

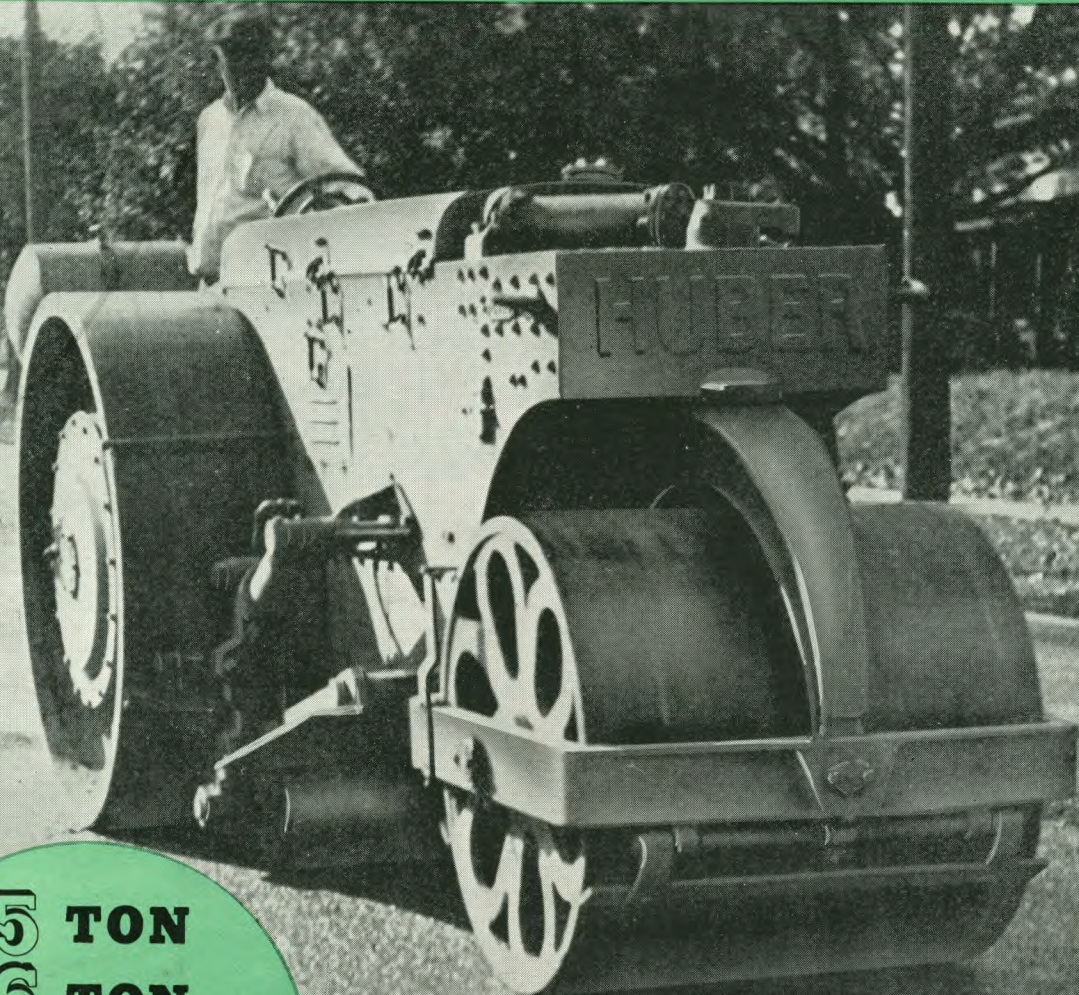
# HUBER

AUTOMOTIVE TYPE

# ROLLERS

Diesel Engine

Bulletin No. 202



**5 TON**  
**6 TON**  
**7 TON**  
**8 TON**

**THE HUBER MFG. CO. • Marion, Ohio, U. S. A.**



# THESE TWELVE FEATURES make **HUBER** *Automotive Type* **ROLLERS** **A PROFITABLE INVESTMENT**

## ONE

A Heavy Duty Four Cylinder Industrial type Caterpillar Diesel engine (with self starter) assures a steady, dependable, low cost power, with sufficient reserve power for emergency requirements. (Huber Rollers are also available with gasoline engines if desired.)

## TWO

In practically every community you will find available expert mechanics and repair parts for Caterpillar Diesel Engines.

## THREE

The transmission has four speeds forward and four reverse, also variable governor control, for each gear shift actually gives Huber Rollers several extra forward and reverse speeds which assures rapid transportation and adaptation to every rolling operation.

## FOUR

Dual Hydraulic steering allows choice between a quick and effortless power steer and a reliable hand steer, which are instantly interchangeable. (Furnished at slight additional price.)

## FIVE

Hydraulic scarifier possesses positive, trouble free action. Quick detachable scarifier teeth are made of high carbon steel which resists breakage and wear.

## SIX

Low pressure hydraulic system with belt driven pump assures freedom from leaky joints or blown out connections.

## SEVEN

Short wheel base makes roller easy to maneuver—easy to handle—easy to steer.

## EIGHT

Positive reverse of new planetary design requires practically no attention and is always ready to go . . . without shifting gears. Maintenance simplified because of unique construction.

## NINE

The improved final drive is fully enclosed and operates in a bath of oil which assures long life and reduces breakage. The final drive is readily accessible for inspection or adjustment.

## TEN

Huber rollers are 100% equipped with ball and roller bearings.

