

LIONEL SERVICE MANUAL

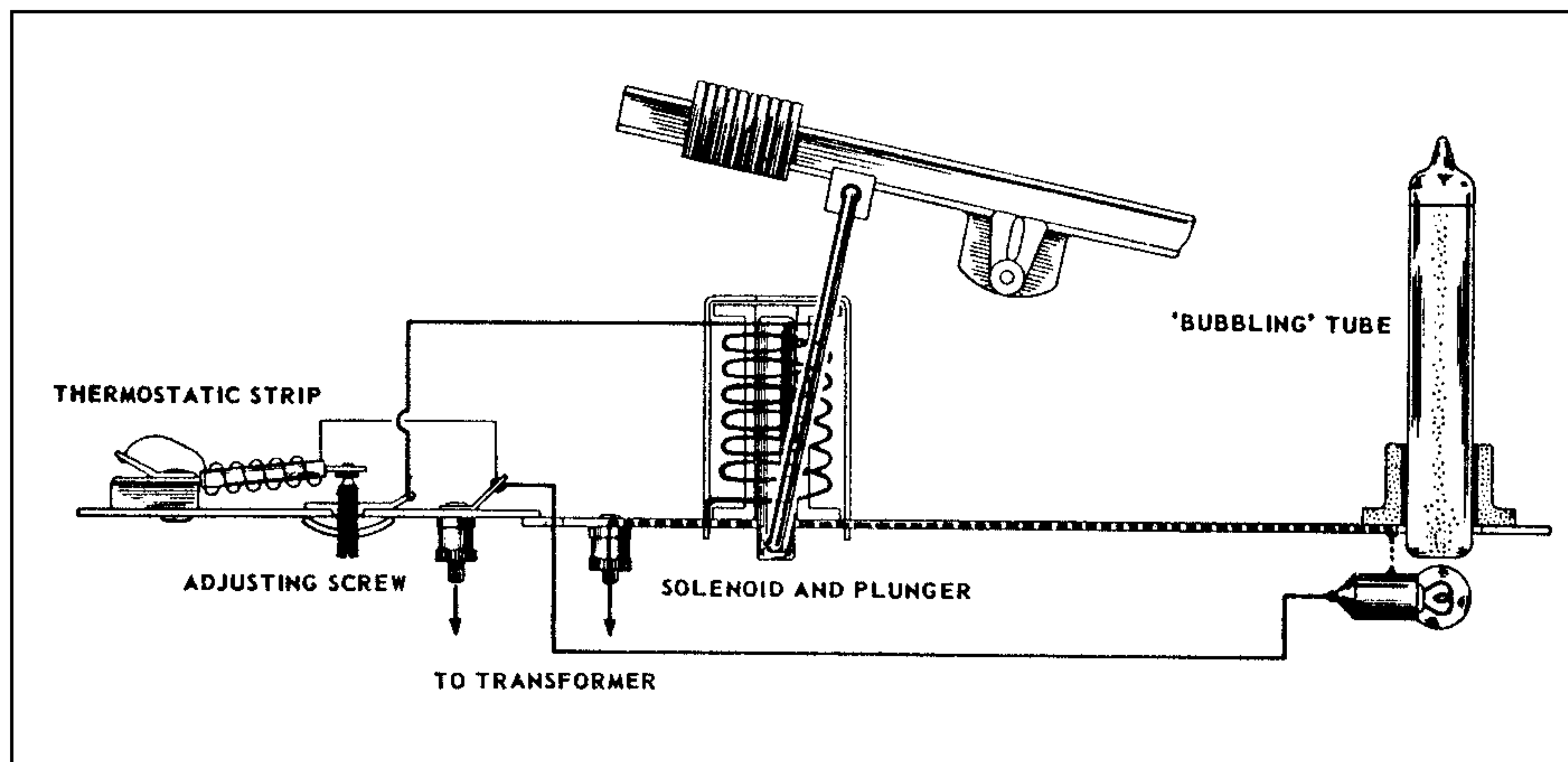
NO. 455 OIL DERRICK

Lionel No. 455 Oil Derrick is a close representation of the structures used in oil fields and is equipped with an operating 'walking beam' pump and an illuminated glass 'bubbling' tube which simulates the flow of oil.

