American

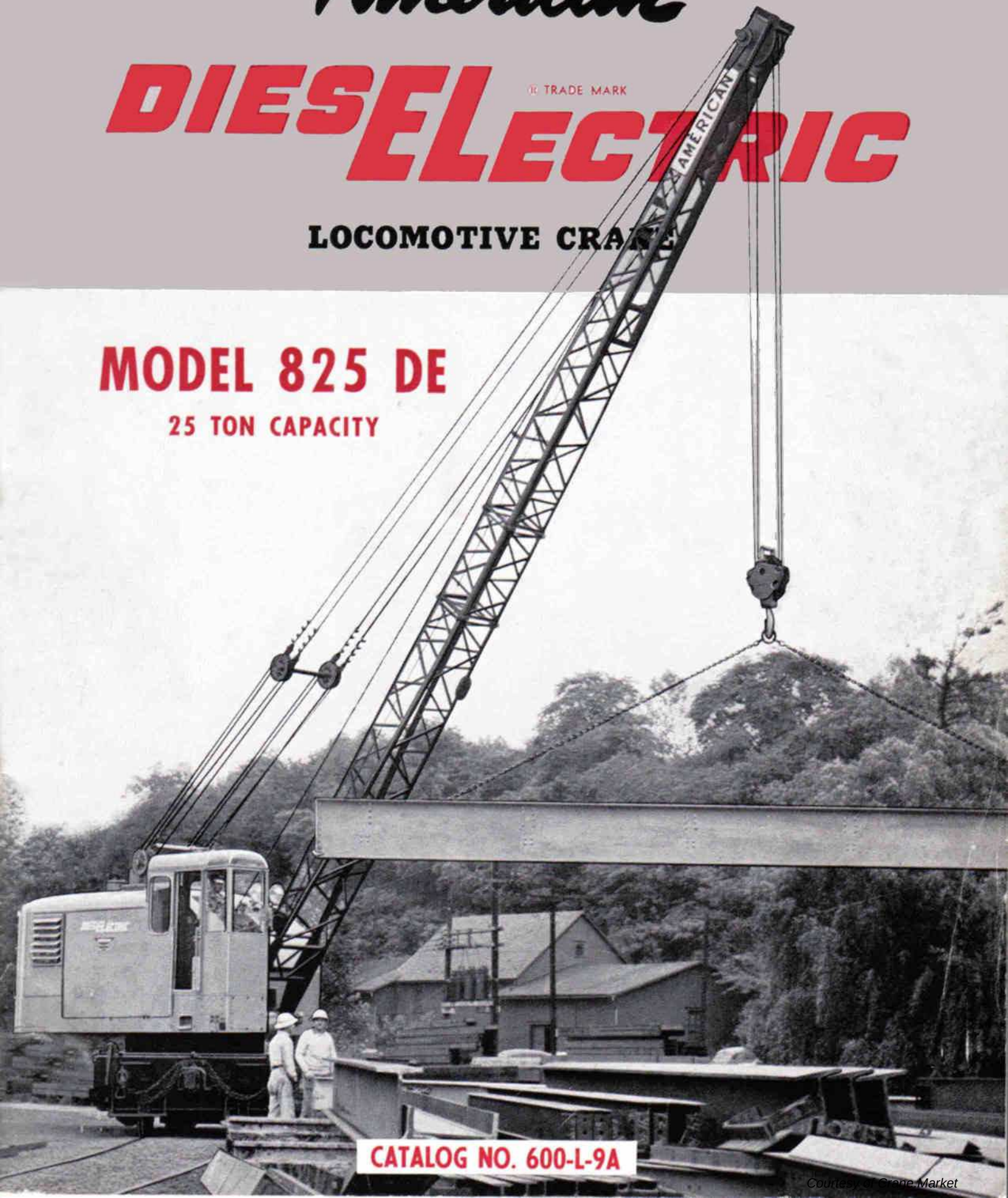
DIESELECTRIC

® TRADE MARK

LOCOMOTIVE CRANE

MODEL 825 DE

25 TON CAPACITY



CATALOG NO. 600-L-9A

DIESEL-ELECTRIC LOCOMOTIVE CRANE U.S. PATENT, NO. 2083460, CANADIAN PATENT NO. 368226 AND TOUCH CONTROL U. S. PATENT NO. 2370856 GRANTED TO AMERICAN HOIST AND DERRICK CO.

SMOOTH POWER ON THE

RAILS!

DIESELECTRIC® AN AMERICAN FIRST

Back in 1924, when the first experimental diesel-electric locomotive was built, a 25 billion dollar industry was revolutionized. Today, more than 9 out of 10 locomotives ordered by U.S. railroads are driven by the highly efficient electric traction motor, and powered by the diesel engine. Even more remarkable, is the parallel revolution in locomotive cranes. For this revolution was planned and developed almost single-handed by the American Hoist and Derrick Company.

In harnessing the super-smooth, ultra-efficient energy of the diesel-electric system for use on cranes, American Hoist engineers have met special needs in special and ingenious ways. Most notable is their patented method of applying electric power to the trucks and direct-diesel power to the deck and boom.

The American DiesELectric is a fully perfected, fully field tested unit. It is not, in any sense, a converted steam crane, or gasoline crane, or mechanical diesel crane, but is totally new from top to bottom. It brings the greatest advance in locomotive crane design yet achieved . . . Another of many "American firsts."

AN AMERICAN DIESELECTRIC®

. . . Pays for itself in 5 years!

A locomotive crane is many things to many men. To the operator, it is a working tool in which ease of control, speed, and smoothness are all-important. To the master mechanic, it is a problem in maintenance. To the general manager, it is a production unit, judged by the tons of materials it can move per day. To the board of directors, it is an important capital investment.

The one fact about the American DiesELectric which sums up all others is this: Detailed cost and operating records show that this crane *will write off its own cost fully in five years.* Few, indeed, are the capital investments that can offer such a return.

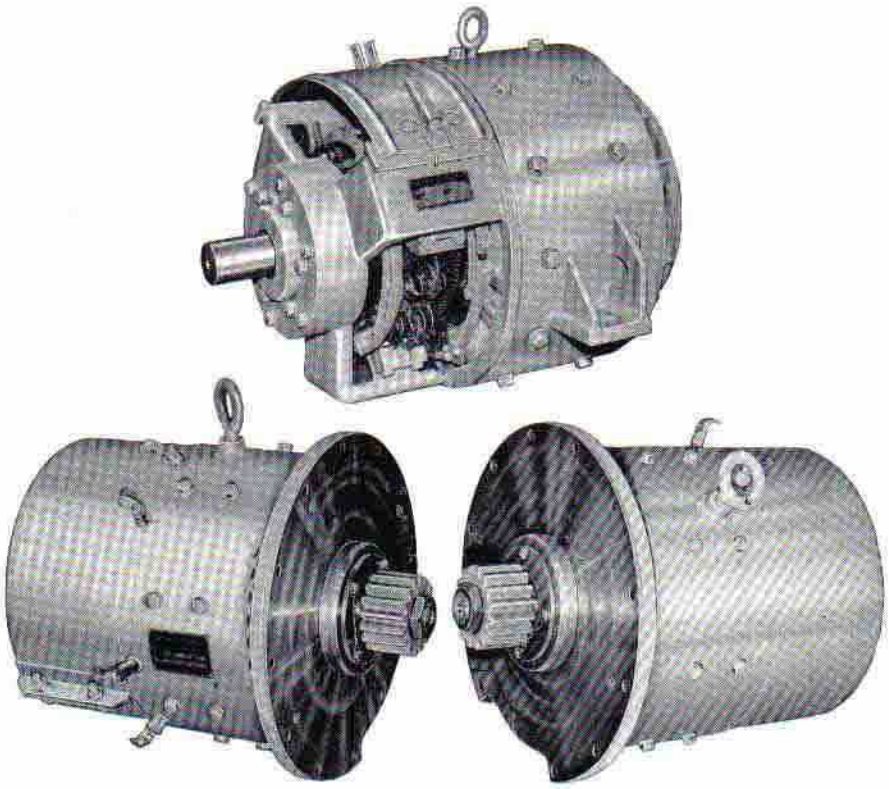
To understand how this is possible . . . to see how the DiesELectric can serve for many, many years after it has earned back its cost . . . study its features of design, as shown in this catalog.

American Hoist

AMERICAN HOIST & DERRICK CO.

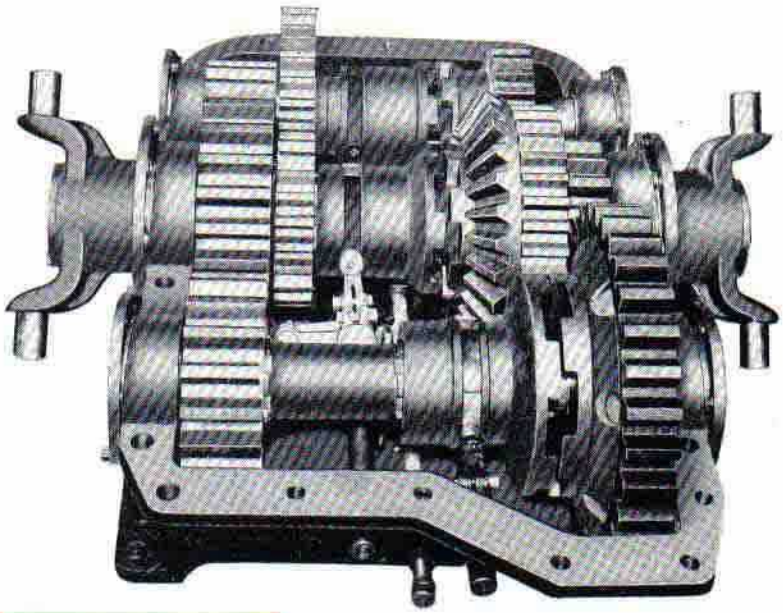
63 SOUTH ROBERT ST. • ST. PAUL, MINNESOTA

ONE GENERATOR



TWO TRACTION MOTORS

ELIMINATE ALL THESE WEARING PARTS

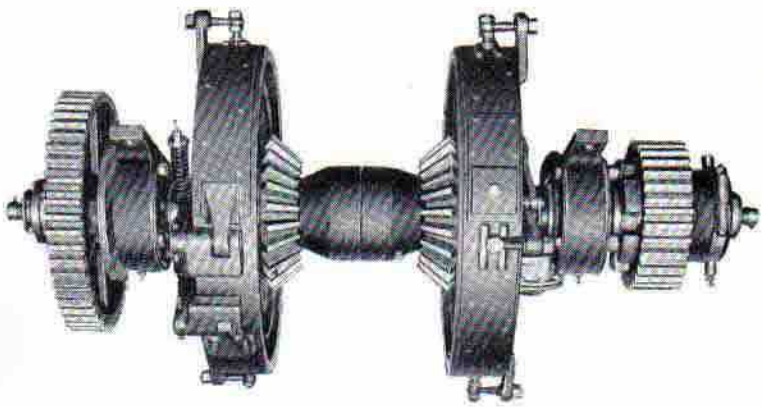


- 9 SHAFTS
- 2 FRICTION CLUTCHES
- 18 HEAVY BEARINGS
- 9 BEVEL GEARS
- 4 UNIVERSAL JOINTS
- 2 GEAR CASES
- MISCELLANEOUS PINS, COTTER KEYS, ETC.
- 9 SPUR GEARS
- 3 SHIFTER SLEEVES
- 3 JAW CLUTCHES
- 1 TRANSMISSION CASE