## ELEVEN

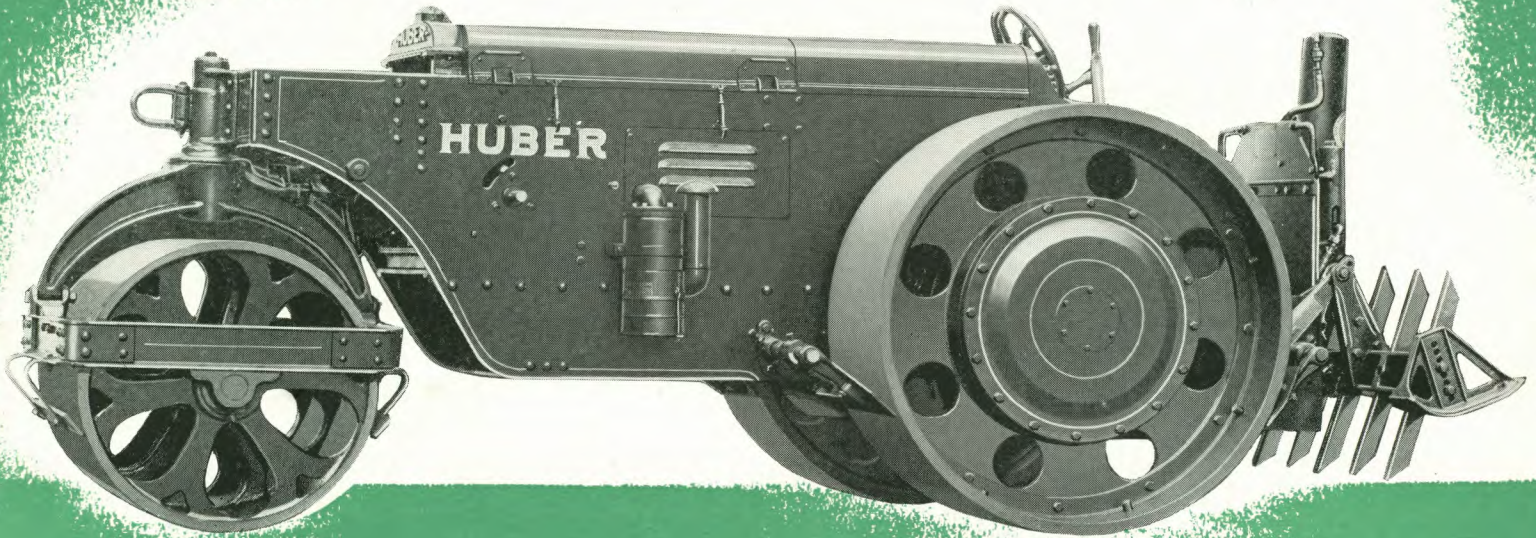
Bolted-on cast roll rims and unbreakable steel plate webs give unusual strength to rear rolls.

## TWELVE

Substantial rigid frame (without joints or springs) makes possible perfect alignment. Front end construction permits maximum flexibility.



# HUBER 5 TON ROLLER



## BUILT TO LAST

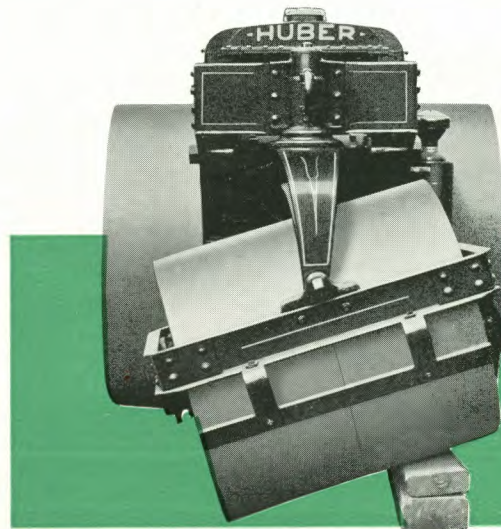
Buying a road roller is not just an everyday purchase. Sound judgment must prevail and point for point considered most seriously if a roller is to become a real dividend paying investment. That is why, on a fair and unbiased comparison, HUBER ROLLERS always win a decided preference. They are built to last—and users everywhere will bear this out.

HUBER ROLLERS are sturdy from scarifier to radiator cap. The materials entering into the construction of each roller, the mounting, as well as the frame and chassis are selected scientifically-based on Huber's Testing laboratory research — for uniform wearing qualities and maximum working strength. As a further protection against wear, anti-friction bearings are installed at every important point through the machine. Thus, wear and tear are considered to the nth degree and everything done at the start to minimize their undesirable effect.

Having a lot to do with HUBER'S unerring dependability is its substantial and common-sense design. All Huber Rollers are 100% ball and roller bearing

equipped, including hand steering shaft. Every consideration has been given to Huber Roller design to produce a roller that is easy to handle, easy to steer, convenient and comfortable for the operator and to provide lower maintenance cost for the owner.

Yes, HUBER ROLLERS are built to last—and that is why a HUBER ROLLER should be working for you.

