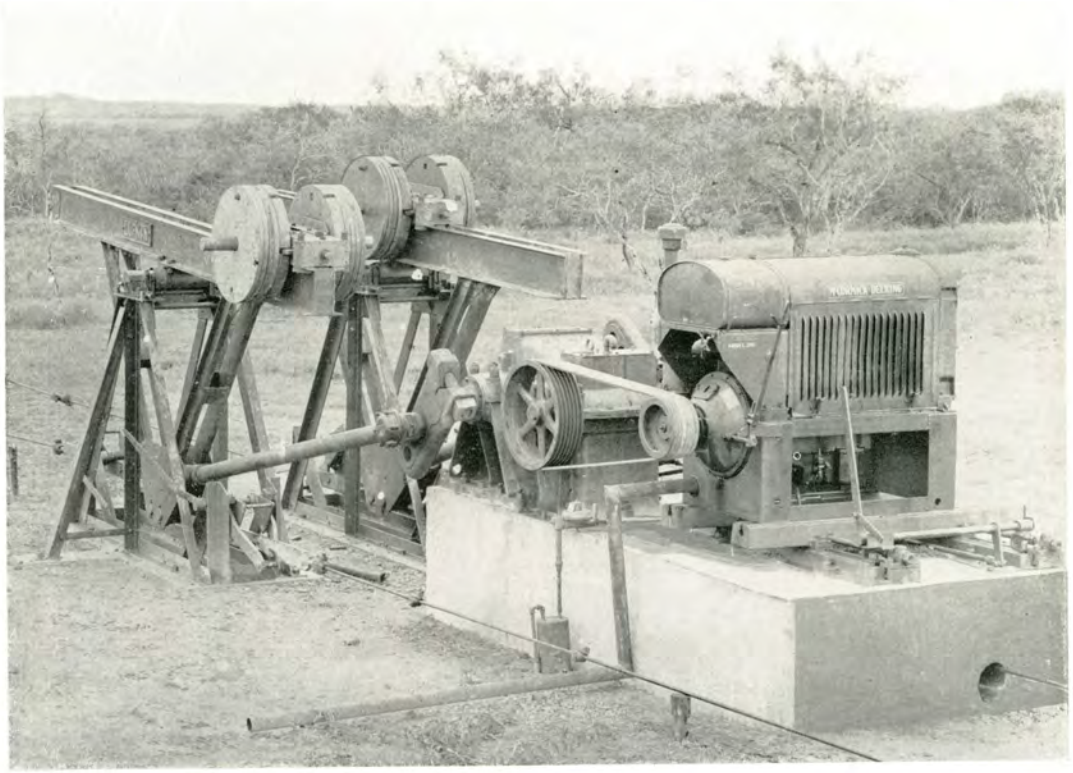


FIGURE 90

Four well hook-up in Southwest Texas

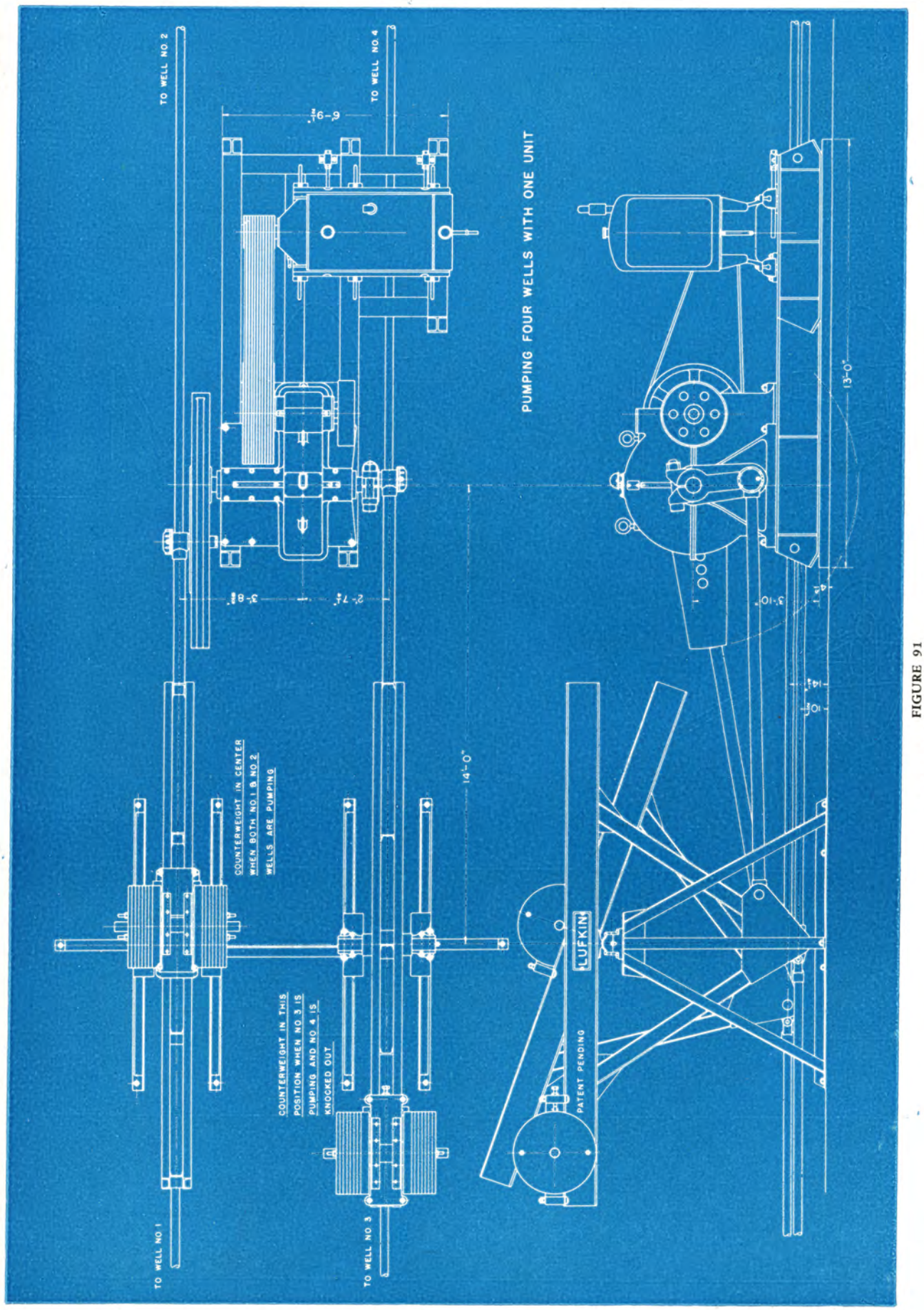


FIGURE 91

BULL-DOGGING FOUR WELLS

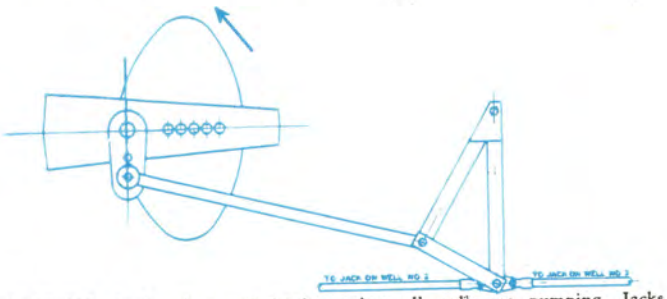
This is a standard single crank Lufkin Herringbone Unit with back side crank set to pull four wells in East Texas during proration. As the unit is standard it may later be transferred to a single well. Note the "take-off" with rolling balance weight, handy to balance on and off wells.

"BACK-SIDE CRANK" PUMPING

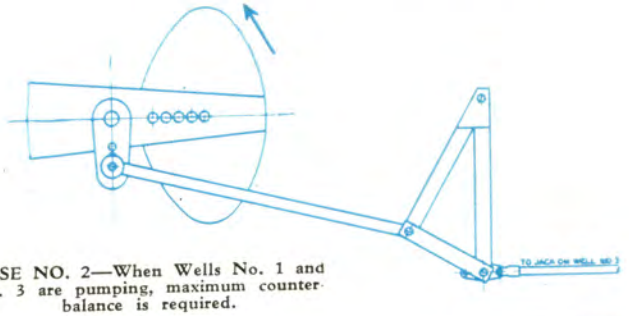
The use of "back-side or back cranks" for pumping two or more wells has become quite prevalent since the advent of the East Texas field. For this type of production Lufkin has provided especially designed equipment which has met with instant favor. Back-crank pumping is more readily adapted to Lufkin Units because of the ease with which the Trout Counterbalance crank weights are adjusted to secure the correct effective counterweight or balance, regardless of the number of wells pumping, as will be noted by referring to the diagram below.