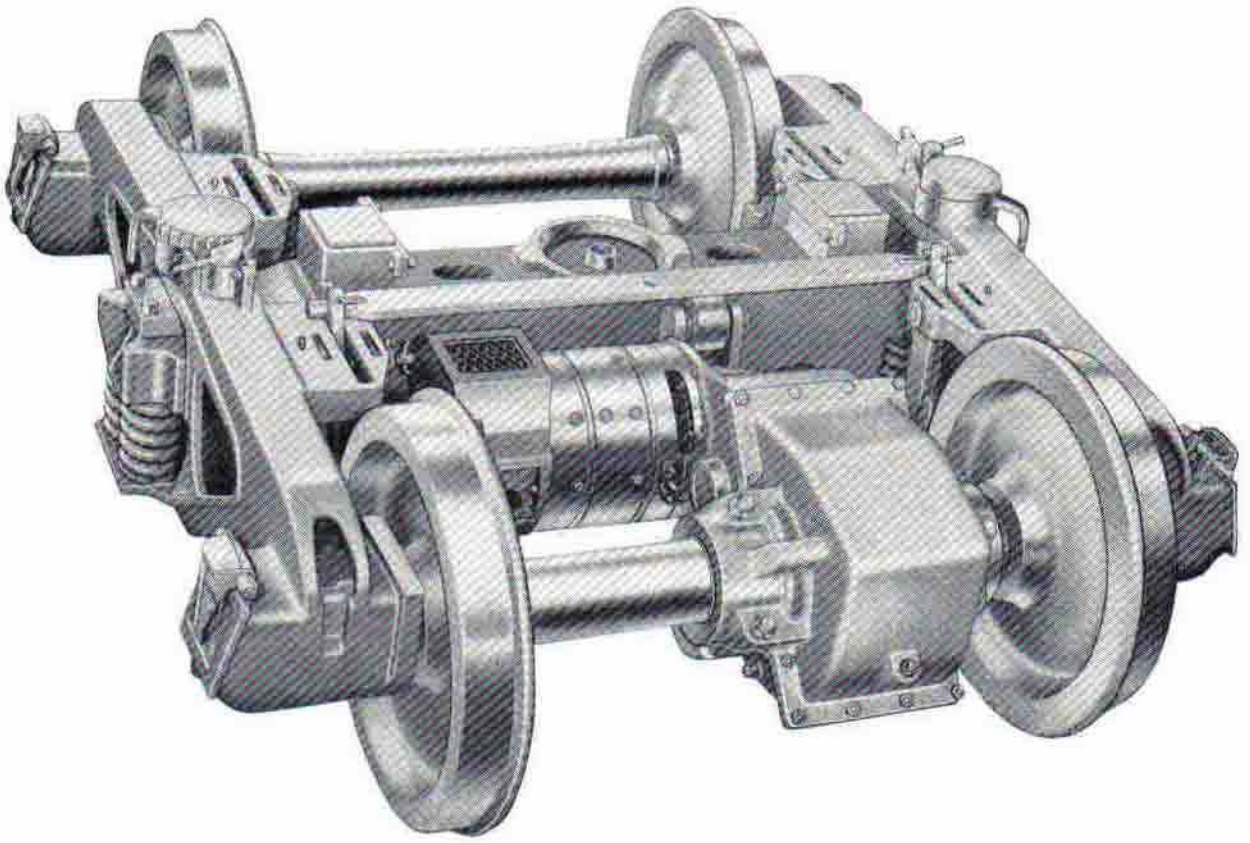
MAINTENANCE COSTS REDUCED - 25% TO 50%

At one stroke, all wearing parts shown and listed on this page have been eliminated—replaced by three fully enclosed, compact, simple units illustrated on the opposite page. Obviously, service work is reduced to a remarkable degree.

To translate this into dollars and cents, consider the fact that 50% to 75% of maintenance on mechanical cranes is centered under the crane. On this basis it will be evident that an estimated saving of 25% to 50% of upkeep cost with an American DiesELectric is conservative in the extreme.



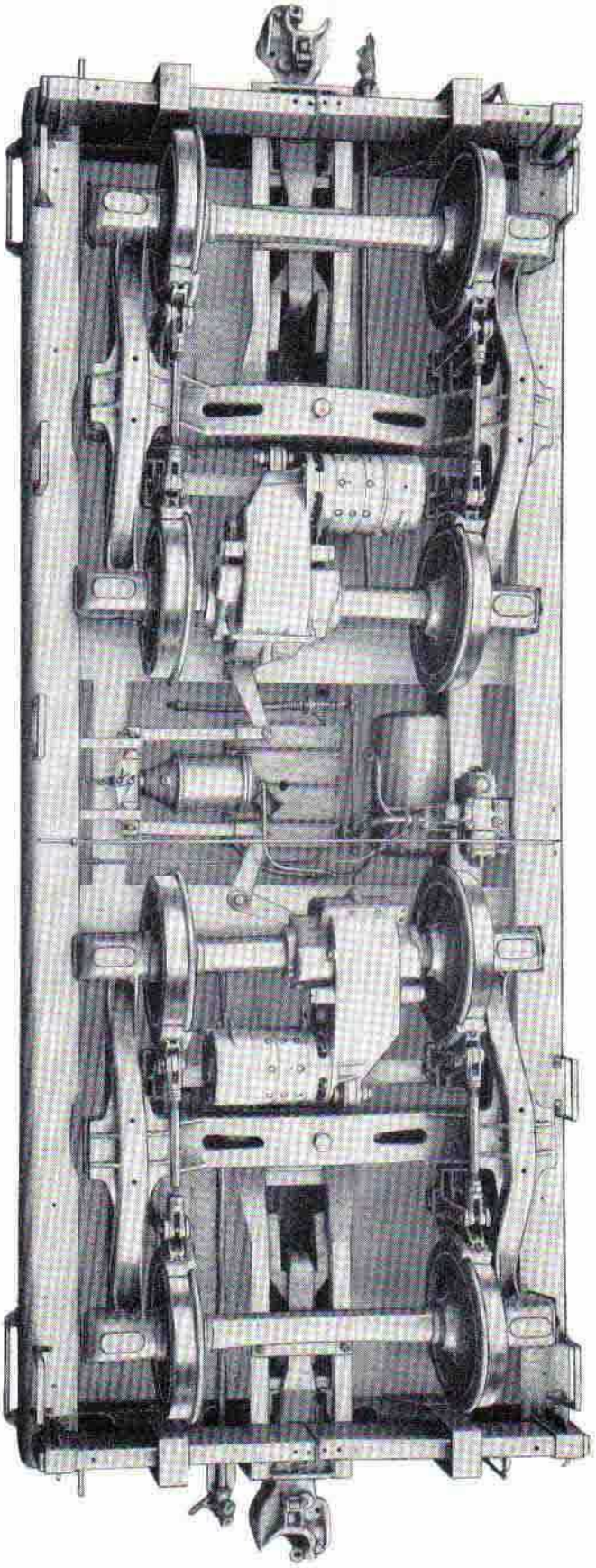
TRUCKS



TROUBLE-PROOF... EACH TRUCK AN INDIVIDUAL SELF CONTAINED POWER UNIT.

The American DiesELectric is designed primarily as a powerful crane, but by disengaging the main clutch, you can move or switch cars on your sidings . . . even with the clutch engaged, there is always adequate traction power for heaviest kinds of crane duty. The electric traction motors, proved by millions of miles of service on heaviest U.S. trains provides maximum draw bar pull at the instant of starting. These motors are mounted on specially designed trucks, built complete by American Hoist. They provide all the flexibility of steam power, plus the economy of diesel power and their extreme simplicity is insurance against trouble.

FEATURES INCLUDE: 1. Modern cast steel construction; conforms to latest AAR rules. Trucks swivel around a 60 foot radius curve. 2. Trucks specially designed for locomotive crane service. 3. Powerful air brakes conform to AA standards. 4. Motor suspended between axle and bolster. 5. Multi-wear rolled steel wheels.

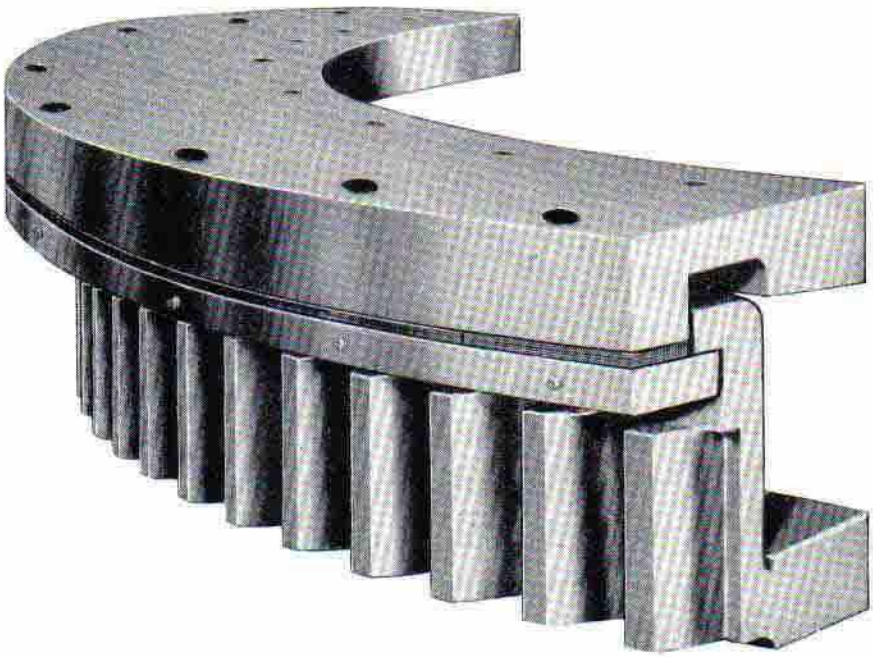


DIESELECTRIC®

DRIVE MECHANISM

Notice the clean, simple underbody of this American 25 ton DiesELectric Crane—quite different from any other locomotive crane now in service. Check the following construction features and you'll see why the American DiesELectric is "the smoothest power on the rails."

1. **No vertical travel shaft.**
2. **Under truck free of shafts and gears except motor and axle gears. Axle gears fully enclosed running in oil.**
3. **Trucks free to swivel on sharp curves or weave on rough track.**
4. **Heavy duty end outriggers.**
5. **Motor pinion and axle gears quickly and easily disengaged for "in train transportation" from plant to plant or working site to working site.**



NO KING PIN!

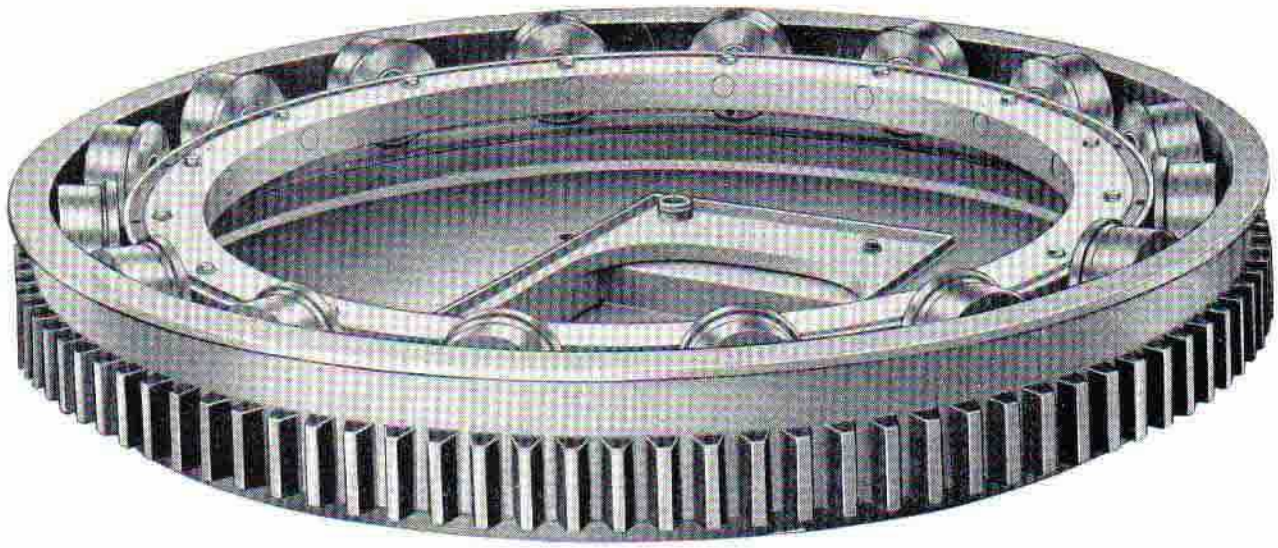
AMERICAN GIB RING ELIMINATES KING PIN . . . PROVIDES GREATER SHOCK ABSORBING STRENGTH

American Hoist developed its now famous interlocking gib ring to replace an old trouble maker—the king pin. Bumping and jolting transmitted when switching cars . . . the tremendous prying and shearing strains on connection between deck and car body made the slender, center king pin—a weak spot in crane design.