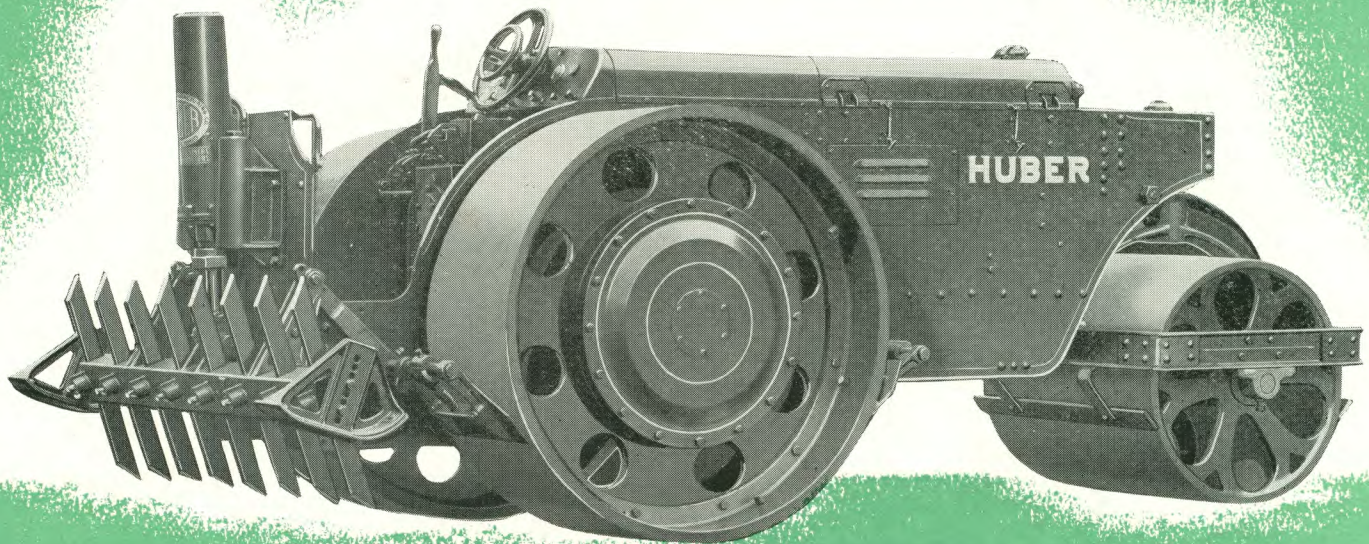


*This shows the flexibility of Huber's front end construction.*

*No side pitching of front end. No undue strain on king pin.*



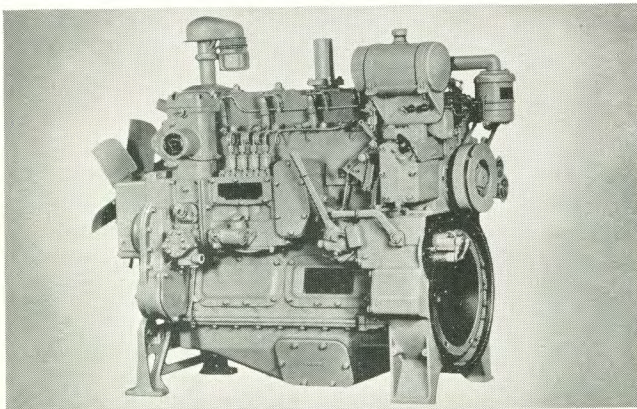
# HUBER 6 TON ROLLER



## PLENTY OF POWER AND SPEED

The sturdy Caterpillar four cylinder, full Diesel engine used in Huber Rollers is the same type used in heavy crawler tractor service. The bore and stroke are  $3\frac{3}{4}$ " x 5" in the 5 and 6 Ton and  $4\frac{1}{4}$ " x  $5\frac{1}{2}$ " in the 7 and 8 Ton. Piston displacement is 221 cu. in. and 312 cu. in. respectively.

These engines are provided with large bearing areas – the five main bearings on the crankshafts being  $2\frac{3}{4}$ " and 3" dia. respectively, the crankpin bearings being



*A heavy duty 4 cylinder Diesel engine provides steady power without vibration.*

$2\frac{5}{8}$ " dia. in both instances. Full pressure lubrication assure full protection to all moving parts. The cooling system consists of a built in water circulating pump and belt driven fan. The fuel system is comprised of individual injection pumps and single orifice type injection valves and fuel transfer pump. The starting system is made up of an independent 2-cylinder, horizontal opposed, 4 cycle engine.

These Diesels are oversize engines made to stand the hardest kind of service.

It uses cheap fuel assuring plenty of reserve power for every contingency.

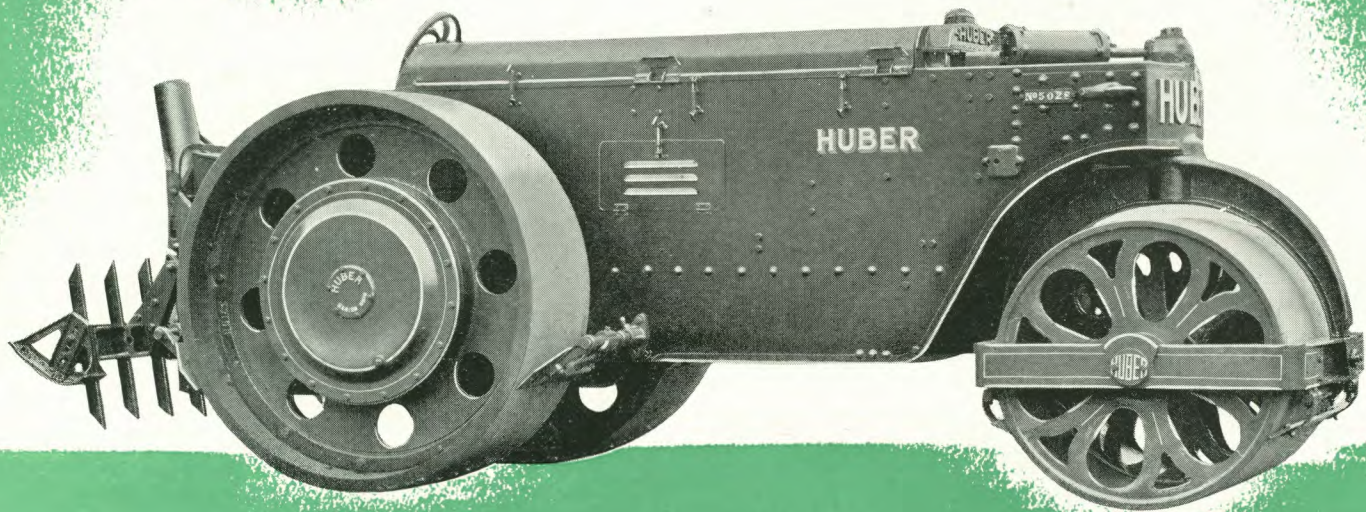
### FOUR SPEEDS FORWARD-FOUR SPEEDS REVERSE

Speed ranging from less than a mile per hour to more than ten miles per hour (under governor control) is possible with the HUBER'S four speeds forward and four reverse – giving it a flexibility which permits rapid transport as well as adaptability to any rolling operation.

Large contracting brakes in each drive roll – operated by foot pedal – perform both service and emergency braking functions and will hold the HUBER in any working position.



# HUBER 7 TON ROLLER



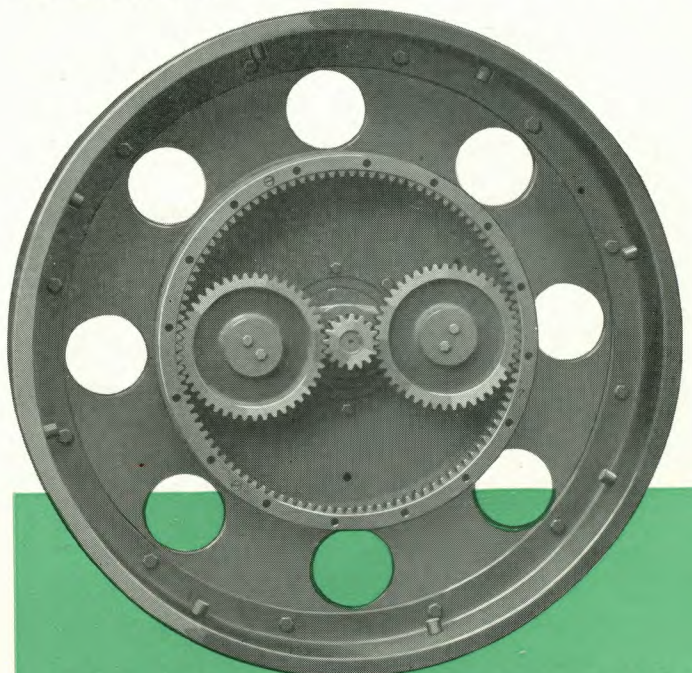
## THE HUBER TRANSMISSION FORWARD AND REVERSE