The purpose of these diagrams is to show the ease with which part-time pumpers may be balanced with the Trout Counterbalance Crank. In case of a three well hookup, our regular crank can take care of the main well and the difference in balance of the extra well as in case No. 2 or 3.

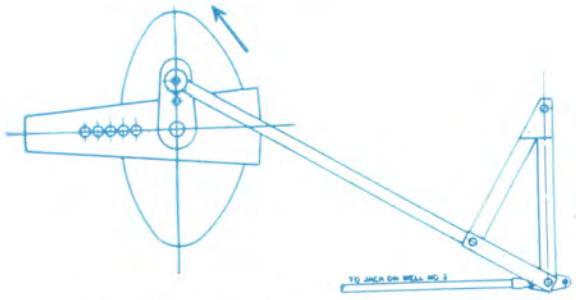
Fig. 94 shows the latest improved take-off for two extra wells. The particular advantage of this type take-off is the ability to compensate for the difference in counterbalance required when either of the back-side wells is not pumping.



CASE NO. 1—In three-well hookup when all wells are pumping, Jacks will balance each other and Trout Crank will largely affect balance on beam well only.



CASE NO. 2—When Wells No. 1 and No. 3 are pumping, maximum counter-balance is required.



CASE NO. 3—When Wells No. 1 and No. 2 are pumping, no counter-balance is required, that is, crank weights are to be centered.

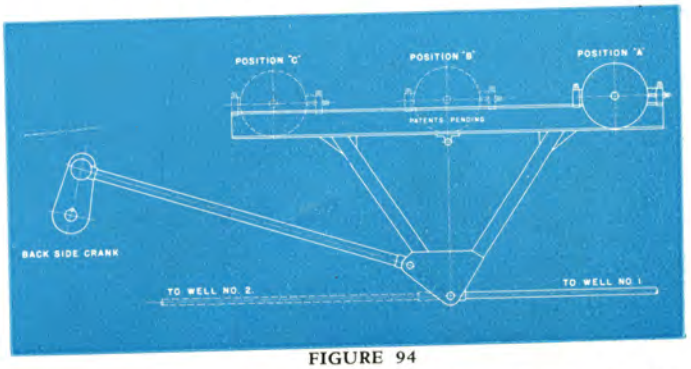


FIGURE 94

Illustrating counterbalance take-off for back-cranking two wells and permitting any one of three wells to operate as desired.