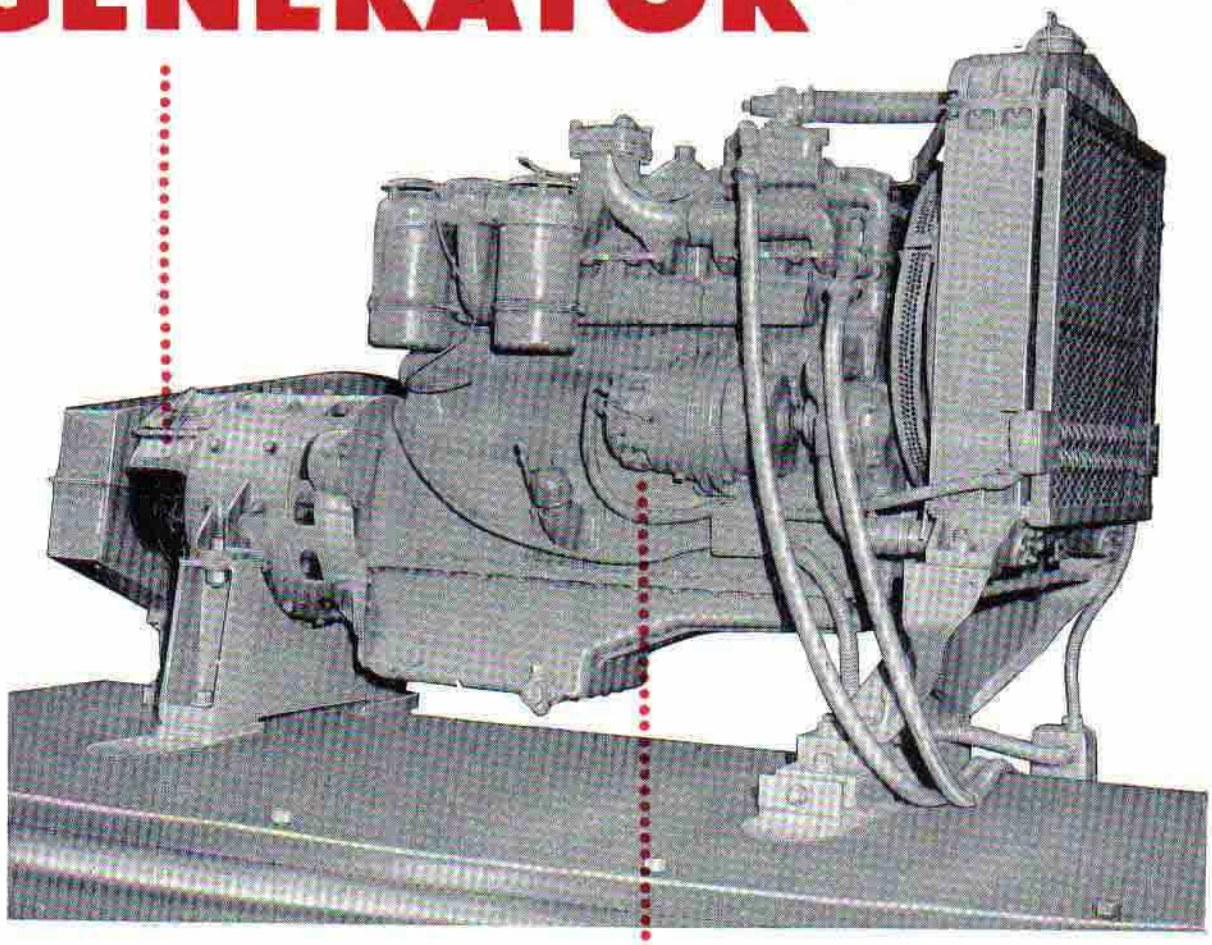
Now, American Gib Ring construction makes this connection one of the strongest points of DiesELectric design. Its large bearing area presents a full 6½ foot diameter to absorb shocks and strains.

DECK TURNS ON A TRUE ROLLER BEARING

Sixteen (16) bronze bushed, conical steel rollers carry the machinery deck of an American 825 DiesELectric. These rollers turn between two finished steel paths—a true roller bearing in every sense. Weight of machinery deck, boom and load is carried on live rollers—not by roller cage or roller axles. The American roller path system, being fully enclosed against dirt or grit and having full provision for complete lubrication, minimizes wear and reduces maintenance costs.



GENERATOR



POWER UNIT

You get a complete package when you buy your American DiesELectric Locomotive Crane. The diesel engine and railway traction type generator are directly connected and perfectly aligned on a heavy steel base. The generator is built specifically for the DiesELectric and has ample capacity to handle both traction motors.

The diesel engine is furnished complete with electric starting, batteries, air cleaners, fuel filters and all accessories. Both engine and generator are easily accessible for servicing.

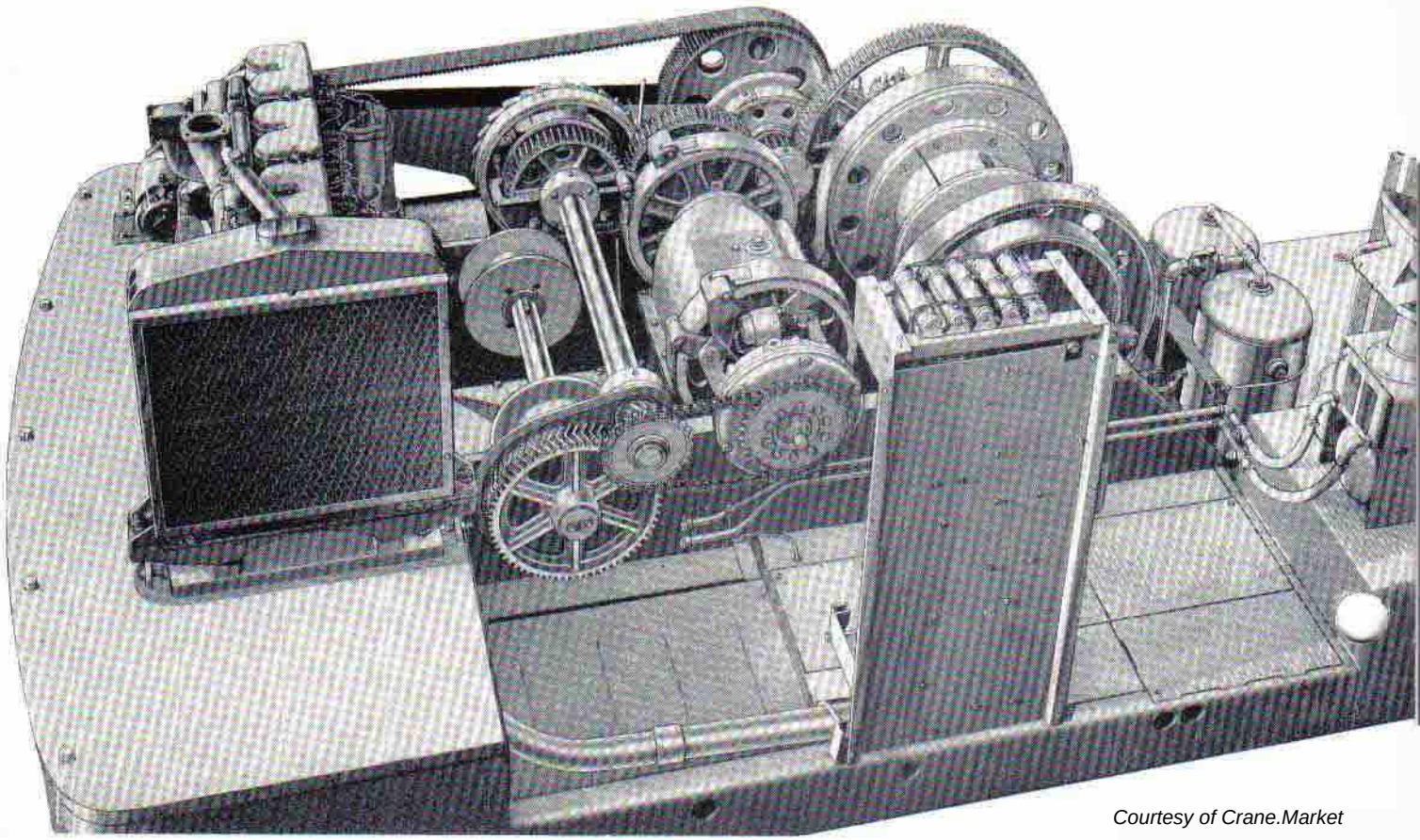
CLEAN MODERN

MAKES SERVICE WORK EASY!

Here is a new, clean, orderly and efficient machinery layout. It has structural soundness, ideal mechanical balance and a simple and sensible arrangement of all units.

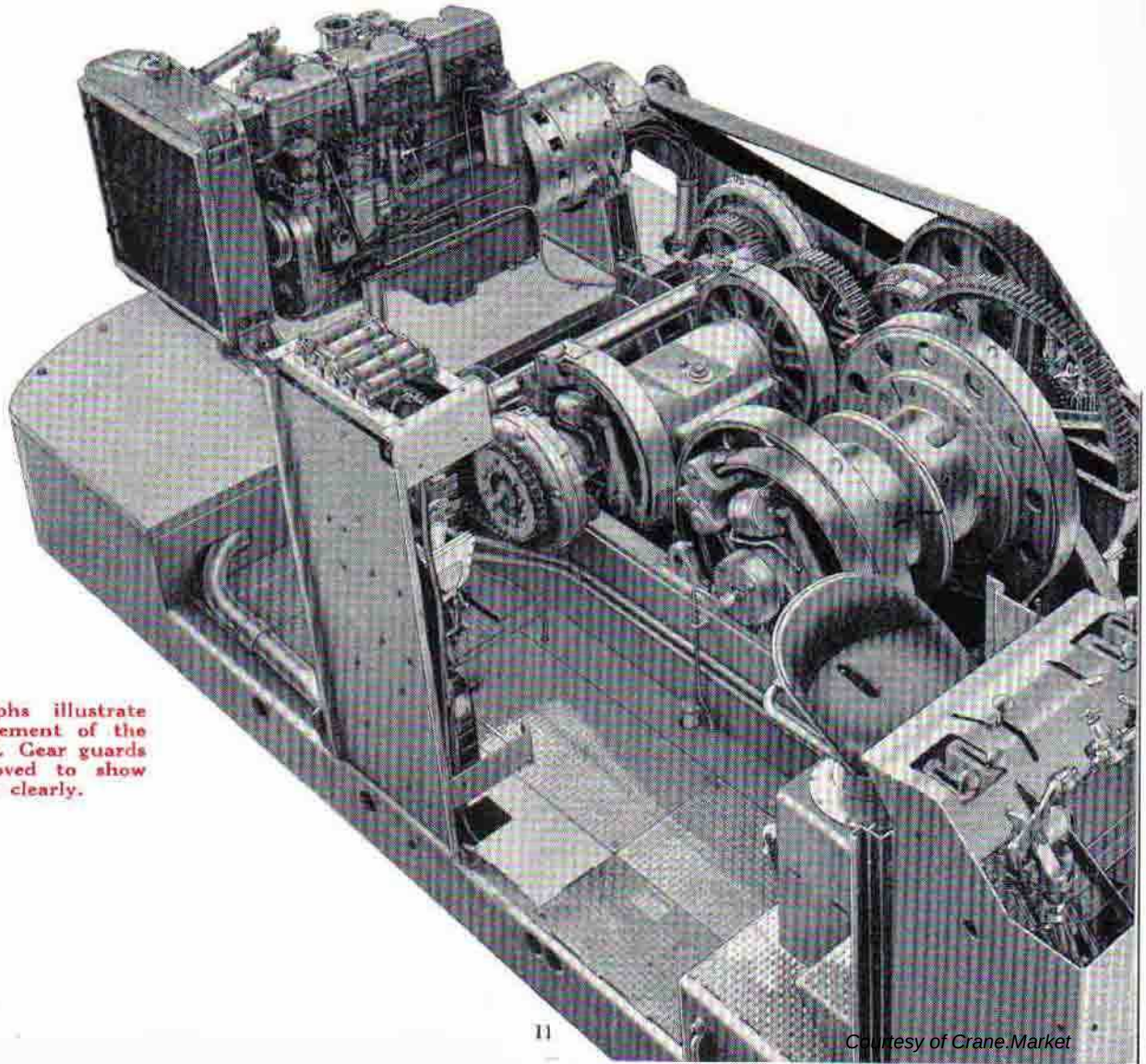
Simpler, safer, faster maintenance work will be evident from the first day. Oiling is now an easy job. All major machinery is above deck, instantly accessible, arranged for convenient checking.