The original Huber feature of forward and reverse without shifting gears is maintained in this design through the use of the combination of a large diameter Twin Disc clutch and an improved, roller bearing mounted planetary system that is actuated by a contracting band clutch. Both clutches are operated by a single, short control lever on deck and both are disengaged when the lever is in neutral position. Rate of travel in both forward and reverse motions is at the same speed and the start in both directions is slow and cushioned to prevent the rear rolls "kicking" and marring the surface being rolled. The entire assembly with the exception of the Twin Disc clutch is enclosed in a dust proof case and operates in a bath of oil.

This simple Huber direction control is durable, positive and quiet. Fewer and less frequent adjustments are required than on the conventional type of roller reversing mechanism and when clutch adjustments are necessary they are easily and quickly made from outside the case.

The final drive is a unique HUBER feature - a substantial, positive drive, entirely enclosed and operating in a bath of oil. The mechanism is the same in both drive rolls. The full floating rear axle extends through a heavy steel tube on which rear rolls are mounted. A pinion on the end of the axle mesh-

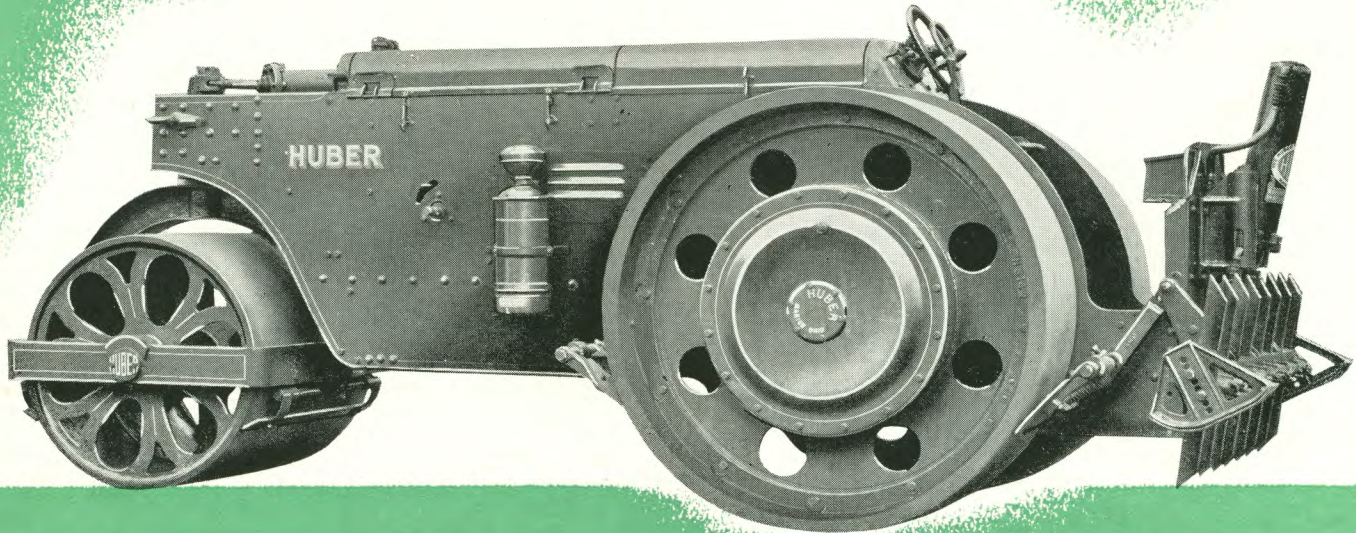
es into twin intermediate gears and these mesh into a steel bull gear securely bolted to the outside of the web of the rear drive roll. In order to get at the assembly for inspection or adjustment, it is only necessary to remove a plate from the outside hub of the roll. It is not necessary to remove a rear roll to get at the final drive.



*Improved Final Drive—Lower Tooth Pressures—Longer Life—Accessibility.*

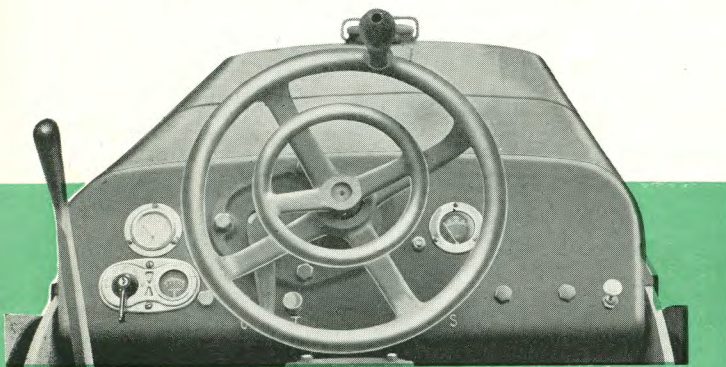


# HUBER 8 TON ROLLER



## QUICK, EASY OPERATION

All Huber Automotive Type Motor Rollers are endowed with quick response to the controls—plenty of “follow-thru” due to its ample power plant—and ease of operation. These things enable an operator to pay strict attention to the job rather than the machine itself. They also mean a good day’s work at the lowest possible operating cost. Other desirable features follow.



*Huber's Dual Hydraulic Steering provides Effortless Power Steering plus accurate Hand Steering.*

### DEMOUNTABLE RIMS

The cast iron rims of rear rolls are bolted to the outside of the heavy steel plate that serves as spokes or spacer between hub and rim. Rims may be removed without disturbing balance of roll assembly.

### A DIFFERENTIAL THAT ASSURES EQUAL LOAD DISTRIBUTION

Power is distributed equally to both rear rolls through a differential built into the transmission . . . which may be rendered inoperative if desired with a lock controlled by a foot pedal on the roller platform. All gears and shafts are machined from forged alloy steel—heat treated and ground—and are fully enclosed and operate in oil. Ball and roller bearings are used throughout, eight heavy duty roller bearings—two in each rear roll and two in each front roll section—supporting the mounting. These mounting bearings require no adjustment.