The operation of the 'walking beam' is accomplished by a solenoid-and-plunger mechanism actuated by a thermostatic bimetal strip. In its normal position the thermostatic strip makes contact between the solenoid and the binding post connected to one side of a 12-14 volt circuit. The energized solenoid pulls the plunger upward and moves the 'walking beam' down. As soon as the bimetal strip is sufficiently heated by the resistance wire wrapped around it, it bends upward breaking the contact to the solenoid and allowing the plunger to drop down and the 'walking beam' to rise. After a brief interval the bimetal strip cools down and straightens so that the contact is again restored and the cycle is repeated. The rhythmic operation of the pump depends on the voltage applied to the oil derrick and on the initial tension on the bimetal strip which is regulated by the position of adjusting screw.

The bubbling of the liquid in the glass tube is induced by the heat of the lamp mounted on the bottom of the base. For best operation the lamp should be as close to the base of the tube as possible.

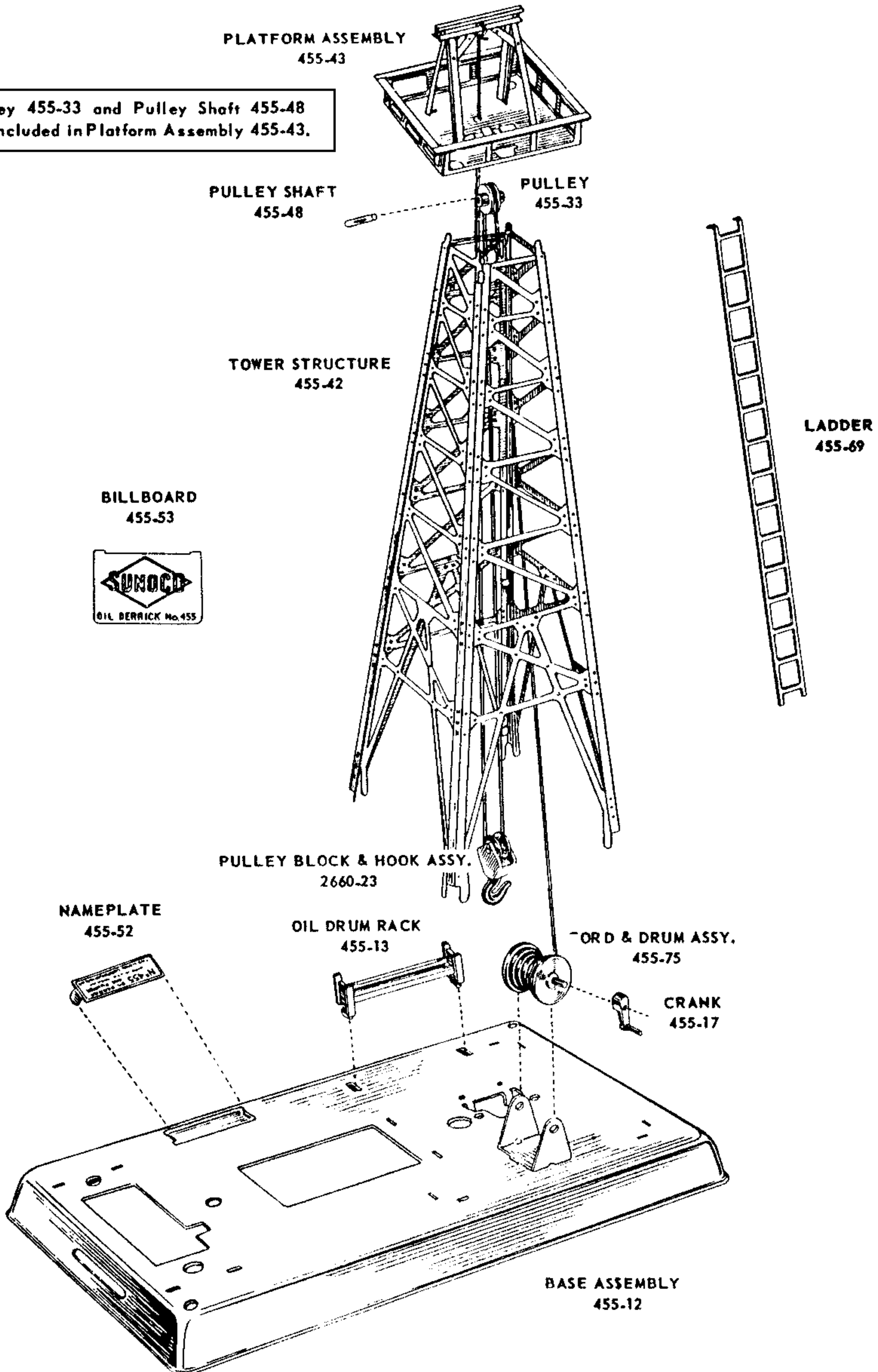
WIRING DIAGRAM OF NO. 455 OIL DERRICK



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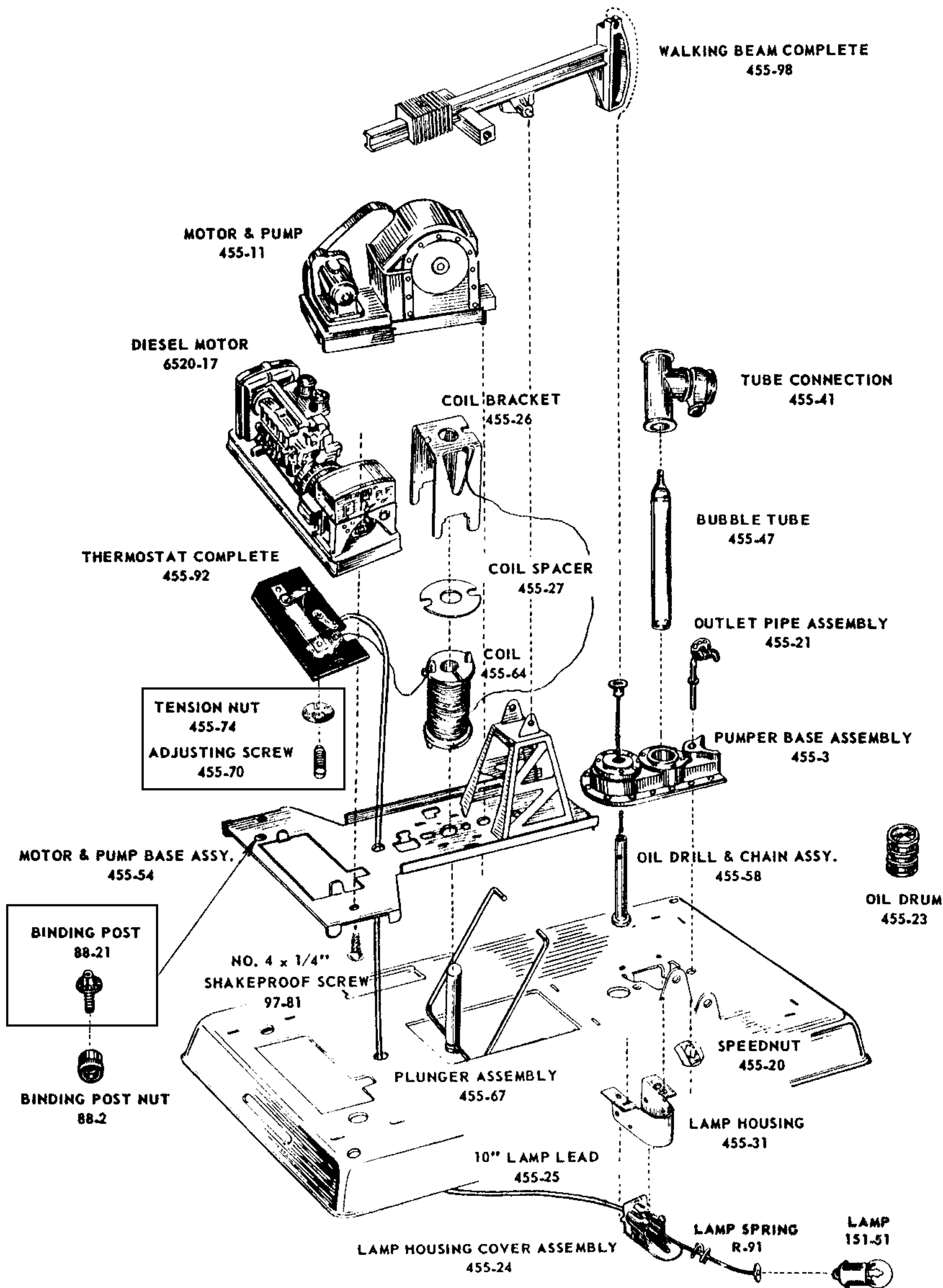
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Pulley 455-33 and Pulley Shaft 455-48 are included in Platform Assembly 455-43.