Standard 14" safety clearance between machinery deck and car body has long been a feature on American Locomotive Cranes. Every possible refinement adding to smooth, comfortable, safe, low cost operation is standard on the American DiesELectric.

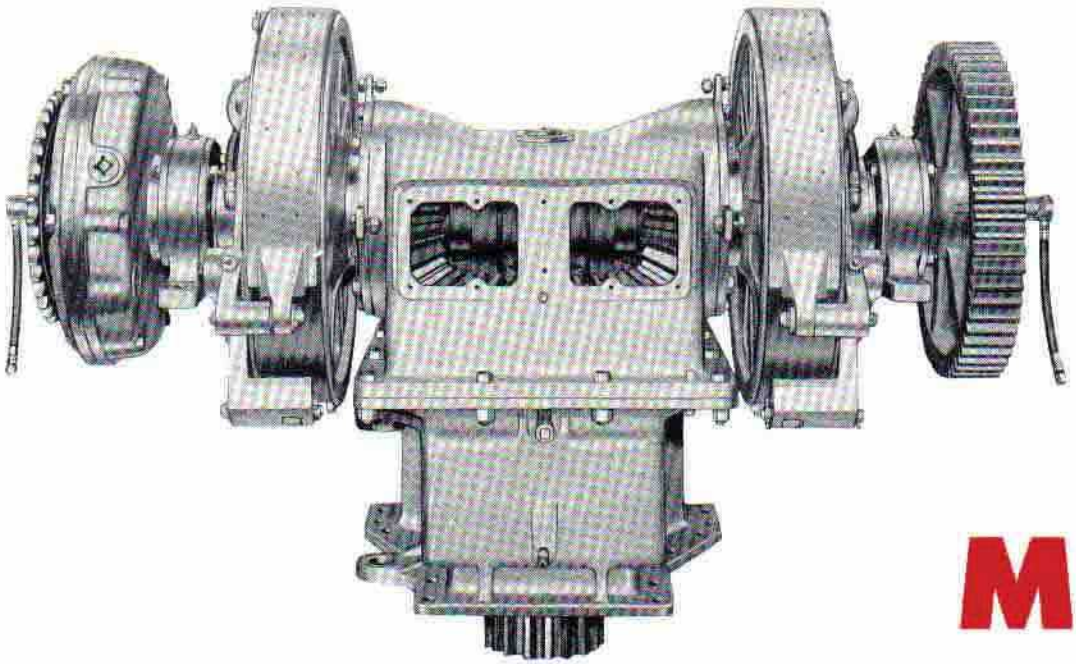


DECK DESIGN

- **FULL WIDTH HEAVY CONSTRUCTION.** Walkways are integral with main deck, and will stand up for life of the crane.
- **WELDED ROLLED STEEL DECK.** Electrically welded rolled steel machinery platform. No blow or shock can crack it.
- **CONTROLLED TENSION TAGLINE WINDER.** Operator can instantly increase or reduce tension on tagline.
- **FULL SHIELDING** of all electrical controls and moving parts. All machinery safely enclosed. Operator's portion of cab shut off, reducing noise and making cab easy to heat.
- **FULL VISION CONTROL POSITION.** Operator's stand is placed ahead and at the side of the boom seat, for best view of load at all times.



These photographs illustrate the deck arrangement of the American 825 DE. Gear guards have been removed to show machinery more clearly.

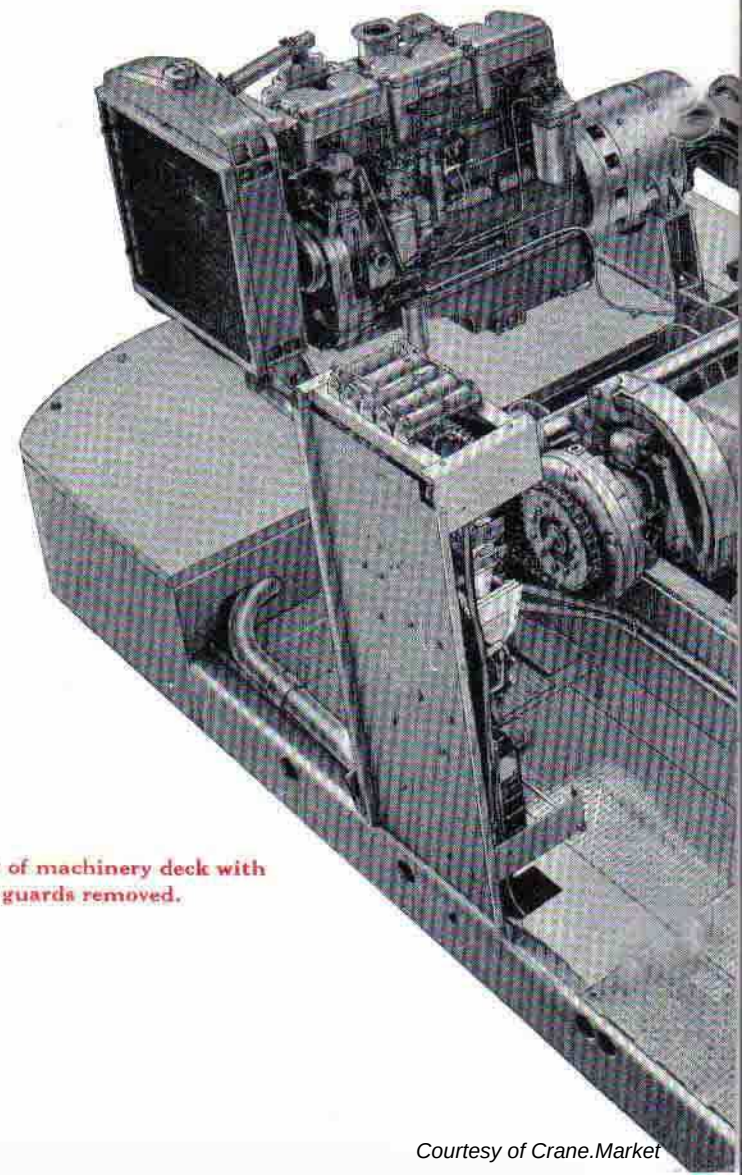


DE
MACHI

SWING CLUTCH ASSEMBLY

The ever increasing demands for higher working efficiency can have but one result — the utmost in smoothness and accuracy of control. Here in this American Swing Clutch assembly you'll find all the refinements that over five years research, experiment and testing can give.

You'll find outside contracting band, slewing clutches and brakes . . . double acting tandem type easy to adjust, simple to remove and re-line. You'll find bevel gears and clutch spider are supported by anti-friction bearings in the cast steel housing instead of by the swing shaft. This assures extreme rigidity plus perfect gear mesh and permits swing shaft clutch, which turns on anti-friction bearings, to take torque loads only! All vital mechanism fully enclosed running in oil.



View of machinery deck with gear guards removed.

CK

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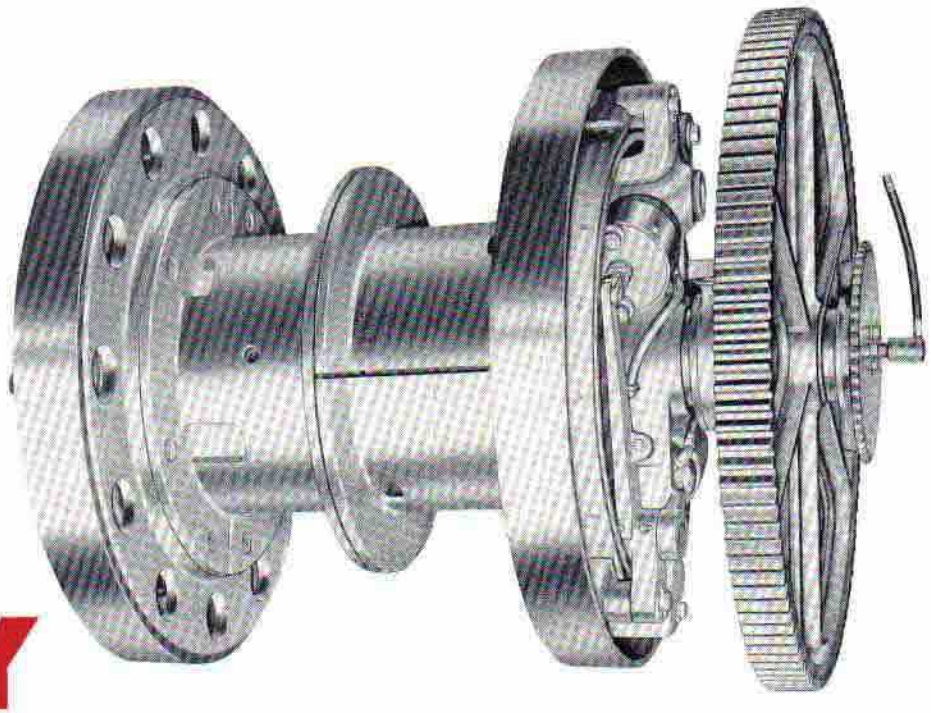
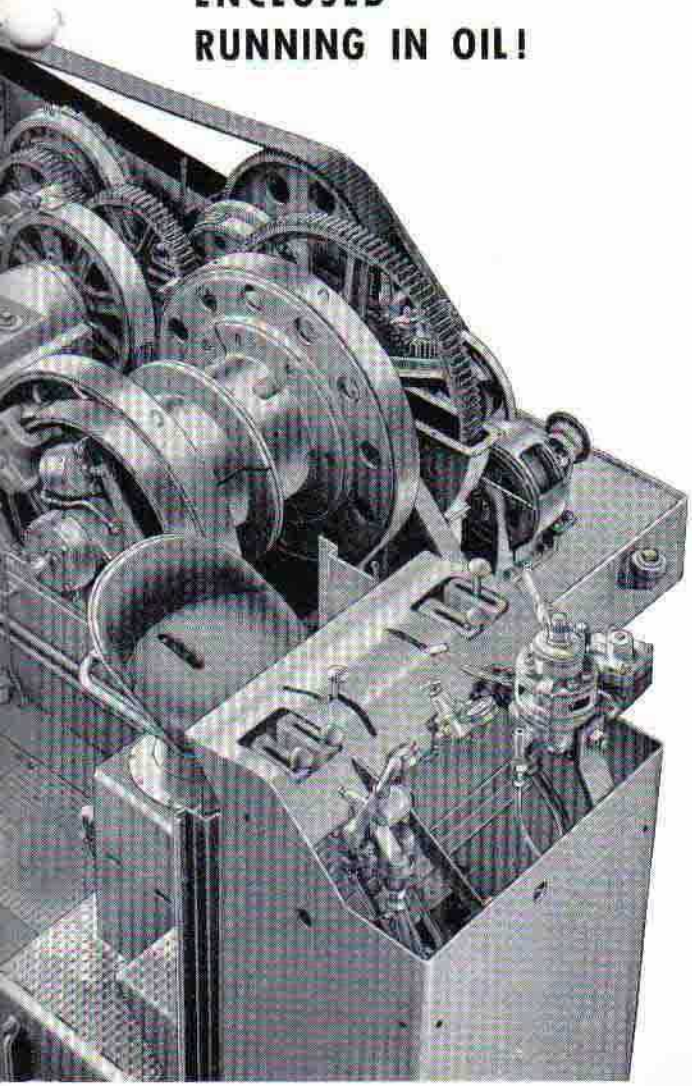


