

NORDBERG Hydraulic POWER JACK

NORDBERG

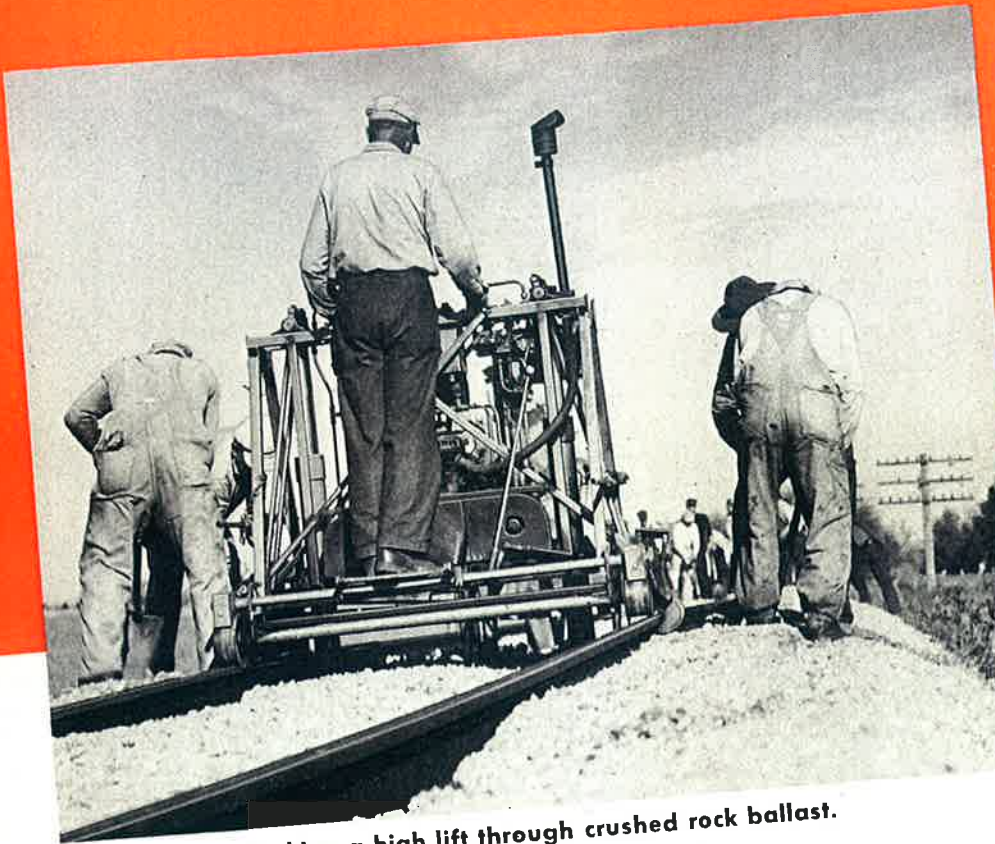


MACHINERY

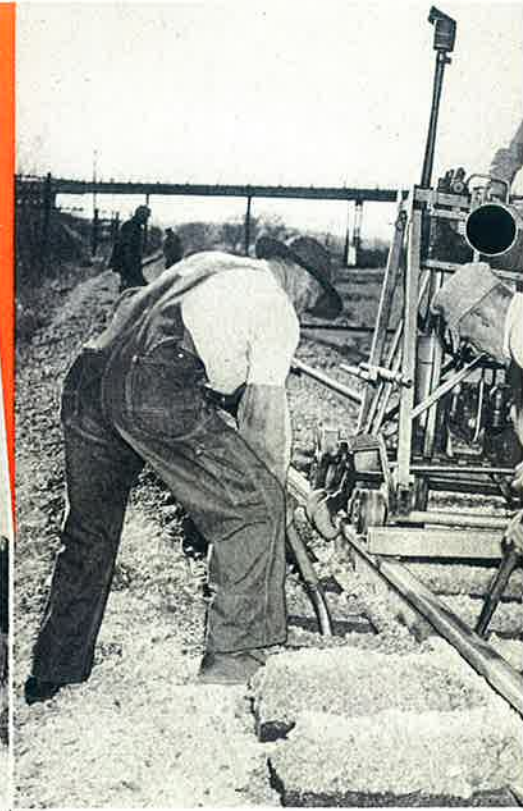
Bulletin 138



NORDBERG MFG. CO.
MILWAUKEE 7, WISCONSIN



Making a high lift through crushed rock ballast.