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REPLACEMENT PARTS FOR NO. 455 OIL DERRICK

Part No.	Part Name	List Price	Part No.	Part Name	List Price
88-2	Binding Post Nut	.03			
88-21	Binding Post	.05			
97-81	No. 4 x 1/4" Shakeproof Screw	.02			
151-51	Lamp	.30			
364C-1	Controller	1.25			
455-3	Pumper Base Assembly	.25			
455-11	Motor & Pump	.35			
455-13	Oil Drum Rack	.15			
455-14	Base Assembly	1.25			
455-17	Crank	.10			
455-20	Speednut	.05			
455-21	Outlet Pipe Assembly	.20			
455-23	Oil Drum	.15			
455-24	Lamp Housing Cover Assembly	.20			
455-25	10" Lamp Lead	.15			
455-26	Coil Bracket	.10			
455-27	Coil Spacer	.02			
455-31	Lamp Housing	.10			
455-33	Pulley	.15			
455-41	Tube Connection	.25			
455-42	Tower Structure	1.50			
455-43	Platform Assembly	.60			
455-47	Bubble Tube	.20			
455-48	Pulley Shaft	.05			
455-52	Nameplate	.10			
455-53	Billboard	.10			
455-54	Motor & Pump Base Assembly	.50			
455-58	Oil Drill & Chain Assembly	.35			
455-64	Coil	.50			
455-67	Plunger Assembly	.25			
455-69	Ladder	.15			
455-70	Adjusting Screw	.10			
455-74	Tension Nut	.05			
455-75	Cord & Drum Assembly	.35			
455-92	Thermostat Complete	1.00			
455-98	Walking Beam Complete	.35			
2660-23	Pulley Block & Hook Assembly	.35			
6520-17	Diesel Motor	.75			
R-91	Lamp Spring	.05			

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<u>Part Number</u>	<u>Location</u>	<u>Unit Price</u>	<u>Min. Quan.</u>	<u>Description</u>
61-22	A-61	.05	25	Lamp Contact
88-2	G-83	.05	25	Binding Post Nut
88-21	H-86	.05	25	Binding Post
97-81	I-71	.02	25	Motor Mtg. Screw
363-300	LC	.30	10	Lamp
364C-1	J-35	1.25		Controller
455-3	K-93	.30		Pumper Base Assem.
455-11	K-43	.50		Motor & Pump (Ornamental)
455-13	K-73	.20		Oil Drum Rack
455-14	K-84	1.50		Base Assem.
455-17		.15	6	Crank Handle
455-20	K-54	.05	12	Speednut (Pumper Base)
455-21	K-63	.25		Outlet Pipe Assem.
455-23	K-11	.20	4	Oil Drum
455-24	K-53	.25	2	Lamp Housing Cover Assem.
455-26	K-83	.15		Coil Bracket
455-27	K-63	.02	25	Coil Spacer
455-31	K-53	.15	4	Lamp Housing
455-33	K-63	.20		Pulley
455-41	K-94	.30		Tube Connection
455-42	K-44	2.00		Tower Structure Assem.
455-43	K-41	.75		Platform & Pulley Assem.
455-47	O-56	.25	2	Bubble Tube
455-48	K-63	.05		Pulley Shaft
455-52	K-77	.15		Nameplate
455-53	K-63	.15		Billboard (Sunoco)
455-54	K-53	.75		Motor Pump Base
455-58	K-63	.50		Oil Drill & Chain
455-64	K-94	.60		Coil
455-67	K-83	.30		Plunger & Arm Assem.
455-69	K-73	.20		Ladder
455-70	K-77	.10	6	Adjustment Screw (Thermo)
455-74	K-63	.05	12	Tension Nut (Thermo)
455-75	K-63	.50		Cord & Drum Assem.
455-92	K-94	1.50		Thermostat Assem.
455-98	K-73	.50		Walking Beam Assem.
2660-23	Sub. 6560-13			Pulley Block & Hook Assem.
6530-17	C-36	1.25		Diesel Motor
6560-13	I-66	.50		Pulley Block & Hook Assem.
R-91	N-55	.05		Lamp Spring