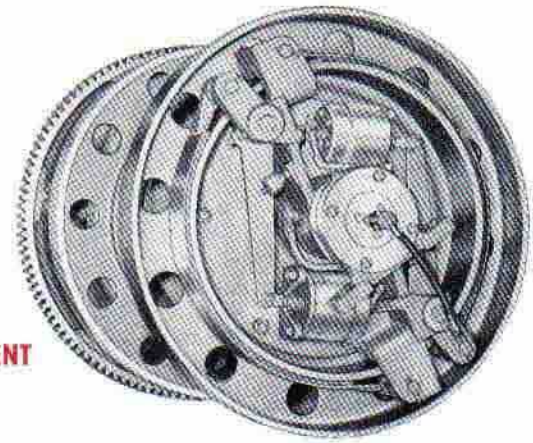
MAIN DRUM ASSEMBLY

With contracting type tandem band friction clutches designed into the main drum assembly, control is perfection smooth. Clutch is operated by two air cylinders—one for each half of the contracting band. Tandem construction also provides automatic equalization, eliminates drag and gives operator sensitive "feel" the load.

Drum gear is fully enclosed—running in oil to eliminate another trouble point in crane operation.

ALL DECK GEARS ENCLOSED RUNNING IN OIL!



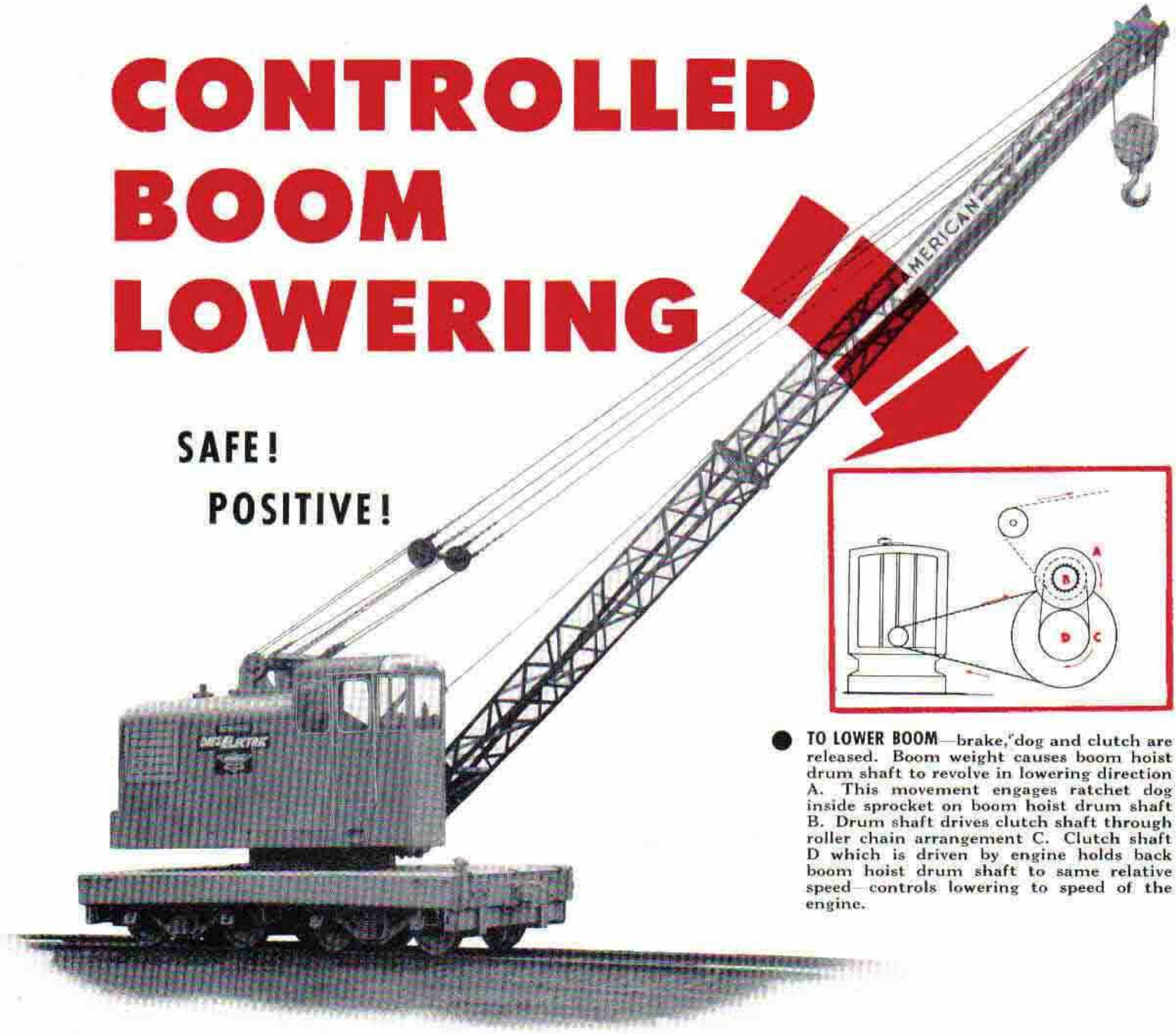


VIEW OF TANDEM CLUTCH ARRANGEMENT

CONTROLLED BOOM LOWERING

SAFE!

POSITIVE!



● **TO LOWER BOOM**—brake, dog and clutch are released. Boom weight causes boom hoist drum shaft to revolve in lowering direction A. This movement engages ratchet dog inside sprocket on boom hoist drum shaft B. Drum shaft drives clutch shaft through roller chain arrangement C. Clutch shaft D which is driven by engine holds back boom hoist drum shaft to same relative speed—controls lowering to speed of the engine.

Now . . .

- **RAISE OR LOWER BOOM**
- **SWING**
- **TRAVEL**
- **HOIST**

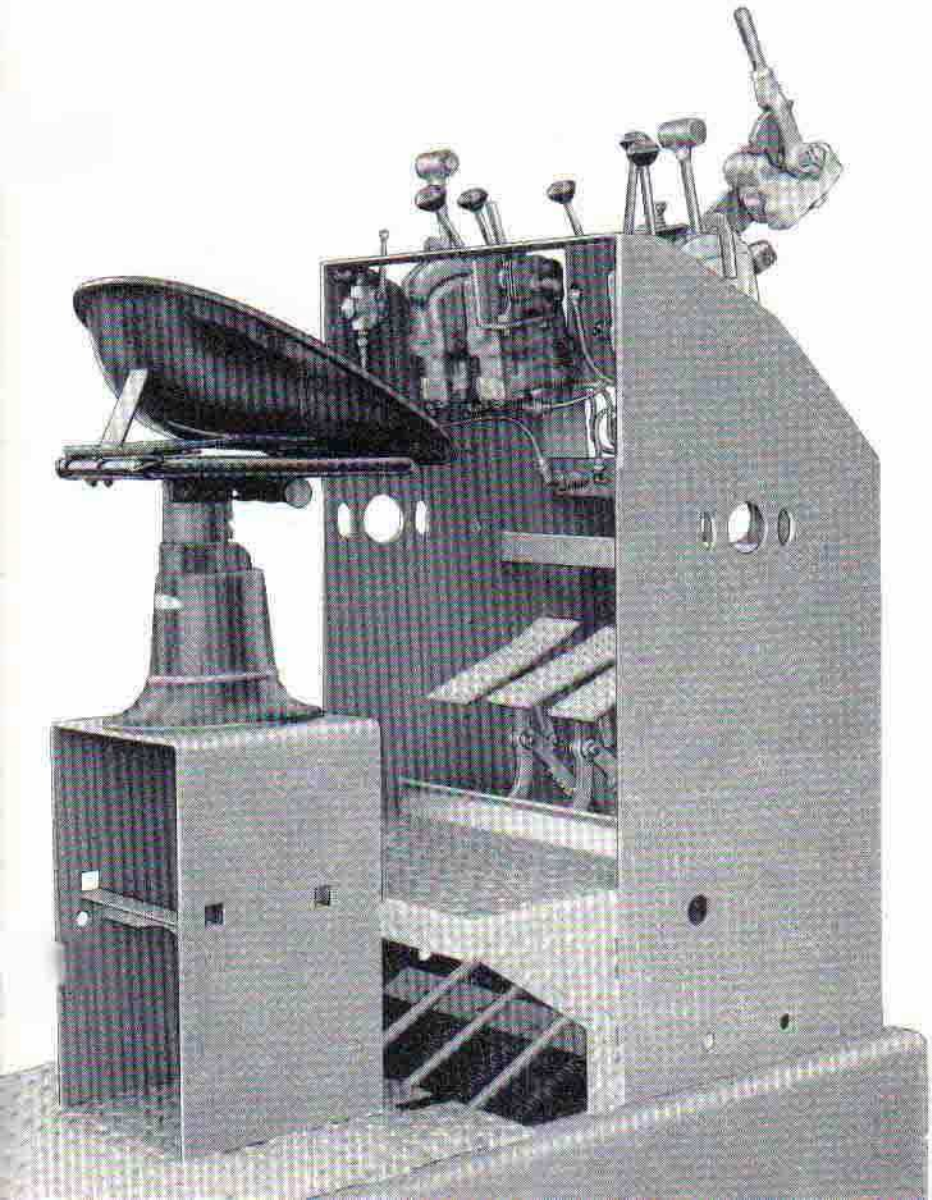
All At The Same Time!

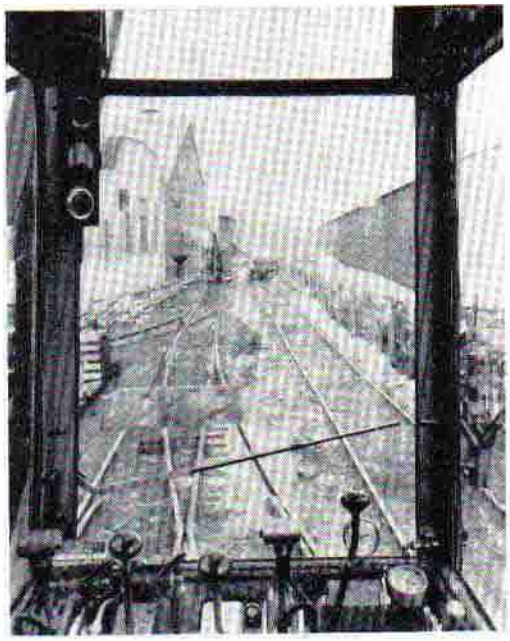
With the introduction of a friction operated boom hoist to replace older jaw type clutches, American Hoist has revolutionized Locomotive Crane operation. Now, instead of the heat producing worm gear drive, you'll find a spur gear driven boom hoist which can be used continuously over long periods of time without danger of failure.

Boom lowering speed is controlled by speed of the engine for positive, foolproof safety. An operator with this new American arrangement can raise or lower his boom while traveling, hoisting or swinging—all operations simultaneously if necessary. You can imagine the time savings made possible by eliminating stops to change boom radius—or the crane flexibility made possible by using the American boom hoist extensively. Here is another American "First" that will make money for you!