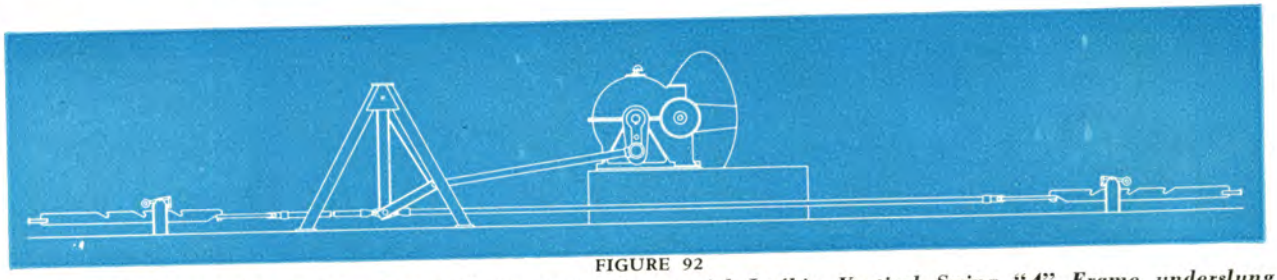


FIGURE 92

Illustrating Typical "Back-Side" Crank installation using the special Lufkin Vertical Swing "A" Frame underslung type Take Off with Lufkin Slide Bar Knock-Out. See also page 1063.

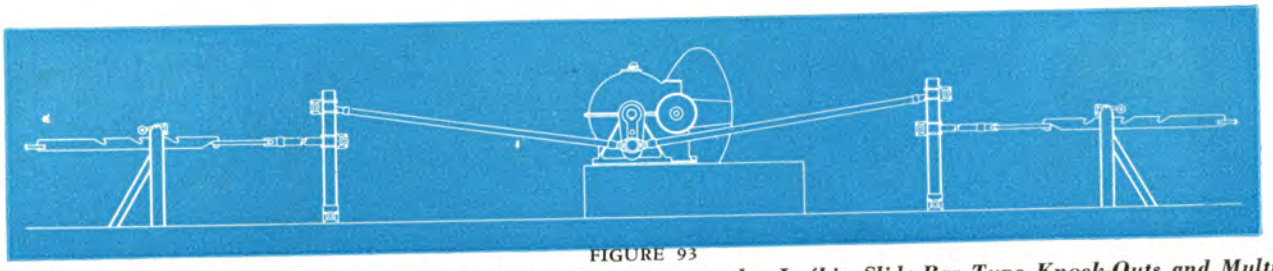


FIGURE 93

Illustrating Typical Lufkin "Back-Side" Crank installation using regular Lufkin Slide-Bar Type Knock-Outs and Multiplier Posts.

FIGURE 95
Vertical Swing "A" Frame Take-Off

This take-off for back cranking is sturdily built and gives a more perfect motion to the rods than the sub; single arm type shown on the right. Both have the underslung feature keeping the rods on the ground. Both types have ample bronzoid bushed bearings with Garlock seals and are provided with Alemite fittings. The pipe connection to crank is not furnished unless specified.

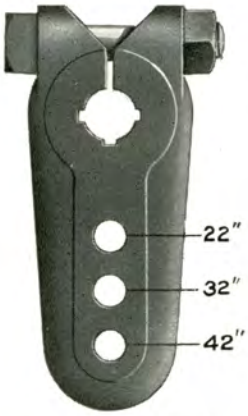


FIGURE 96
LUFKIN BACK-SIDE CRANKS

3 Hole 42" stroke—
Max. Bore 6-7/16"—No. 1910-W
3 Hole 36" stroke—
Max. Bore 5-7/16"—No. 2059-W
3 Hole 30" stroke—
Max. Bore 4-7/16"—No. 2060-W
These cranks use 4" x 6" taper pins.

FIG. 97 — Lufkin tapered shank crank pin with 4" x 6" bearing for use with crank as shown in Fig. 96.

FIGURE 98
Single Take-off Connector.

FIGURE 99
Double Take-off Connector.

FIGURE 101
Vertical Swing Single Arm Take-Off

This take-off is made of the side frames of our No. 10-A Jack; with bronzoid center bearings, with the pendulum swinging between them. The lower bearing is likewise bronzoid bushed and fitted with Garlock seals.

LUFKIN BACK CRANKS

Lufkin back cranks (left) are extra heavy and, while carried in stock to suit our units, we can furnish and bore to suit requirements on short notice. Crank Pins are taper hole type. Take-off connector bearings are bronzoid bushed with oil seals.

LUFKIN KNOCK OUT POST
(Shown Below)

Lufkin knock-off posts are especially handy. Lifting weight lever knocks the well off; lifting double connection under hook (which is the extension from a twin crank unit in this case) automatically puts the well in operation. The same knock-off is used on central power and back-crank jobs. The knockout bar notches are on the upper edge allowing a smooth lower surface to ride on a renewable wood block end grain inserted in cast iron shoe and spreader plate.