## DUAL HYDRAULIC STEERING

(Extra Optional Equipment)

The operator of a HUBER has instant choice between power steering and hand steering if his roller is ordered with the dual steering equipment illustrated on page 6. Power steering eliminates the hardest work incidental to the operation of a roller by doing the steering without any effort on the part of the operator other than turning the smaller steering wheel illustrated, in the direction he desires to go. This smaller steering wheel is attached to a valve controlling an engine driven pump which furnishes "steering power" through a hydraulic connection. When the wheel is released it automatically returns to neutral.

To change from power to hand steering, merely switch the hand to the larger steering wheel. The hand steering is also hydraulic, but is entirely independent of the power steering, although the same pressure cylinder is utilized. The hand steering mechanism will operate regardless of whether the engine is running and may be used exclusively if operator so desires.

Unless otherwise specified, all Huber Motor Rollers are regularly equipped with conventional worm and segment gear hand steering.

## OPERATING CONTROLS

The HUBER'S forward and reverse lever for changing direction without shifting gears, the change speed lever, differential lock, brake, steering, spark and throttle, scarifier control, etc., are conveniently located for quick, easy operation, while oil pressure gauges for both the engine and hydraulic system, as well as ammeter and switch are in plain view of the operator.

## HYDRAULIC CONTROLS

The outstanding success of HUBER'S hydraulic roller control is largely due to the patented valve developed by HUBER engineers. This valve is so constructed that there is no pressure against the pump except at the moment oil is being forced into the operating cylinder. As soon as the desired pressure or position is reached, the pressure is trapped between valve and cylinder, a by-pass relieving the balance of the system of all pressure. Over-size piping and cylinders make it possible to operate the system at comparatively low pressures. Because of the by-pass valve, the automatic pressure relief and the normal low pressure carried, leaky joints and blown out connections rarely occur in the HUBER hydraulic System.

The large capacity geared oil pump is belt driven direct from the engine crankshaft. Should the system become clogged, preventing operation of the automatic pressure relief, the cushioned belt drive will prevent the damage that might otherwise be caused by a gear-driven pump.



*The 5 Ton HUBER Automotive Type Motor Roller.*



*The 6 Ton HUBER Automotive Type Motor Roller.*



*The Huber Automotive Type Motor Roller: above—the 7 Ton; below—the 8 Ton.*





# HUBER SCARIFIER

HUBER hydraulics permit far more satisfactory scarifier operation than is possible with compressed air. The maximum pressure is maintained and the depth controlled merely by trapping the necessary volume of liquid in the scarifier cylinder and holding it there. Since fluid will not further compress to provide a cushion as does steam or air, a cushion must be arranged. The HUBER scarifier cylinder is supported by two heavy coil springs with provision for varying the tension as required. This cylinder spring mounting also relieves the piston rod from side strain, the arrangement of the springs allowing the cylinder to tip side-wise if one end of bar has severe shock. The gauge shoes provided at the ends of the bar are really not needed by a careful operator who can control the depth by the amount of fluid admitted to the cylinder and held there.

Quick detachable teeth constitute a convenient feature of the HUBER scarifier. Each tooth is firmly held by a separate plunger and spring, permitting a single tooth or the entire set to be reversed or removed in a few minutes' time—without the use of a wrench. Teeth have multiple notches for scarifying at various depths and for allowing adjustments to compensate for uneven wear. Scarifier parts are made of high grade steel, assuring long life and dependable service.

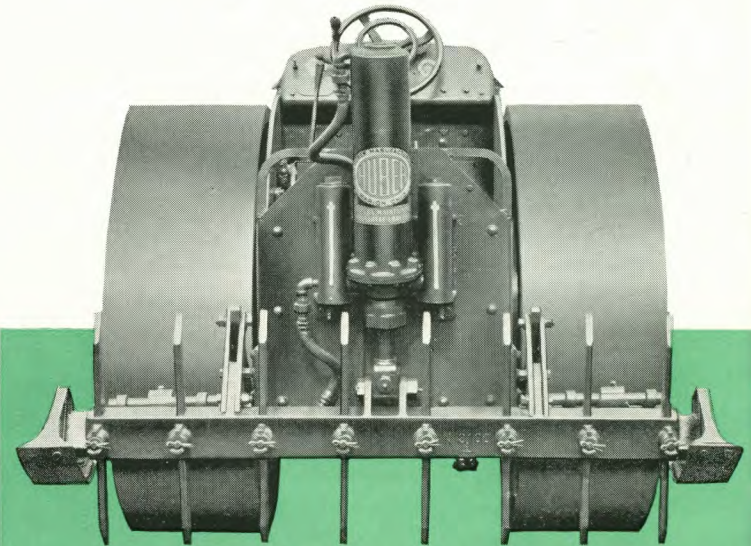
## HUBER ROLLS

### RESIST BREAKDOWN AND ABRASION

Front rolls and rear roll rims are cast of special grade of iron which resists breakage and abrasion.