AIR CONTROLS

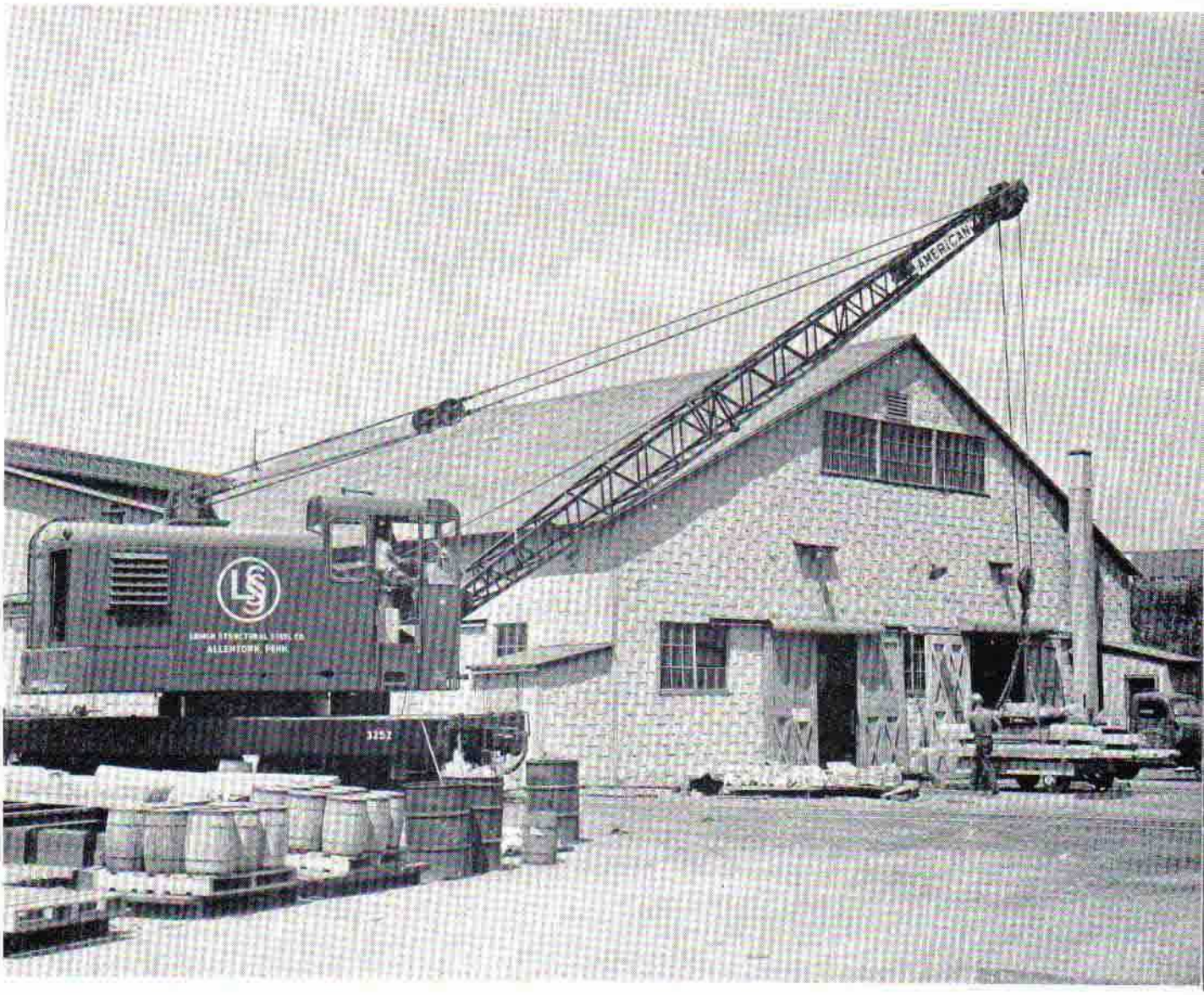
20% more production with air controls! A rested and alert operator can move 20% more material in a day. By placing all controls in a compact stand, the operator of an American DiesELectric Crane can control hoisting, swing or travel by a simple movement of his hand—his job is less fatiguing—he stays fresh, efficient and safe all day. From his wide open view cab he can see all directions with equal ease. He has "direct" view of his load at all times.



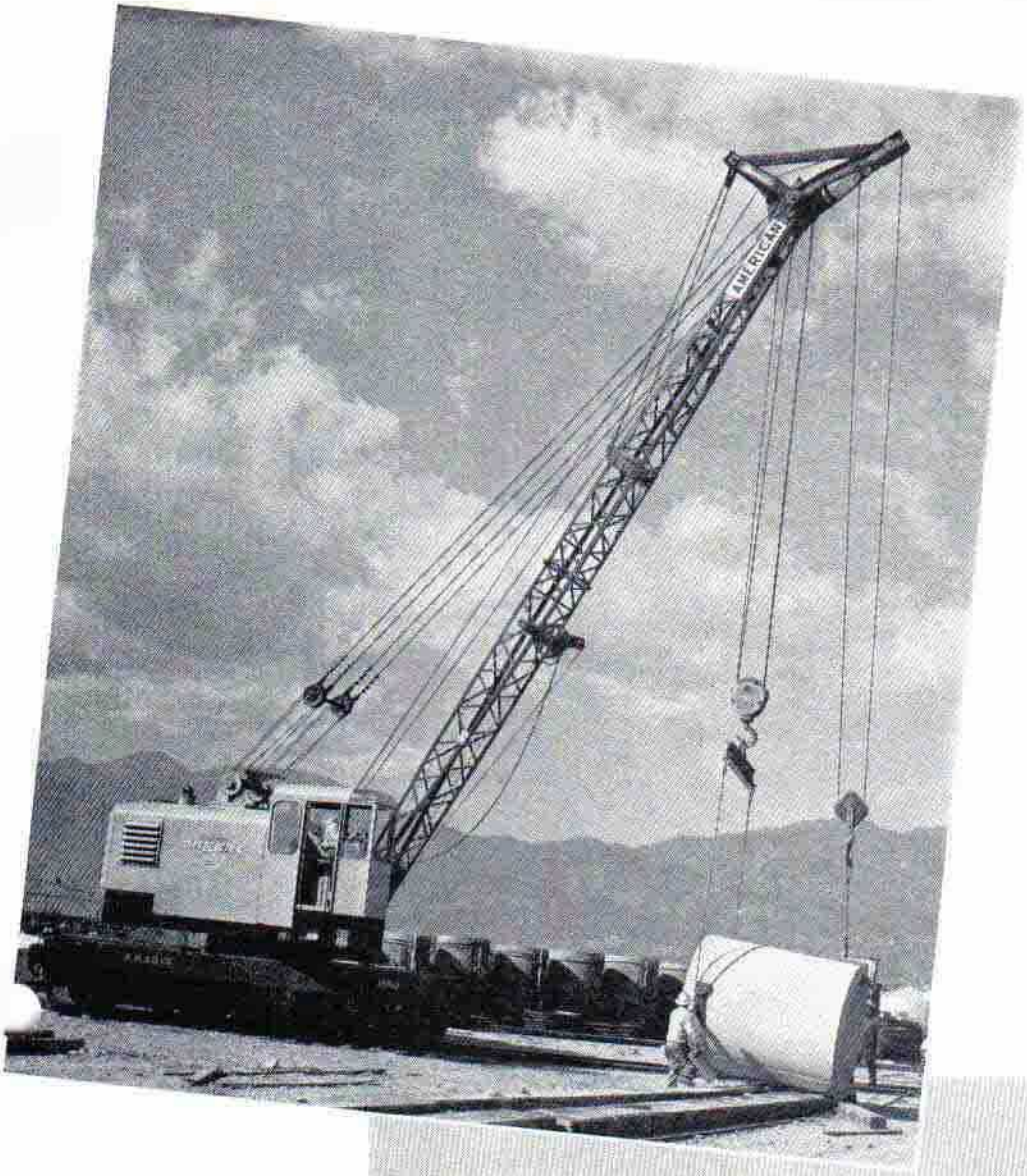


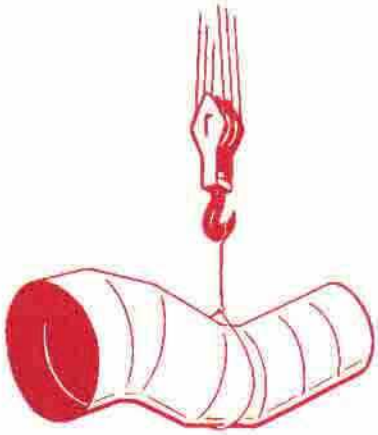
"OPERATORS EYE VIEW"
ACTUAL PHOTO FROM CAB OF AN AMERICAN LOCOMOTIVE CRANE. NOTE CLEAR VIEW OF TRACK AND LOAD.

HOOK WORK

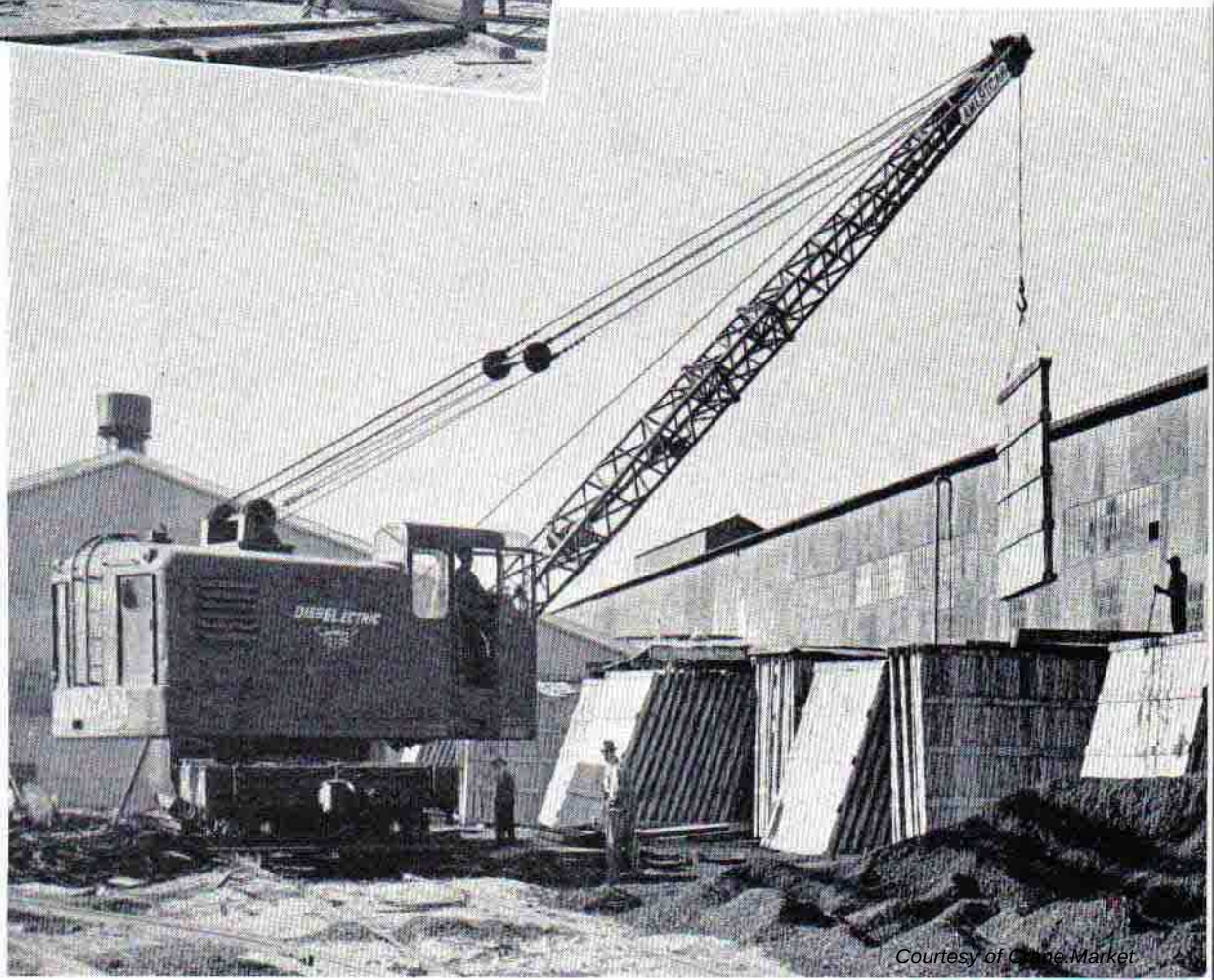


With the friction clutch boom hoist the American 825 DiesELectric has literally revolutionized locomotive crane operating methods. In performing all operations simultaneously, hair line load spotting is a reality.