Here the lift has be

The Nordberg Hydraulic Power Jack has a number of advantages over the earlier model. In addition to having more power and speed, it also has greater convenience in operation, requires less maintenance, and since the weight has been reduced by more than half, it is more easily and quickly moved from lift to lift or handled on or off the track. It also sells at a considerably lower price. With these advantages, this hydraulic jack is better adapted than the heavier and more ex-

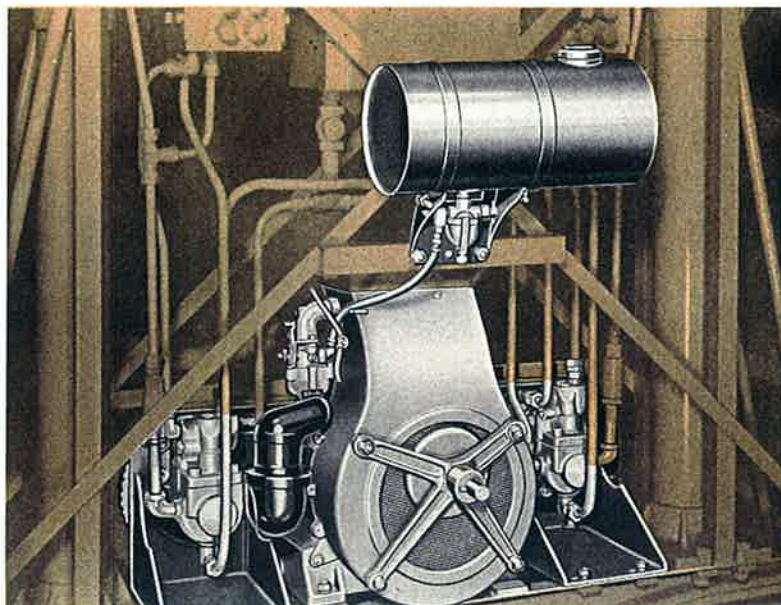
pensive model to the varying conditions encountered on ballasting and surfacing jobs and particularly those jobs for which smaller gangs are used.

Lifting by Hydraulic Rams

Lifting is accomplished by two hydraulic rams built into the machine at either side adjacent to the rails, the lower ends of the rams being connected to the shoe or foot piece. These rams operate with oil at high pressure supplied by two plunger pumps which are chain driven from a 6½ horsepower, air cooled engine.

Where a lift is to be made, the jack is spotted with the shoe located between the ties. When the operator steps on the platform, his weight automatically sets the brakes. This platform is so pivoted on the brake shaft that it also acts to accelerate the engine. As soon as the operator steps off the platform, the brake is released and the engine speed is lowered to idling.