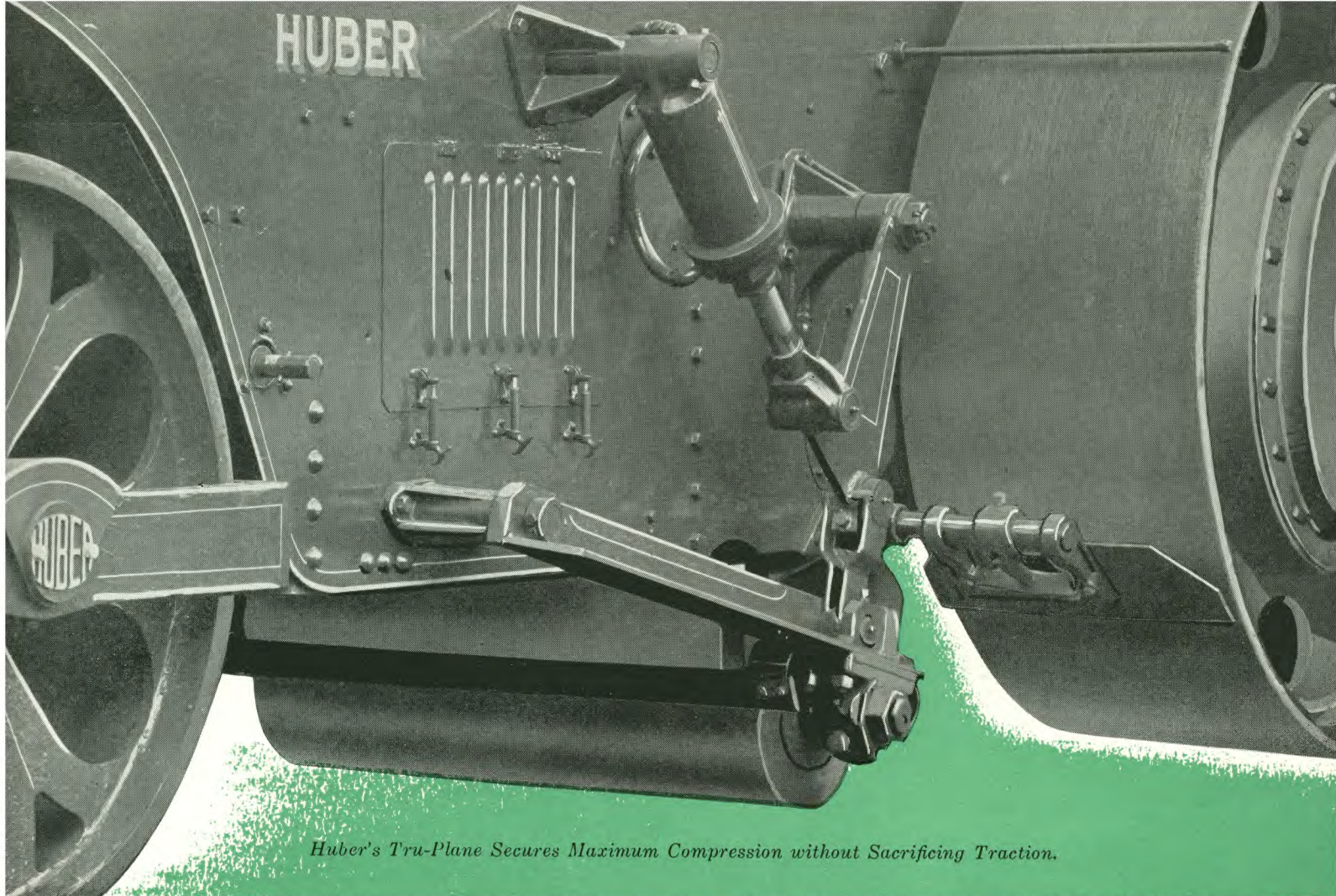
All roll surfaces are turned true to size and shape. Rear rolls will be furnished either flat or chamfered as ordered, and front rolls are tapered back slightly at outer edges so as to leave no marks on the surface of a finishing operation. Each front roll is cast as a unit with cast web spokes, while rear rolls have a heavy steel web with cast rim bolted on. Spikes are furnished for use in rear roll rims which are made with plugged holes for their utilization, and adjustable scrapers for both front and rear rolls are provided.

The HUBER front roll mounting with its short, stout arch casting pivoting on the front roll frame makes possible short turning and permits the front roll frame to oscillate freely, so that the front of roller is not pitched from side to side when the going proves rough.



*Showing the Huber Hydraulic Scarifier attached to a Huber Roller. Available for 5, 6, 7 and 8 Ton Rollers.*





*Huber's Tru-Plane Secures Maximum Compression without Sacrificing Traction.*

# HUBER TRU-PLANE

**LEVELS OUT HIGH SPOTS AND WRINKLES AS NO OTHER ROLLER CAN (Extra Optional Equipment)**

(Cannot be supplied on 5 and 6 ton sizes.)

An indispensable feature of the new Huber 7 and 8 ton Motor Roller is the Huber TRU-PLANE which does its work remarkably well during each stage of road construction.

The Huber TRU-PLANE as the name implies, levels out high spots for immediate bonding, and straightens out wrinkles, all to a perfect smoothness. It is a cost saver, too, as it reduces rolling time as well as cross or diagonal rolling with its resultant unevenness of edges.

The Huber TRU-PLANE is properly located just ahead of rear rolls to secure maximum compression without sacrificing traction on the rear rolls. Because of the distinct advantage over the conventional swing type construction, the "elbow" method of operation is used. The Huber TRU-PLANE roll travels straight up

or down and does not swing ahead to relieve compression. For example, in rolling soft material and there is a desire to relieve the pressure somewhat from the third roll, the Huber TRU-PLANE roll can be raised vertically as compared to the conventional method of swinging against the material.

The Huber TRU-PLANE gives stability to every kind of pavement to which it is applied - and adds materially to the desirability of the new Huber Roller.

A mere touch of a lever drops the hydraulically operated TRU-PLANE into action - to give extra smoothness - extra compaction to all kinds of road surfaces with fewer rolling operations. Available on 7 ton size and larger.





*Huber Automotive Type Motor Rollers have an enviable reputation for easy handling, easy steering.*



*Huber Automotive Type Motor Rollers are streamlined to the job. They are well balanced and modern in every detail.*