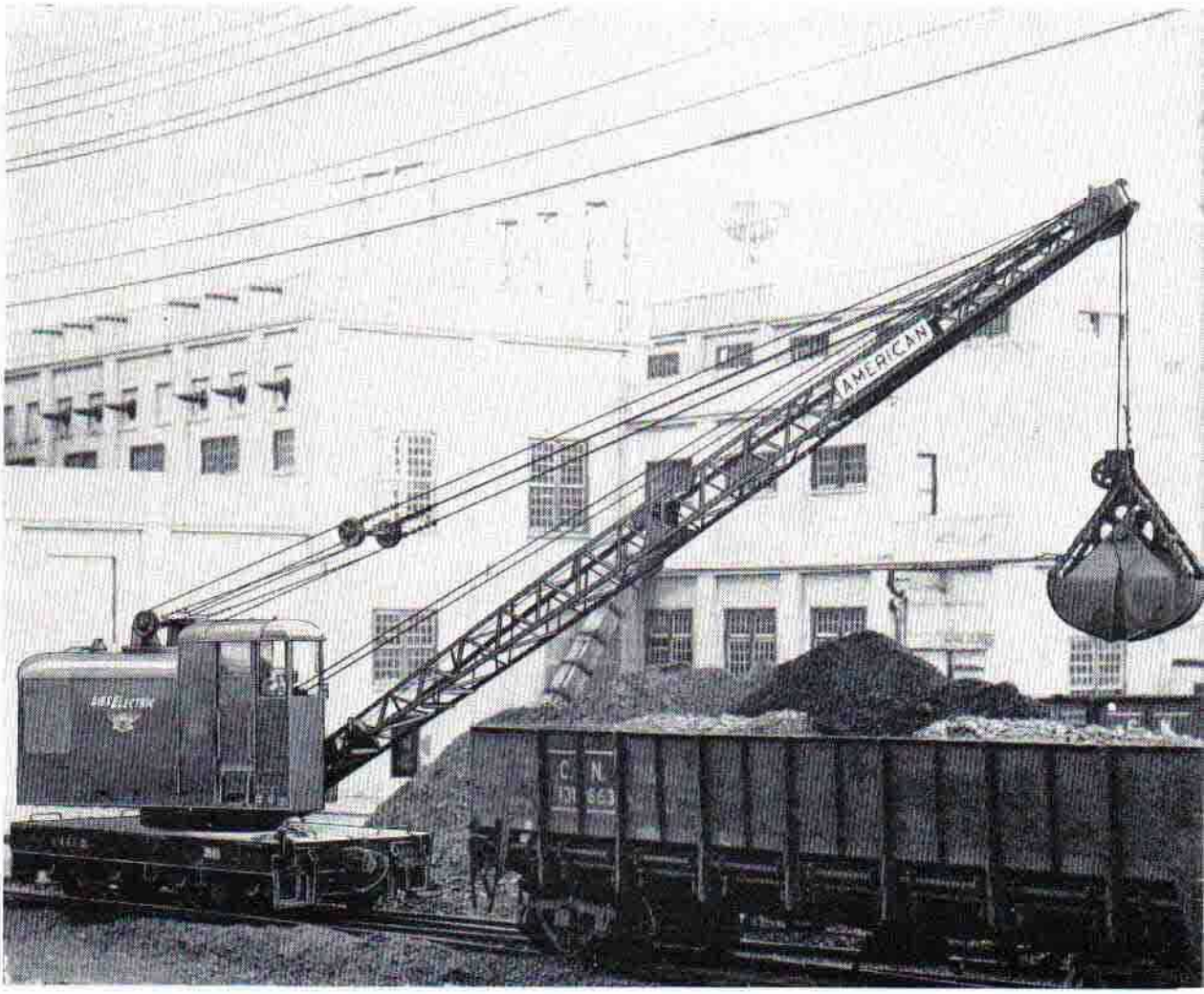


FAST
EFFICIENT
VERSATILE

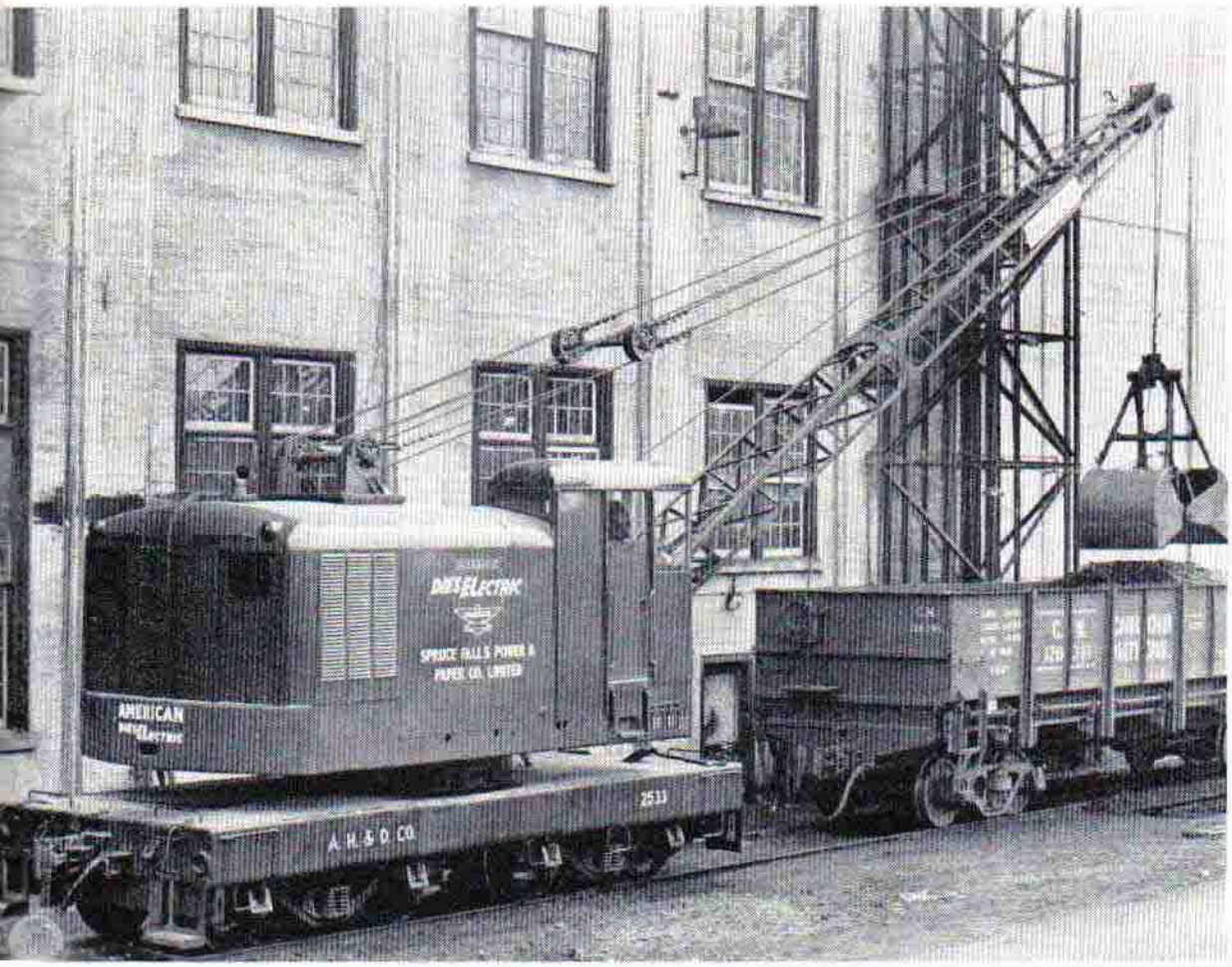


Courtesy of Crane Market

CLAM SHELL BUCKET WORK

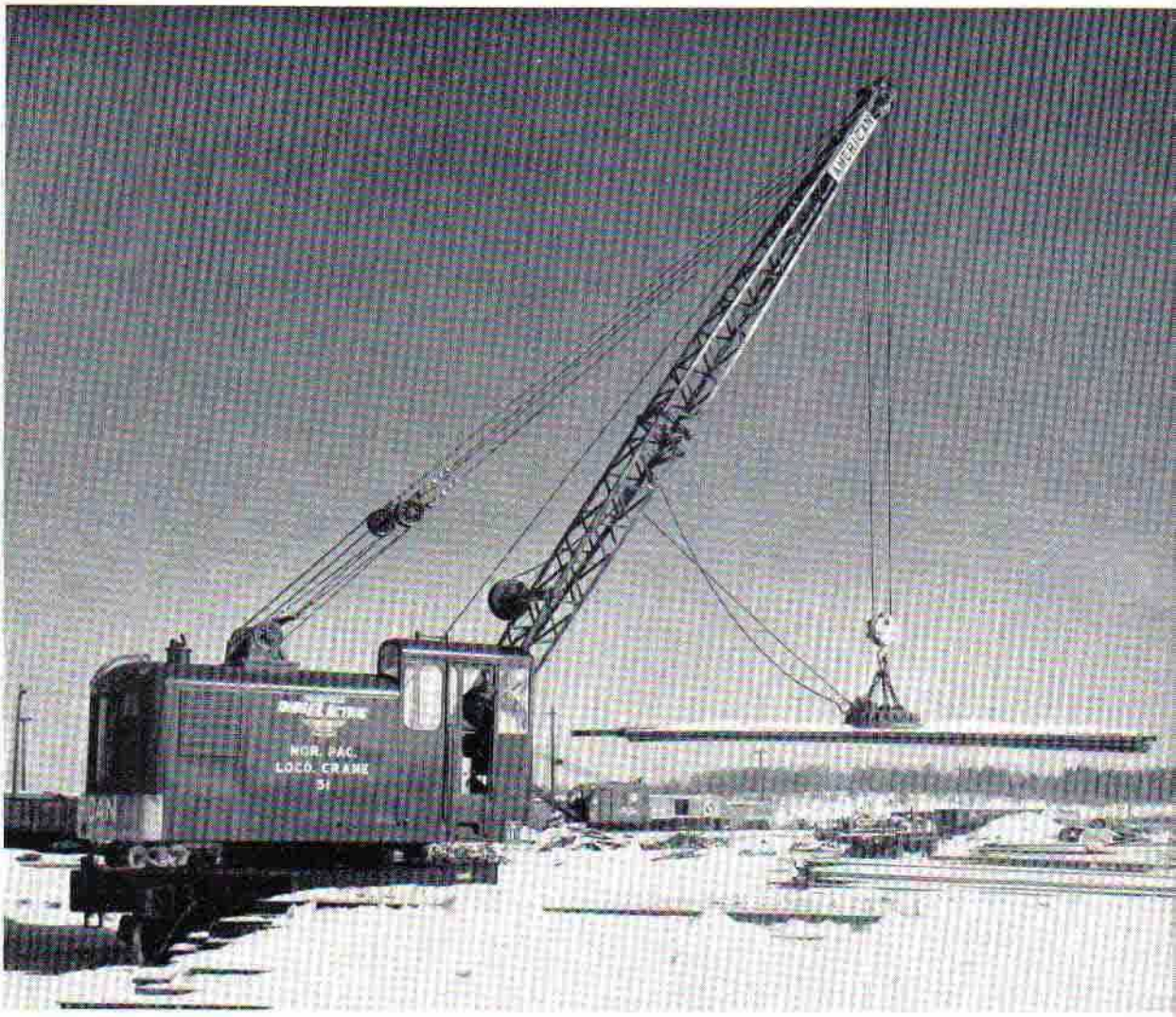


Continuous swinging on this type of work requires the speed and ruggedness of an American 825 DiesELectric. Finger tip air controls plus the "Roller Bearing" roller path arrangement assure more material handled per hour at lower cost.