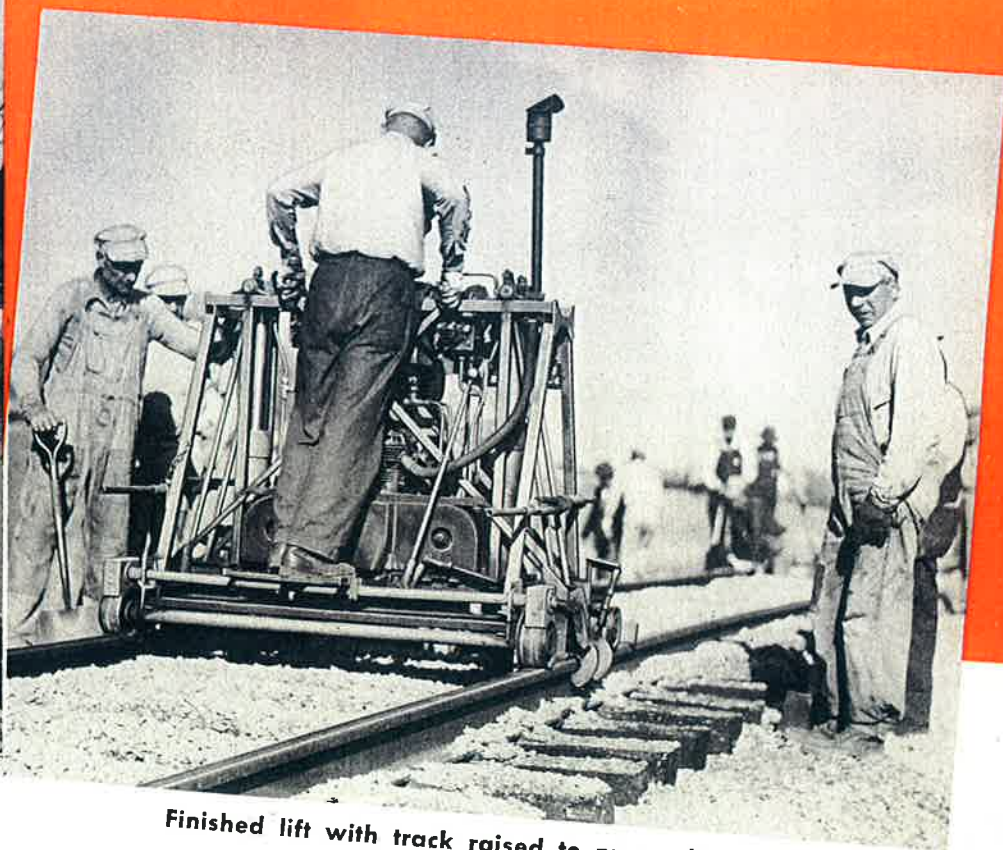
6½ horsepower engine and two plunger pumps which furnish oil at high pressure for operating the lifting rams.



Less Weight — Greater



Partially completed.



Finished lift with track raised to proper level.

Clamped to the Track

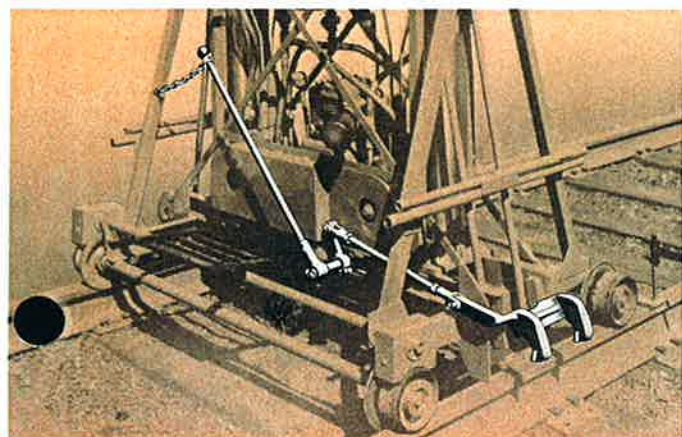
The jack is then securely clamped to the rails by two clamps operated from a lever located directly in front of the operator. As oil is admitted to the cylinders, the rams move downward. When the shoe reaches a solid footing, any additional movement of the rams exerts an upward pressure and the jack and a section of track are raised to the desired level.

One of the features of this jack is that where a

heavy layer of ballast has been spread, very little of the ballast need be moved in order that the clamps may engage the rail. Since the clamps engage the outside of the rail only, high ballast that may interfere can easily be pushed aside.