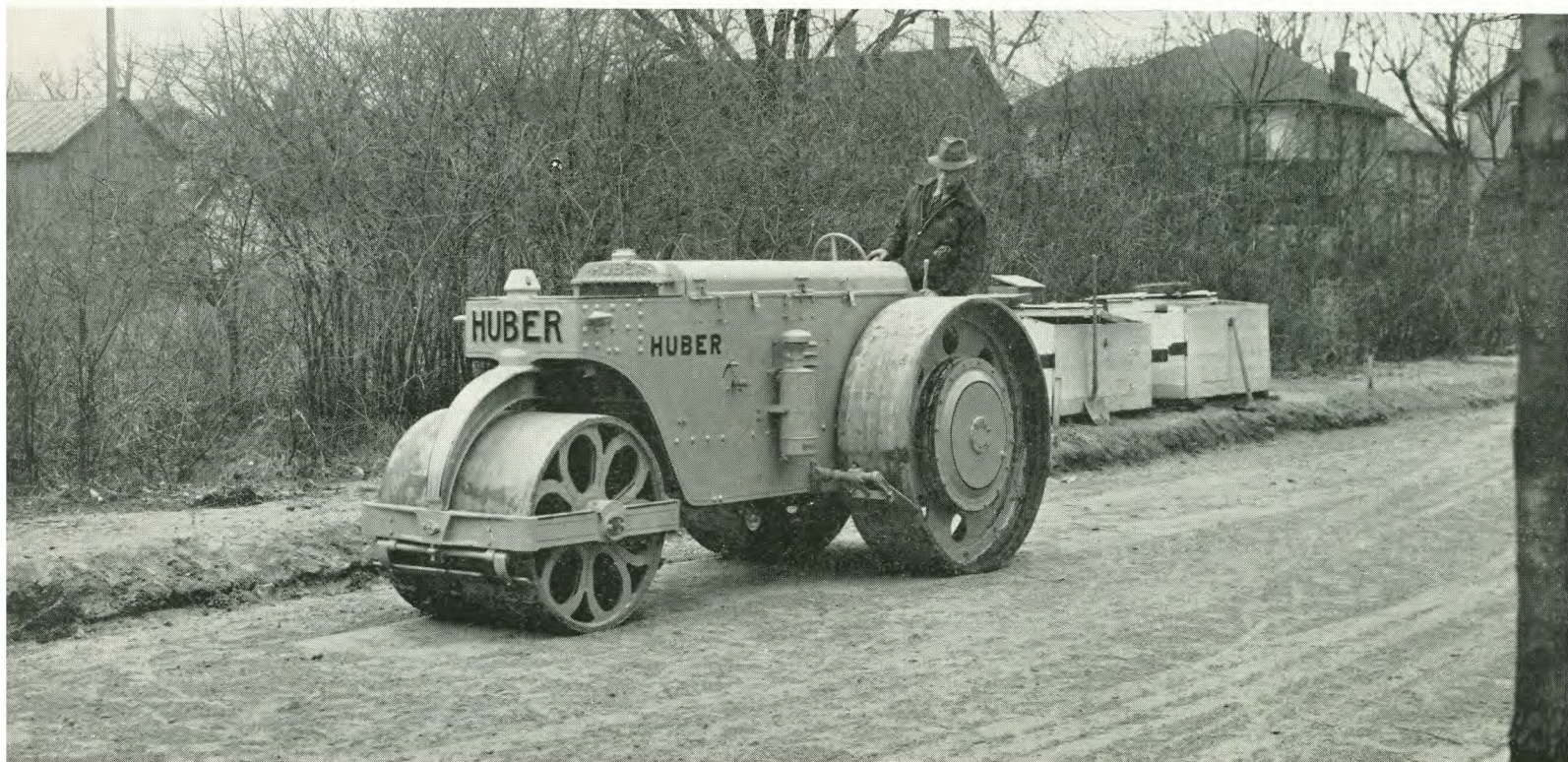
## **OTHER HUBER ROLLER ATTACHMENTS**

(Available at Reasonable Extra Cost)

**ELECTRIC LIGHTS** with generator and battery.

**ROLL SPRINKLING ATTACHMENT**, including 50 gallon tank (larger if specified) to supply water to rear and front rolls to prevent hot surfacing material from sticking.

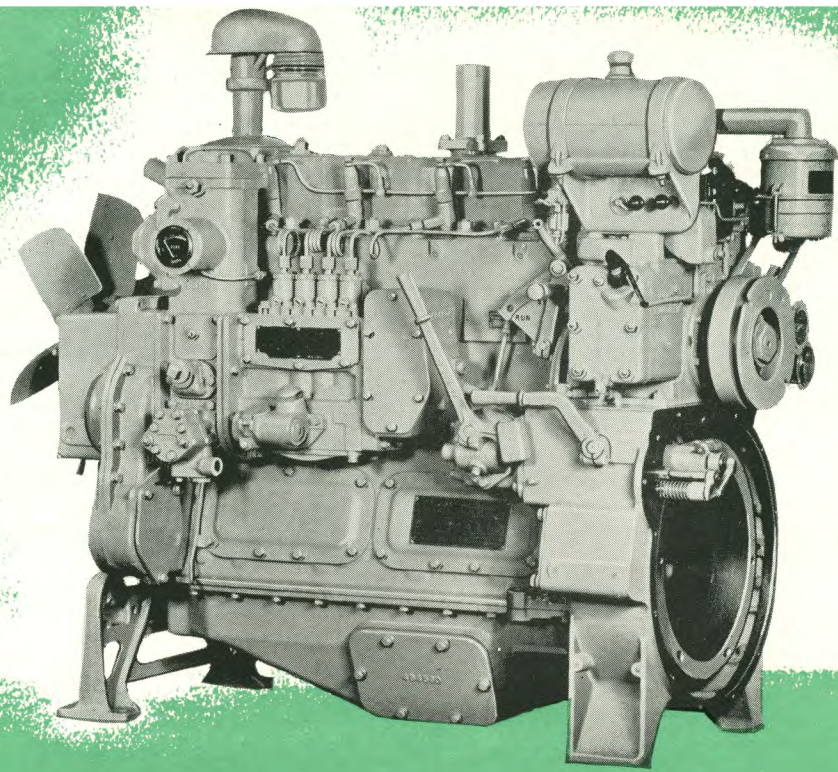
**CAB AND CURTAINS** . . . A sturdy steel cab over operator's deck with or without canvas curtains. Curtains may be rolled when not in use.



*Huber Automotive Type Motor Rollers are quick to respond to the responsibility ahead of them. They are built for long life service. They are economical to operate—to own.*



The Caterpillar D3400 Diesel Engine for 5 and 6 Ton and the D4400 for the 7 and 8 Ton provides Huber Diesel Equipped Rollers with economical fuel consumption—low cost operation—plenty of reserve power for the unexpected obstacles.



# HUBER DIESEL ROLLER

## SPECIFICATIONS

### 5 AND 6 TON

|   |                                      |
|---|--------------------------------------|
| Number of cylinders.....                  | 4                                    |
| Stroke cycle.....                         | 4                                    |
| Bore and stroke.....                      | 3 <sup>3</sup> / <sub>4</sub> " x 5" |
| Piston displacement.....                  | 221 cu. in.                          |
| Governed full load R. P. M.....           | 1200                                 |
| Piston speed.....                         | 1000 F. P. M.                        |
| N.A.C.C. horsepower for tax purposes..... | 22.5                                 |
| Valve arrangement.....                    | In Head                              |
| Air cleaner.....                          | Donaldson                            |
| Fuel.....                                 | Commercial Diesel Fuel               |

Crankshaft Bearings—Five main bearings, diameter 2<sup>3</sup>/<sub>4</sub>", total bearing surface 80.3 sq. in. Crankpin bearings, diameter 2<sup>5</sup>/<sub>8</sub>".