Courtesy of Crane.Market

MAGNET WORK



"Tops for magnet work" say owners and operators of American 825 DiesELectric locomotive cranes. "Over excitation" of the magnet, regulated voltage generator plus a patented push button control all team up for a "bigger" day's work!

AMERICAN DIESELECTRIC® MODEL 825 DE

LOCOMOTIVE CRANE

GENERAL

SPECIFICATIONS

TRAVEL SPEED AND DRAW BAR PULL

STARTING . . . . . 12,000 lb. Draw Bar Pull
2 M. P. H. . . . . 10,000 lb. Draw Bar Pull
6 M. P. H. . . . . 3,200 lb. Draw Bar Pull
10¾ M. P. H. . . . . Standard Travel Speed

SWING SPEED . . . . . 2.5 R. P. M.

HOISTING . . . . 13,500 lb. Single Line Pull at 225 F. P. M.

CLUTCHES . Outside band with American graduated air controls

BRAKES . . . . . Outside Band — mechanically operated

LIFTING CAPACITIES

IN POUNDS

Boom Length in Feet	BOOM RADIUS IN FEET																				
	12	13	14	15	16	17	18	19	20	25	30	35	40	45	50	55	60	65	70	75	80	85
50	50000	45700	41500	38000	35000	32500	30300	28500	26500	20000	15800	13200	11000	9500	8200							
55		45300	41100	37700	34800	32300	30100	28300	26300	19800	15600	13000	10800	9200	7900	6900						
60			40800	37500	34600	32100	29900	28100	26100	19600	15400	12800	10600	9100	7800	6800	6900					
65				37300	34400	31900	29700	27900	25900	19400	15200	12600	10500	9000	7700	6700	5800	5100				
70					34200	31700	29500	27700	25700	19200	15000	12400	10400	8900	7600	6600	5700	5000	4400			
75		WITHOUT			34000	31500	29300	27500	25500	19000	14800	12300	10300	8700	7400	6400	5500	4800	4200	3600		
80		OUTRIGGERS				31300	29100	27300	25300	18800	14700	12200	10200	8600	7300	6300	5400	4700	4100	3500	3100	
85							28900	27100	25100	18700	14600	12100	10100	8500	7200	6100	5300	4500	3900	3400	2900	2900
50	50000	50000	49200	44500	41000	38000	35600	33400	31000	23400	18500	15500	12900	11100	9600							
55		50000	48700	44200	40700	38700	35400	33100	30800	23200	18200	15200	12600	10700	9200	8000						
60			48300	43900	40500	37600	35100	32900	30500	22900	18000	15000	12400	10600	9100	7900	6900					
65				43700	40300	37400	34900	32600	30300	22700	17800	14700	12300	10500	9000	7800	6800	5900				
70					40000	37100	34600	32400	30100	22500	17500	14500	12200	10400	8900	7700	6600	5800	5100			
75		WITH			39800	36800	34400	32200	29800	22200	17300	14400	12000	10200	8600	7500	6400	5600	4900	4200		
80		OUTRIGGERS				36600	34200	32000	29600	22000	17200	14300	11900	10000	8500	7300	6300	5500	4800	4100	3600	
85							33900	31700	29400	21900	17100	14100	11800	9900	8400	7100	6200	5200	4500	3900	3400	2900

Deduct 460 Pounds from Rated Capacities for 10-Ton Single Block and Swivel Hook.
Deduct 700 Pounds from Rated Capacities for 25-Ton Double Block and Swivel Hook.
Loads should not exceed 90% of those shown above for bucket or magnet work.

CLEARANCES

TAIL SWING: 10 ft. 3 in. WIDTH OVERALL: 10 ft. 8 in. HEIGHT OVERALL: 14 ft. 8½ in.
LENGTH OVER COUPLERS: 27 ft. 9 in.

AMERICAN DIESELECTRIC® MODEL 830 DE
LOCOMOTIVE CRANE

GENERAL SPECIFICATIONS

TRAVEL SPEED AND DRAW BAR PULL

STARTING . . . . . **12,000 lb. Draw Bar Pull**

Oversize traction motors can be furnished at additional cost to allow starting drawbar pull of 18,000 pounds.

2 M. P. H. . . . . . **10,000 lb. Draw Bar Pull**

6 M. P. H. . . . . . **3,200 lb. Draw Bar Pull**

10¾ M. P. H. . . . . . **Standard Travel Speed**

SWING SPEED . . . . . **2.5 R. P. M.**

HOISTING . . . . **15,000 lb. Single Line Pull at 225 F. P. M.**

CLUTCHES . **Outside Band with American graduated air controls**

BRAKES . . . . . **Outside Band — mechanically operated**

LIFTING CAPACITIES

IN POUNDS

17% overload required to tip on straight level track

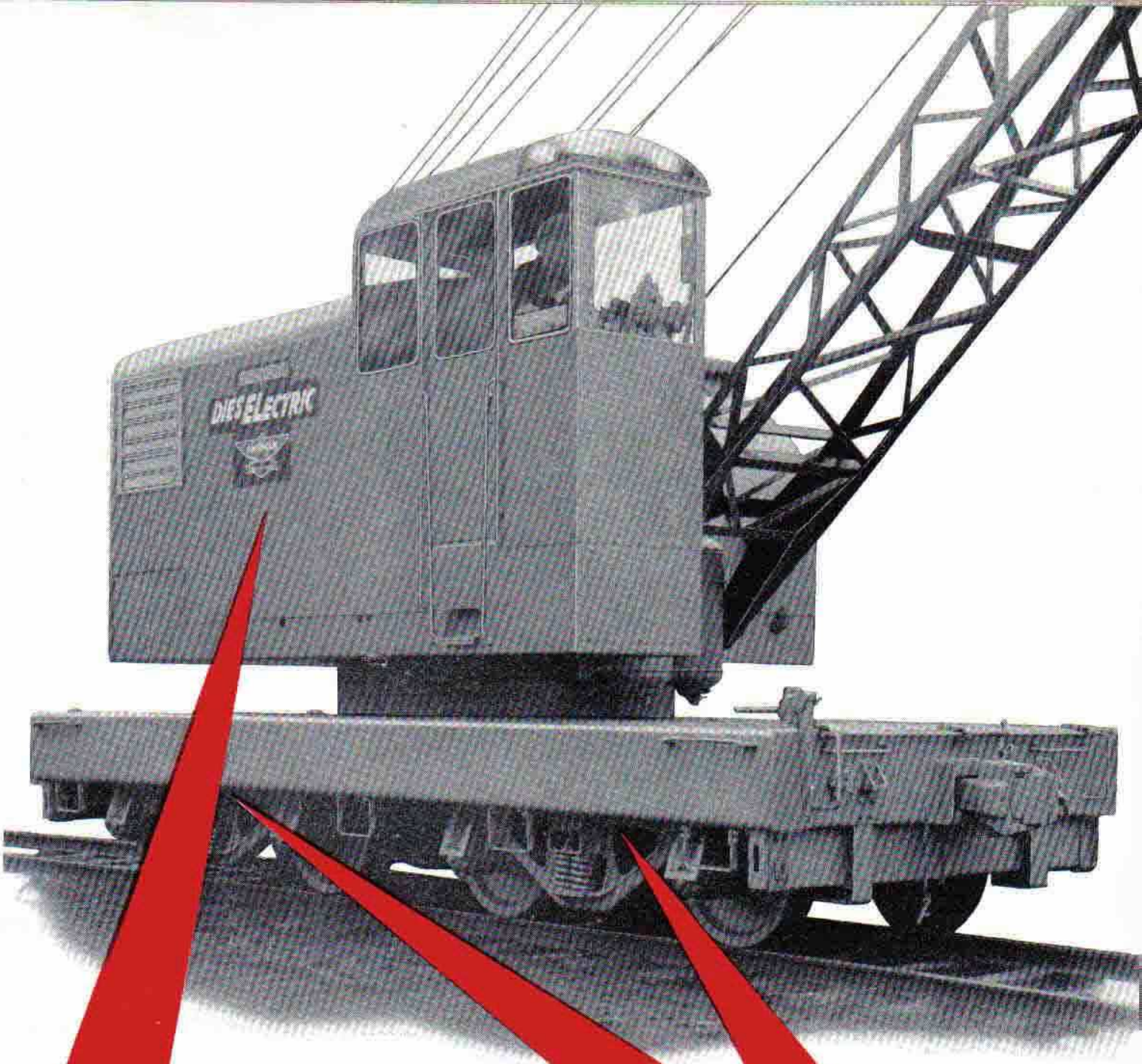
Boom Length in Feet	BOOM RADIUS IN FEET																					
	12	13	14	15	16	17	18	19	20	25	30	35	40	45	50	55	60	65	70	75	80	85
50	60000	54000	49200	45000	41400	38600	35800	33400	31600	24000	19000	15500	13000	11200	9800							
55		53700	48800	44700	41200	38200	35600	33200	31400	23700	18800	15300	12800	11000	9600	8400						
60			48500	44500	41000	38000	35400	33000	31200	23500	18600	15100	12600	10800	9400	8200	7200					
65				44300	40800	37800	35200	32800	31000	23300	18400	14900	12400	10700	9300	8100	7100	6300				
70					40600	37600	35000	32600	30800	23100	18200	14700	12200	10600	9200	8000	7000	6200	5500			
75					40400	37400	34800	32400	30600	22900	18000	14600	12100	10500	9100	7900	6900	6100	5400	4800		
80		WITHOUT				37200	34600	32200	30400	22700	17800	14500	12000	10400	9000	7800	6800	6000	5300	4700	4100	
85		OUTRIGGERS					34400	32000	30200	22500	17700	14400	11900	10300	8900	7700	6700	5900	5200	4600	4000	3500
90								31800	30000	22400	17600	14300	11800	10200	8800	7600	6600	5800	5100	4500	3900	3400
50	60000	60000	57500	52600	48400	46100	41800	39200	37500	28100	22200	18100	15200	13100	11500							
55		60000	57200	52300	48200	44700	41600	38800	37000	27700	22000	17900	15000	12900	11200	9800						
60			56700	52100	48000	44500	41500	38600	36800	27500	21800	17700	14700	12600	11000	9600	8400					
65				51900	47800	44300	41200	38400	36600	27300	21500	17400	14500	12500	10900	9500	8300	7300				
70					47500	44000	41000	38200	36300	27000	21300	17200	14300	12400	10800	9300	8200	7200	6400			
75					47200	43700	40700	37900	36100	26800	21100	17100	14100	12300	10600	9200	8100	7100	6300	5600		
80		WITH				43500	40500	37700	35800	26600	20800	17000	14000	12200	10500	9100	7900	7000	6200	5500	4800	
85		OUTRIGGERS					40200	37400	35600	26300	20700	16800	13900	12100	10400	9000	7800	6900	6100	5400	4700	4100
90								37200	35400	26200	20600	16700	13800	12000	10300	8900	7700	6800	6000	5300	4600	4000

Deduct 460 Pounds from Rated Capacities for 10-Ton Single Block and Swivel Hook.
Deduct 1000 Pounds from Rated Capacities for 30-Ton Double Block and Swivel Hook.
Loads should not exceed 90% of those shown above for bucket or magnet work.

CLEARANCES

TAIL SWING: 10 ft. 6 in. **WIDTH OVERALL: 10 ft. 8 in.** **HEIGHT OVERALL: 14 ft. 8½ in.**

LENGTH OVER COUPLERS: 27 ft. 2½ in.



1

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2

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