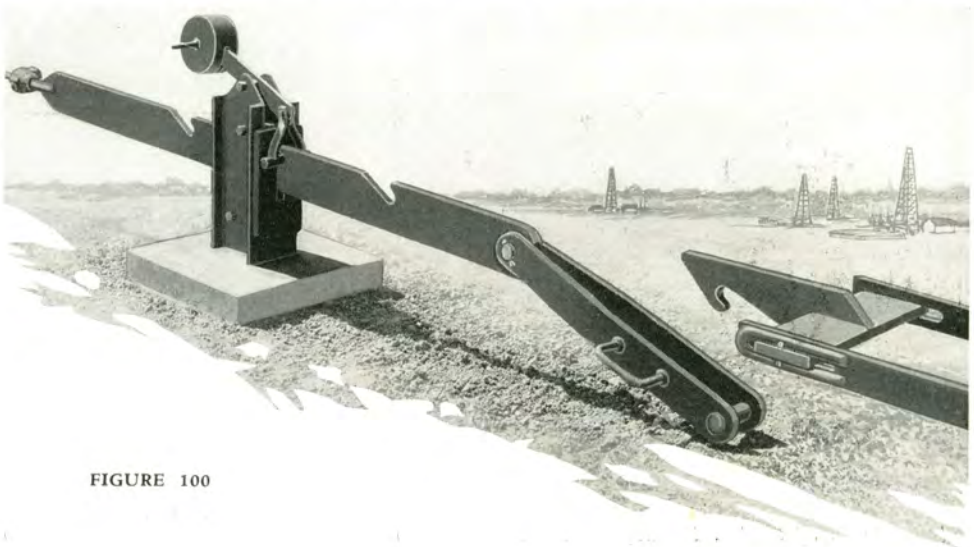


FIGURE 100

LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS

LUFKIN SURFACE EQUIPMENT

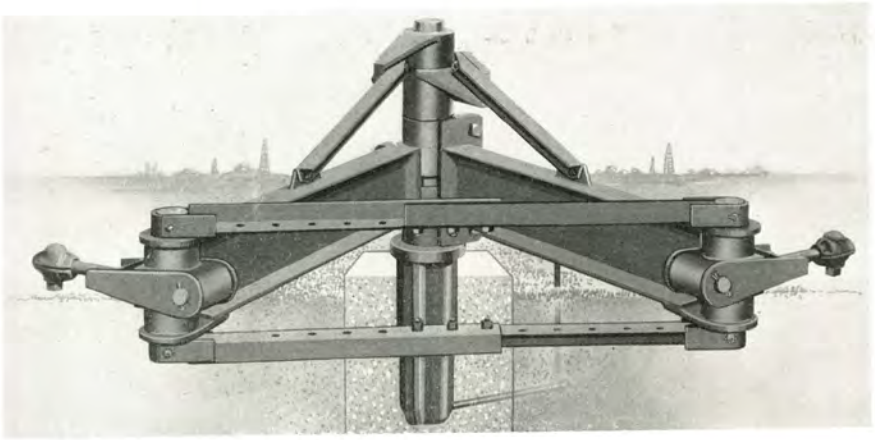


FIGURE 102

LUFKIN IMPROVED STRUCTURAL SWING

The Lufkin improved structural swing is designed with the central shaft mounted in an oil-tight bearing set in concrete. This construction eliminates the use of braces and particularly minimizes wear, due to the operation of the shaft in a continuous oil bath. The rod line bearings are Alemite lubricated and all wearings parts may be inexpensively renewed. Adjustment to desired angle is accomplished as illustrated by sketch below.

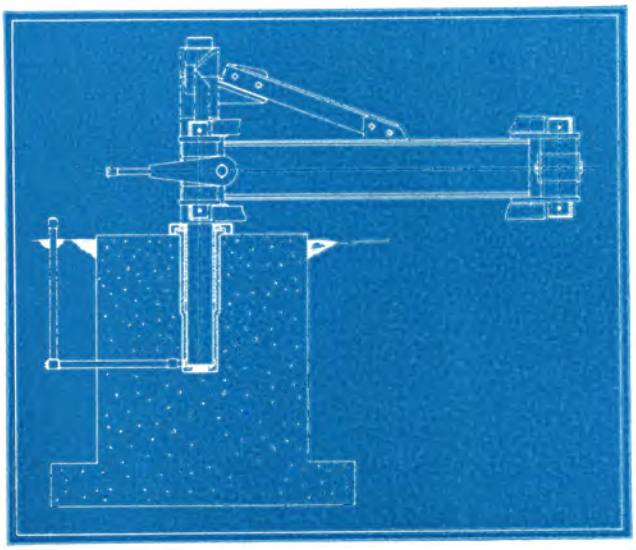
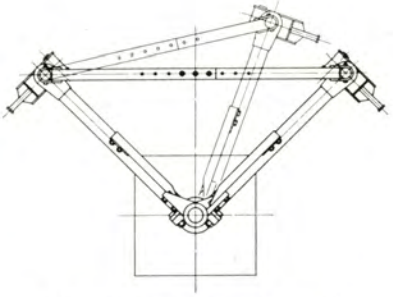
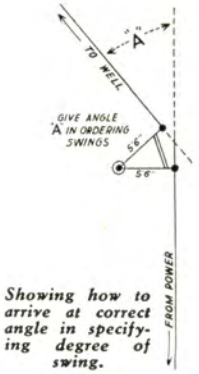


FIGURE 103



Showing how adjustment in angle may be accomplished.



Showing how to arrive at correct angle in specifying degree of swing.

FIGURE 105

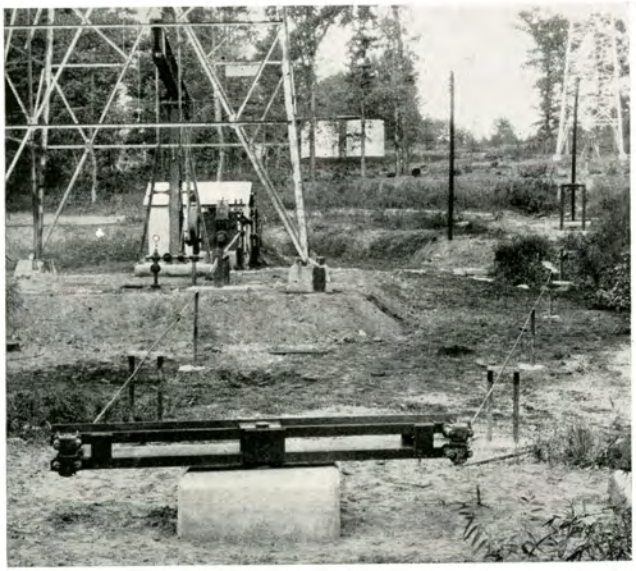


FIGURE 104

Installation of Lufkin 180-degree structural steel swing.