Simple Controls — Accurate Lift

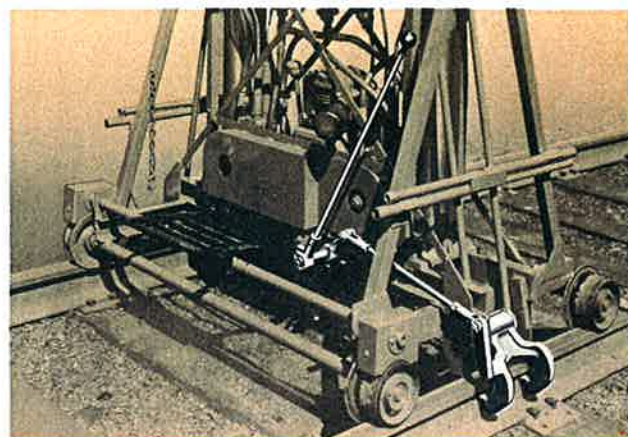
The amount of movement of the rams and the resultant lift of track is governed by the amount of oil admitted to the hydraulic cylinders. Oil



Rail clamps in raised position with lever secured by means of chain.

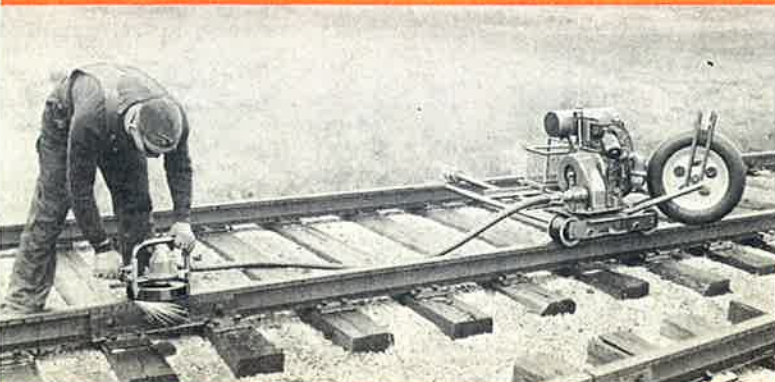


With lever released, the clamps automatically drop into position, securing the jack to the rails.



Convenience — Easier Handled — Lower Cost

This tool reduces the expense and does



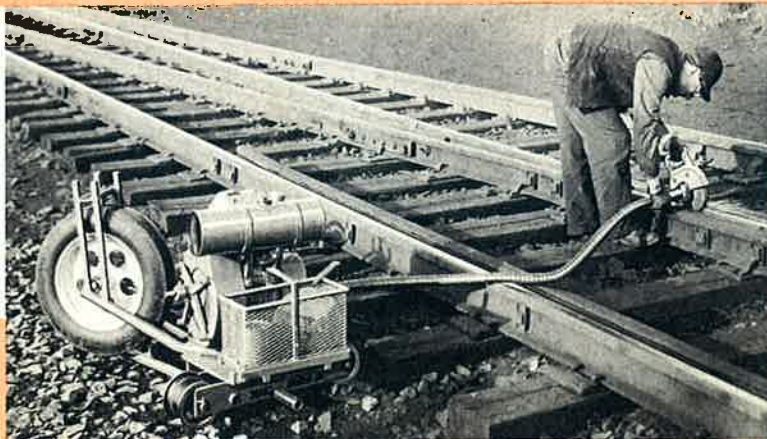
For surfacing joints, switches and crossings, this accessory can be used to advantage because of its many applications. Accessory GA-22-C.



Flow at switchpoints and stock rails is removed with this cup wheel device, doubling and tripling the life of switchpoints. Accessory GA-7-B.