Lubrication—Full pressure. Double pump. Capacity of crankcase 13 qts.

Cooling System—Built in water circulating pump and belt driven fan. Capacity with radiator 7<sup>3</sup>/<sub>4</sub> gallons.

Fuel System—Individual injection pumps and open, single orifice injection valves. Fuel transfer pump.

Starting Method—Independent, two-cylinder, horizontal opposed four cycle gasoline engine equipped with high tension magneto, down draft carburetor and flyball governor. Bore 2<sup>3</sup>/<sub>4</sub>". Stroke 3". 10 H. P. at 3,000 R.P.M. Drive by multiple disc clutch and helical gears to flywheel.

### 7 AND 8 TON

|   |   |
|---|---|
| Number of cylinders.....                  | 4   |
| Stroke cycle.....                         | 4   |
| Bore and stroke.....                      | 4 <sup>1</sup> / <sub>4</sub> " x 5 <sup>1</sup> / <sub>2</sub> " |
| Piston displacement.....                  | 312 cu. in.   |
| Governed full load R. P. M.....           | 1200  |
| Piston speed.....                         | 1100 F. P. M.   |
| N.A.C.C. horsepower for tax purposes..... | 28.9  |
| Valve arrangement.....                    | In head   |
| Air cleaner.....                          | Donaldson   |
| Fuel.....                                 | Commercial Diesel Fuel  |

Crankshaft Bearings—Five main bearings, diameter 3", total bearing surface 89.5 sq. in. Crankpin bearings, diameter 2<sup>5</sup>/<sub>8</sub>".

Lubrication—Full pressure. Double pump. Oil Cooler. Capacity of crankcase 16 qts.

Cooling System—Built in water circulating pump and belt driven fan. Capacity with radiator 11 gallons.

Fuel System—Individual injection pumps and single orifice type injection valves. Fuel transfer pump. Fuel tank capacity (on power units) 24 gallons.

Starting Method—Independent, two-cylinder, horizontal opposed four cycle gasoline engine equipped with high tension magneto, down draft carburetor and flyball governor. Bore 2<sup>3</sup>/<sub>4</sub>". Stroke 3". 10 H. P. at 3,000 R.P.M. Drive by multiple disc clutch and helical gears to flywheel.



# HUBER SPECIFICATIONS

## 5-6-7-8 TON ROLLERS



### 5 TON - 6 TON

**ENGINE** . . . Caterpillar D-3400 (see page 11) Four cylinder Diesel, water cooled, bore  $3\frac{3}{4}$ " , stroke 5" , 32 H. P. at 1200 R. P. M.

**TRANSMISSION** . . . Heat treated and ground steel gears and shafting. Entire transmission including final drive completely enclosed and run in bath of oil. Ball and roller bearings used throughout. Built-in differential lockable from platform.

**SPEEDS** . . . Four speeds each direction controlled through Twin Disc clutch and planetary gears. Rate of travel in m.p.h. at normal engine speed: Low, 1.5; Second, 3.11; Third, 4.5; High, 9.7. Same rate of travel forward and reverse—single lever control.

**REAR ROLLS** . . . Steel plate web with removable rims. Diameter, 52" , face, 18" . Wider face up to 22" available at additional charge.

**FRONT ROLLS** . . . Two rolls, diameter 34" , total face 37" . Front rolls overlap rear rolls  $2\frac{3}{4}$ " on each side.

**REAR AXLE** . . . Full floating type relieved of all carrying strain. Each rear wheel mounted on two straight roller bearings, 3-15/16" inside diameter.

**FRONT AXLE** . . . One piece alloy steel, 3" diameter. Each front roll mounted on two roller bearings.

**BRAKES** . . . An equalized contracting brake attached to each rear roll, operated by foot pedal and performing both service and emergency functions.

**OVERALL DIMENSIONS** . . . Total Height to top of hood, 72" ; Total Length without Scarifier, 157" , with Scarifier attached, 171" ; Rolling Width,  $67\frac{1}{2}$ " with 18" rolls; Wheel Base, 97" ; Turning Radius,  $14\frac{1}{2}$  ft.; Ground Clearance, 12" .

### 7 TON - 8 TON

**ENGINE** . . . Caterpillar D-4400 (see page 11) Four cylinder Diesel, water cooled, bore  $4\frac{1}{4}$ " , stroke,  $5\frac{1}{2}$ " , 45 H. P. at 1200 R. P. M.

**TRANSMISSION** . . . Heat treated and ground steel gears and shafting. Entire transmission including final drive completely enclosed and run in bath of oil. Ball and roller bearings used throughout. Built-in differential lockable from platform.

**SPEEDS** . . . Four speeds each direction controlled through Twin Disc clutch and planetary gears. Rate of travel in m.p.h. at normal engine speed: Low, 1.5; Second, 3.11; Third, 4.5; High, 9.7. Same rate of travel forward and reverse—single lever control.

**REAR ROLLS** . . . Steel plate web with removable rims. Diameter 60" , Face, 18" . Wider face up to 22" available at additional charge.

**FRONT ROLLS** . . . Two rolls, diameter 40" ; total face, 39" . Front rolls overlap rear rolls  $3\frac{1}{2}$ " on each side.

**REAR AXLE** . . . Full floating type relieved of all carrying strain. Each rear wheel mounted on two straight roller bearings, 3-15/16" inside diameter.

**FRONT AXLE** . . . One piece alloy steel, 3" diameter. Each front roll mounted on two roller bearings.

**BRAKES** . . . An equalized contracting brake attached to each rear roll, operated by foot pedal and performing both service and emergency functions.

**OVERALL DIMENSIONS** . . . Total Height to top of hood  $76\frac{1}{2}$ " ; Total Length without Scarifier,  $181\frac{1}{2}$ " ; with Scarifier attached, 195" ; Rolling Width, 68" with 18" rolls; Wheel Base, 112" ; Turning Radius, 15 ft.; Ground Clearance, 12-13/16" .

# THE HUBER MANUFACTURING CO.

## MARION, OHIO, U. S. A.

Branch Offices Located at

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Indianapolis, Ind.

Harrisburg, Pa.  
Marion, Ohio

Lansing Mich.  
Peoria, Ill.

PRINTED IN U S A