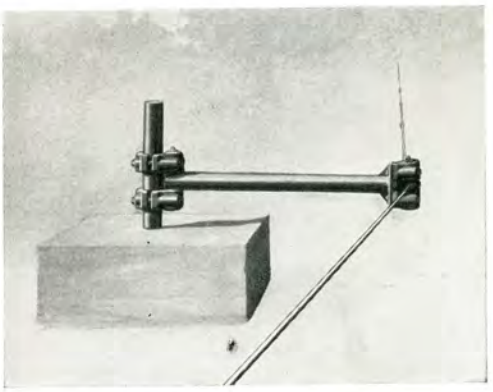


FIGURE 106

Hold-Up used for Swing where small angles are encountered.

LUFKIN ROD LINE EQUIPMENT

FIGURE 107

Lufkin Roller hold-down in structural frame. Note roller hold-up in distance.

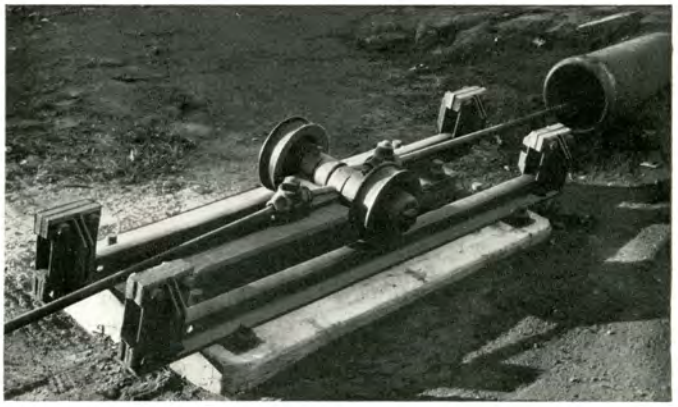
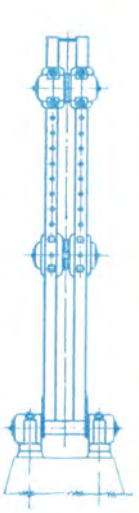


FIGURE 109

Lufkin Roller hold-up. Carriage operates on rail frame.



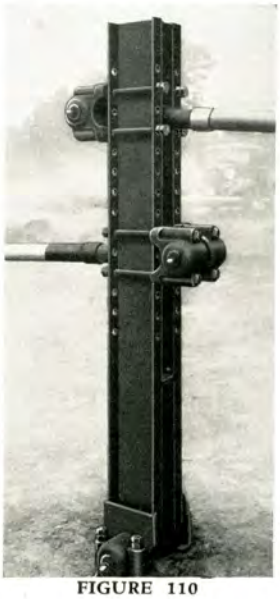


FIGURE 110

LUFKIN STROKE OR MULTIPLIER POST

This type post is commonly used when change in stroke is desired near unit. The bearings on this post, both rod connections and ground bearings are interchangeable with Lufkin hold-up and hold-downs.

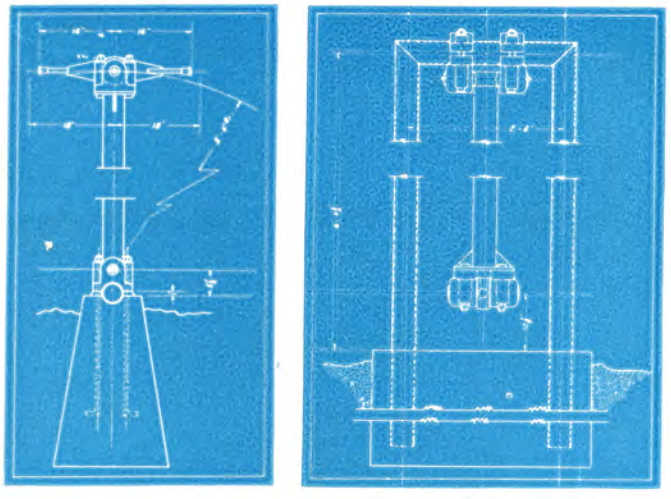


FIGURE 108

Blue print cross section of Lufkin hold-up and hold-down illustrated to the right.

FIGURE 111 FIGURE 112

Lufkin hold-up and hold-down. All bearings interchangeable and Alemite lubricated.

LUFKIN SURFACE EQUIPMENT

All types of rod line equipment are available. Illustrated on this page are some of the more common appliances which are, at all times, carried in stock.

FIGURE 113

FIGURE 114

FIGURE 117—Lufkin 10″ supporting sheave for 2½″ pipe, commonly used with back crank take-off. The shank is made for 2″ pipe and the sheave has a paraffined maple bushing.

FIGURE 118
Plain Safety CC Clamp, also furnished with rod ends countersunk.

FIGURE 119
Lufkin C-Link

LUFKIN PULL ROD CARRIERS

Figure 113 and cross-section 114, illustrate the Lufkin 5″ sheave pull rod carrier with renewable paraffined maple bushing. The shank of this carrier is designed to fit 2″ pipe. The rollers run free and require no lubrication. The bolt is shouldered to prevent clamping.

FIGURE 120
Lufkin knock-out block, heavy construction. Electric welded.

FIGURE 115

Pull Rods and Pull Rod Coupling—any standard size available.

VOLUME TANK AND REGULATOR FOR GAS ENGINES

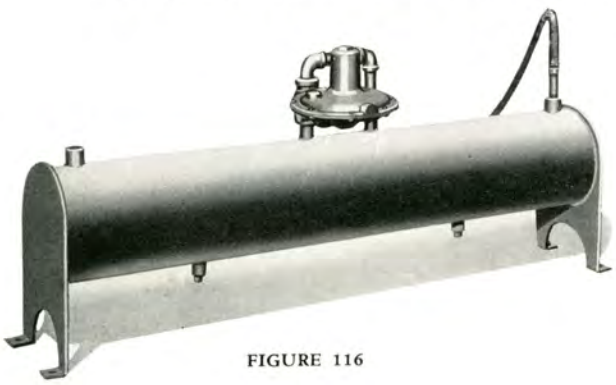


FIGURE 116

Double chamber volume tanks are usually furnished with multi-cylinder engines. They are carried in stock, fitted with Fisher regulators and flexible hose connection to engine as shown. The tank is 8″ diameter and 48″ long with partition in center. They are well made and have ¾″ pipe coupling connections. Center of tank to base is 10″.

LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS

LUFKIN PRODUCTION HOISTS

Lufkin Engineers feel that they have reached the ultimate in operating efficiency in Production Hoists. Operation under the most severe conditions in the field over a period of years, has definitely proven the many advantages of the Lufkin "Loose-drum" roller bearing Hoists. The loose drum feature permits the Hoist to reverse without use of Power when going into the hole. This is found particularly desirable when using multi-cylinder or single cylinder engines. All Lufkin Hoists are equipped with Trout Expansion Brake Drums, which are unaffected by heat; Hyatt drum bearings; asbestos clutch blocks and asbestos brake bands of superior quality. Lufkin Hoists are ruggedly constructed and are fast and powerful in action. Time pulling rods and tubing is greatly reduced. Lufkin Hoists are furnished with either steel or wooden posts.

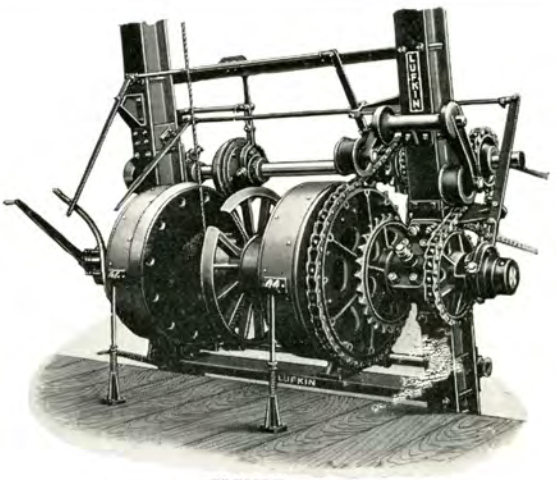


FIGURE 124
No. 52 Lufkin Production Hoist
(Same as No. 522 with line shaft added)

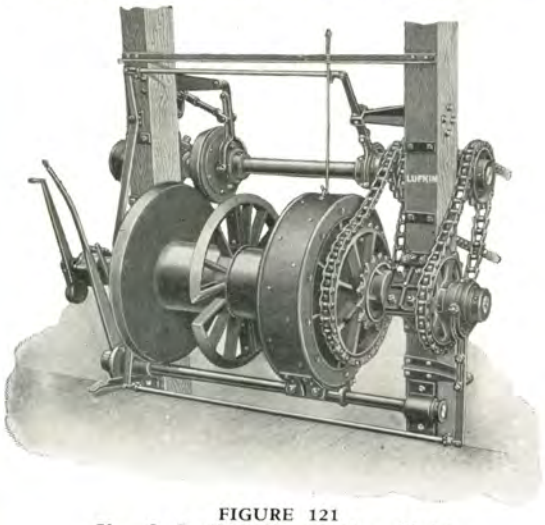


FIGURE 121
No. 2 Lufkin Production Hoist

FIGURE 123
Lufkin Combination Ball Bearing Rod Line Weight and "Sister Hooks"

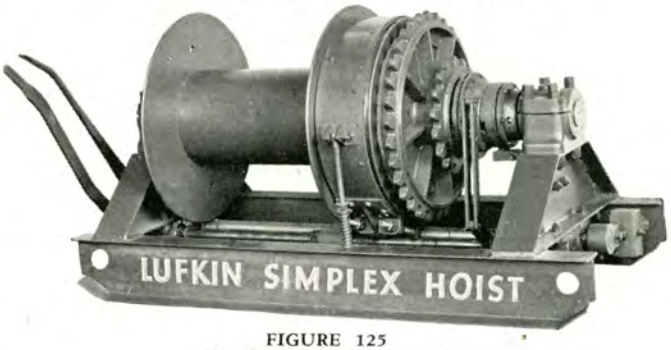


FIGURE 125
Lufkin Simplex Hoist

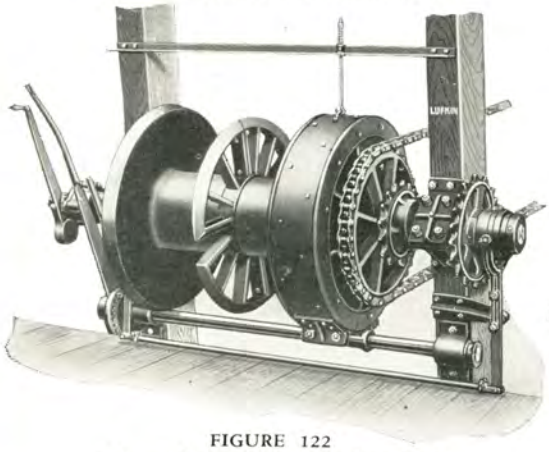


FIGURE 122
No. 6 Lufkin Production Hoist
(Same as No. 2 without line shaft)

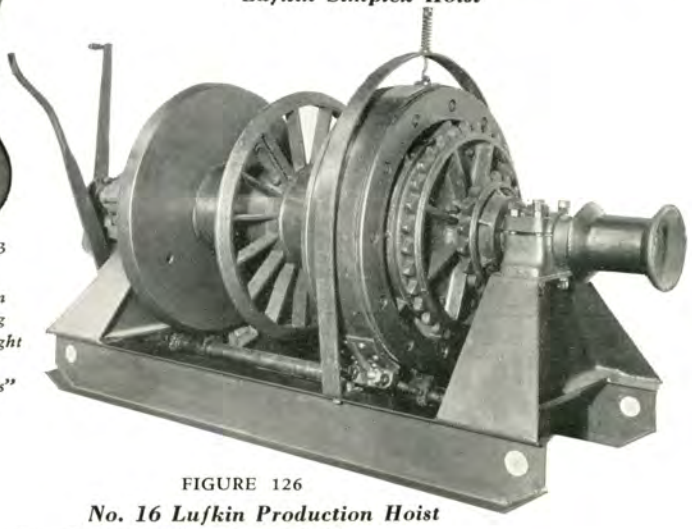


FIGURE 126
No. 16 Lufkin Production Hoist

SPECIFICATIONS OF LUFKIN PRODUCTION HOISTS

DIMENSIONS		No. 2	No. 6 & 16	No. 52	No. 522	Simplex
Line Capacity	3/16" Line	10,000	10,000	11,000	11,000	6,400
	5/8" Line	8,500	8,500	9,000	9,000	5,200
	3/4" Line	6,000	6,000	6,400	6,400	3,600
	7/8" Line	4,400	4,400	4,600	4,600	2,600
	1" Line	3,500	3,500	3,600	3,600	2,000
Diameter Drum Shaft		4	4	5	5	4
Diameter Drum		16	16	16	16	16
Length of Drum		35	35	36	36	30
Diameter Drum Flanges		42	42	42	42	36
Diameter Line Shaft		4	None	4	None	None
Line and Drum Shaft Bearings		Babbitt	Babbitt	Babbitt	Babbitt	Babbitt
Drum or Clutch Sprocket Bearings*		Hyatt	Hyatt	Hyatt	Hyatt	Hyatt
Area Braking Surface		880 Sq. In.	880 Sq. In.	1760 Sq. In.	1760 Sq. In.	690 Sq. In.
Area Friction Clutch		443 Sq. In.	443 Sq. In.	706 Sq. In.	706 Sq. In.	443 Sq. In.
Low Speed Sprocket		32T.	32T.	44T.	44T.	32T.
High Speed Sprocket		22T.	17T.	22T.	28T.	17T.
Bull Wheel Drive Sprocket		17T.	22T.	28T.	22T.	None
Weight in Pounds		7400#	6200#	12,000#	11,000#	3500#

*Clutch Sprocket Bearing on Simplex Only.

LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS

Below is a partial list of users of Lufkin equipment in the domestic and foreign fields. A careful check of the list will reveal that practically every major oil company is a user of Lufkin Equipment.

Such an imposing list of users, we feel, is pretty fine evidence of the acceptance and use of Lufkin Equipment. We gladly refer you to any user.

LUFKIN EQUIPMENT USERS IN UNITED STATES

Alford Oil Company
Allison & George
Amerada Petroleum Corp.
American Liberty Oil Co.
Amy Oil Company
Jack Appel
Arkansas Fuel Oil Corp.
Associated Oil Co.
Atlantic Oil Producing Corp.

Bankline Oil Co.
Barnsdall Oil Co.
Begol Oil Co.
Berry Asphalt Co.
Bill and Dave Oil Co.
Black & Case Oil Co.
Boone Brothers
Boonie Oil Company
Bradley & Fochee
Bradley, W. W.
Burton Drilling Co.
Burwyn Oil Corp.

C. B. Oil Co.
California Company
Camaroo Oil Co.
Capitol Oil Producing Co.
Capps, L. W.
Carter Oil Co.
Wm. Chandler
Cherokee Chief Oil Co.
Columbia Oil & Gas Co.
Cooper & Falvey
Constantine & Company
Continental Oil Co.
Cook Drilling Co.
Corbett Oil Company
Cosden & Company
Cox & Hamon
Crail Bros.
Cranfill & Reynolds
Crude Oil Purchasing Co.
Culp, H. C.
Cunningham Production Co.

Dalport Oil Corp.
Darby Petroleum Co.
Paul Doran
Davis, Smith & Bradley
Dearing, R. H. & Son
Deep Rock Oil Corp.
Deep Sand Oil Company
Devonian Oil Co.
J. B. Dial
G. L. Dowlearn
Duncan & Holt
W. O. Dye

E. C. R. Oil Co.
East Santa Fe Oil Co.
Empire Gas & Fuel Co.
Everett & Phillips
Exchange Oil Company

Falcon Oil Co.
F. H. & E. Oil Co.
Fifty Five Oil Co.
Florence Oil Co.
Fort Bend Oil Co.

Gaskill & Godlin
General Petroleum Corp.
Golden Bear Oil Co.
Gordon Folwell & Dickson
Groneman & Acme
Gulf Production Co.
Gypsy Oil Co.

Hammil Oil Company
Hampton, Lewis
Harcher Oil Co.
Henderson Oil Properties
W. B. Hinton
Hogan Petroleum Company
Honolulu Oil Co.
Houston Oil Co.
Howard County Oil Co.
Humble Oil & Refg. Co.
Humphreys Oil Co.
Hunt, H. L. Production Co.
Hyland Oil Co.

Illinois Oil Company
Imperial Petroleum Co.
Indian Territory Illuminating Oil Co.
Iron Mountain Oil Company
Ironrock Oil Co.

Jay Simmons Oil Co.
Jergins Company, A. T.
E. C. Johnston
Johnson, T. A.
T. C. Johnson
Johnston & Owens

K & A Oil Company
Kathleen Oil Co.
Kiowa Pet. Co.
Knox, Chas. E.
Knox, Powell & Stockton

Laurel Oil Company
Lechner & Hubbard
Lee & Burnett
Leidecker & Vaughn
Lide-Rowe Oil Co.
Lincoln Oil Co.
Lion Oil & Refg. Co.
Littleton Herrin
N. E. Locke
Lonnie Glasscock
Loring Oil Co.
Louisiana Oil & Refg. Co.
Luling Oil & Gas Co.
Luse & Fosdick

Magna Production Co.
Magnolia Petroleum Corp.
Manziel, Bob
Marcus Oil Co.
Mar-La-Fay Oil Corp.
Marland Oil Company
Martin, L. B.
J. H. Massey Oil Co.
McAlester Fuel Company
McCutcheon, Alex.
W. M. McVey
McVicar & Rood
Mecon Oil Company
Menke, John G.
Merco Oil Co.
Merrick, J. F.
Mid-Continent Production Co.
Mid-Kansas Petroleum Corp.
Miller-Lacy Oil Co.
Mills Bennett Production Co.
Miramar Corporation
E. H. Moore, Inc.
More & Shanks
Mortex Petroleum Co.
Morton & Elder
Moss, H. S.
Mul-Berry Oil Co.
Murdock, C. E., Inc.
Murray & Goode
Murray, T. W.

Nathan Oil Company
Navarro Oil Co.
Naylor, H. M.
Nelms, H. G.
Nicholson-Terrell Oil Corp.
Nile Oil Co.
Normandy Oil Company

Oceanic Oil Company
Ohio Oil Co.
O'Kain & Brain
L. C. Oliver
Omega Oil Co.
Orchard, Chas.
J. W. Osteen
Owen & Sloan Oil Co.

P & G Producing Company
Pace, Geo. L.
Paluxy Oil Corporation
Pan American Petroleum
Pansy Oil Co.
Pencole Pet. Company
Chas. Pettit
Petroleum Pipe Line & Storage Co.
Petroleum Securities
P. H. Pewitt
Loyce Phillips
Phillips Petroleum Co.
Pilot Oil Co.
Porot Oil Company
Powell, L. W.
Prairie Lea Production Co.
Producers Petroleum Company
Pure Oil Co.

Red Iron Drilling Co.
Reese, J. T.
Reeves, G. I.
Republic Production Company
Retsel Drilling Company
Rex Oil Co.
Richfield Oil Co.
Rio Bravo Oil Co.
Rio Grande Oil Co.
Riverside Oil Company
J. J. Roberts
Roberts Brothers
J. I. Roberts Drilling Co.
M. Robin
Roeser & Pendleton, Inc.
Rosemar Oil Co.
Rovenger Oil Co.
Royal Petroleum Company
Royalty Service Corporation
J. M. Rush
Rushwold Oil Company
Ryan Oil Co.

Saxet Oil Corporation
Sessions Oil Company
Seward Oil Co.
Shaffer Oil & Refining Co.
Shaw, T. G.
Shell Petroleum Co.
H. A. Shmuler
Signal Oil & Gas Company
Simms Oil Co.
Sinclair-Prairie Oil Co.
Skelly Oil Co.
J. R. Smith Oil Properties
Smith, R. E.
Smith, Victor C.
Smith, Walter R.
Smitherman & McDonald
Sonron Oil Corp.
South Texas Oil Co.
Southern Development & Prod. Co.
Spear, H. K.
Standard Oil Co. of La.
Standard of California
Standard of Kansas
Stanolind Oil & Gas Co.
Sterling Oil & Refining Co.
Strake Oil Corporation
Stroube & Stroube, Inc.
Summit Drilling Company
Sun Oil Company

Tarver, A. H.
Terminal Oil Co.
Texas Trading Co.
Texokana Oil Company
The Texas Company
Texas Division
California Division
The Tidal Osage Companies
Thompson, W. L. & Will
Tide Petroleum Co.
Tide-Water Companies
Top Oil Co.
Torrey & Feaster
Trentman Oil Company
Turman, L. C.

United North & South Co.
United Oil Well Supply Co.
Unity Oil Co.
Uscan Oil Co.

Vacuum Oil Co.
Vanguard Oil Company

Weaver-Crim Oil Co.
Western Gulf Oil Co.
J. O. Whittington
Wil-Day Oil Co.
Wilshire Oil Co.
Wilson Broach Oil Company
Winfree Oil Co.
Witherspoon Oil Co.
Woodley Petroleum Corp.
J. A. Woods

Yost & McDowell

FOREIGN

Anglo Mexican Petroleum Corp.
Argentine Government Oil Fields
Asiatic Petroleum Co.
Burmah Oil Co.
Cia Mexicana de Petroleo "El Aguila"
International Petroleum Co., Ltd.
Lago Petroleum Corp.
Mitsubishi Shoji Kaisha, Ptd.
North Saghalien Petroleum Co.
Oil Well Engineering Co.
Romano Americana
Steaua Romana
Standard Oil Co. of New Jersey
Standard Oil Co. of Argentine
Standard Oil of Venezuela
Tropical Oil Co.
Venezuela Gulf Oil Co.

« Home of the Lufkin Line »

PLANT OF THE

LUFKIN FOUNDRY & MACHINE CO.

LUFKIN, TEXAS

"Manufacturers of Quality Machinery Since 1900"

LUFKIN

EQUIPMENT OF ADVANCED DESIGN

"LUFKIN UNITS • Quality Equipment for Life-Time Service"