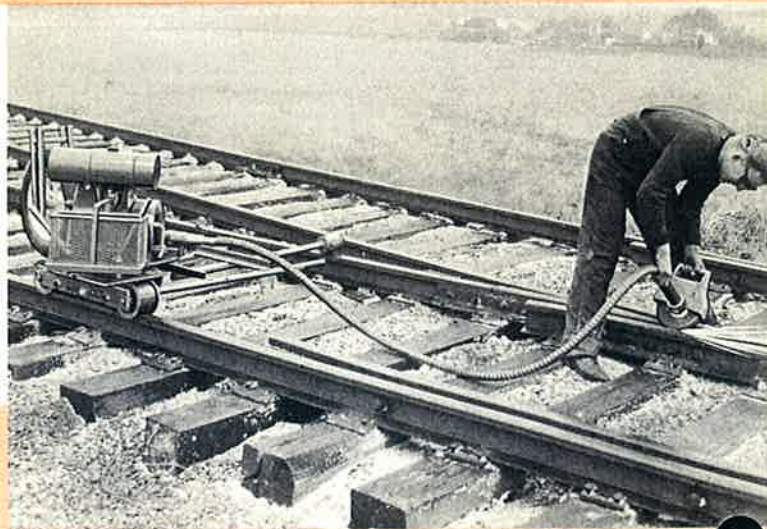
For slotting rail ends, a thin wheel swinging in a guide frame is used, this being secured to the rail with quick acting clamps. A screw moves wheel lengthwise of rail for close adjustment, and also for facilitating grinding rail with wide gaps. Accessory GA-11.



This radial wheel is useful for grinding frogs, flange-ways, crossings and similar hand grinding jobs. This accessory equipped with thin wheel can also be used for free hand rail end slotting, but is not as accurate as when attachment at left is used. Accessory GA-6.



Here is a tool developed especially for accurate grinding of welded rail ends, removing mill tolerance, etc. It is pushed back and forth on its rollers and, at the same time, rocked from side to side as the joint is being ground. Accessory GA-14-A.



Here is another application of the use of a radial wheel, that of grinding a frog, and is but one of the many applications of the Nordberg Utility Grinder. This view also shows the grinder riding on the track and moved along as the work progresses. Accessory GA-6.

better job maintaining rail and switches

The Nordberg Utility Grinder is an all-purpose tool, which has many uses in the maintenance of rail and switches. It can be used especially around terminals and yards, and for general maintenance work. With the number of Nordberg developed accessories, this tool can be kept busy and is soon paid for from savings. While it is a light weight machine easily handled by one man, if production is not essential it will do the work of larger and more expensive machines.

FULL REVOLVING

The six horsepower, single cylinder, air cooled, gasoline engine and drive is a unit so mounted to fully revolve on a welded tubular steel carriage. A slight pull on the flexible shaft revolves the engine so the shaft is kept in an approximate straight line, greatly prolonging its life.

LONG LIFE FLEXIBLE SHAFT

The flexible core of the shaft is enclosed in a rubber casing, armored inside and out, protecting it from dirt, wear and abrasion. The end and hand pieces are of the quick detachable type with sliding attaching collars and equipped with ball bearings enclosed against dust and dirt.

EASILY MOVED

The engine is so balanced on the carriage that the

grinder can easily be moved on the rails or wheeled over the ballast. The machine can easily be handled by one man since its weight is but 300 pounds.

FRICTION DRIVE

The ball bearing mounted friction drive of simple design located between the engine and flexible shaft is so arranged that the drive can slip in case of overload should the wheel become snagged. Contact between the drive members is maintained constantly uniform by spring pressure. A convenient lever is provided to instantly release the drive or for disengaging the shaft when the engine is started.

APPLICATIONS

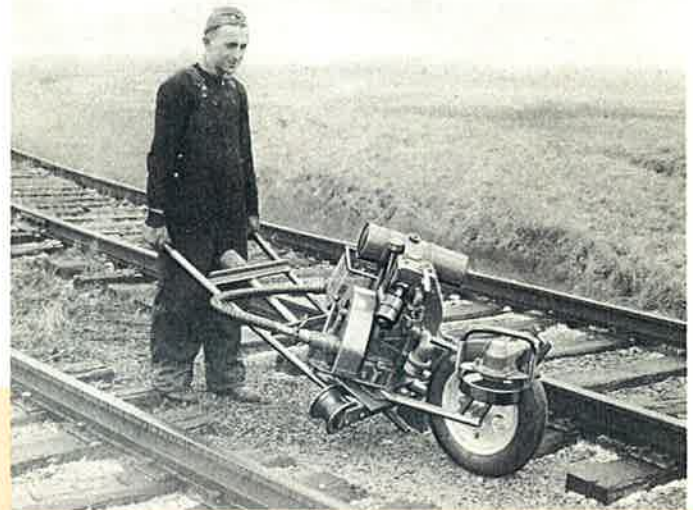
The following are some of the uses to which this grinder can be put, and which are shown in the illustrations on the left hand page:

SURFACE GRINDING — Two accessories with angle driven cup wheel are available. One is a freely held wheel, while the other is mounted in a fixture and suited for greater accuracy when grinding welded rail ends, removing mill tolerance and equalizing the height of cropped rails.

RAIL SLOTTING — This can be done with slotting guide or with freely held wheel. The latter is faster but not as accurate.

SWITCH GRINDING — With the cup wheel accessory, flow at switchpoints and stock rails can quickly be removed.

FLANGWAYS, FROGS, ETC. — Many grinding jobs can easily be done with a hand-held, wide-faced radial wheel.



When moving from job to job, the grinder may be pushed along the rails on the flanged rollers and insulated stabilizing bar, or, with the engine locked in position on the carriage, wheeled over the ballast as easily as a wheelbarrow. A support for the accessory is provided over the tire.

Accessories Furnished For Nordberg Grinders

The Utility Grinder is regularly furnished with 9 foot flexible shaft complete for attaching the various accessories, together with necessary tools for maintaining the grinder. ACCESSORIES DESIRED MUST BE ORDERED IN ADDITION TO THE GRINDER.

When ordering a complete grinder, add from the following list the accessories required for adapting the machine for the jobs for which it is to be used:

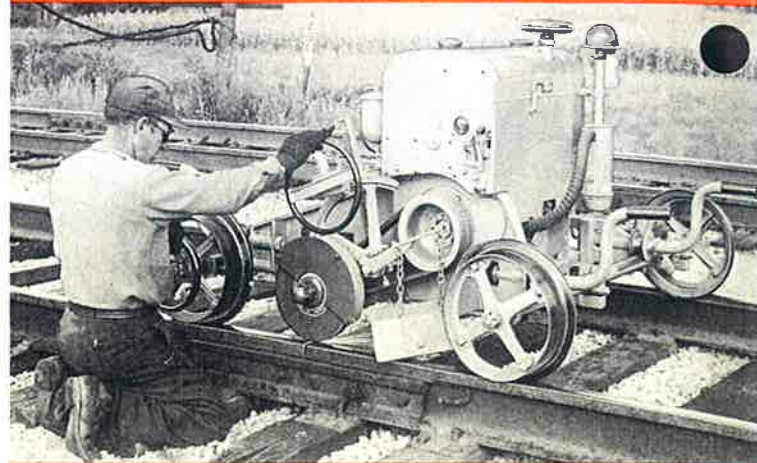
- GA-4 Straight Hand Piece.
- GA-6 Guard for hand-held wheels. (Uses GA-4 Hand Piece and G-170, G-171, G-172 and G-183 wheels.)
- GA-7-B Guard for cup wheel. (Uses GA-4 Hand Piece and G-502 wheel.)
- GA-11 Slotting Guide. (Uses GA-4 Hand Piece, GA-6 Guard and G-170, G-171 and G-172 wheels.)
- GA-14-A Surfacing Appliance with cup wheel. (Uses GA-24 Hand Piece and G-260 Wheel.)
- GA-22-C Free Hand Surfacing Appliance with cup wheel. (Uses GA-24 Hand Piece and G-260 wheel.)
- GA-24 Right Angle Hand Piece.
- G-170 8" dia. x $\frac{1}{8}$ " thick wheel for GA-6.
- G-171 8" dia. x $\frac{3}{16}$ " thick wheel for GA-6.
- G-172 8" dia. x $\frac{1}{4}$ " thick wheel for GA-6.
- G-183 8" dia. x 1" thick wheel for GA-6.
- G-502 6" dia. x 2" wide x $1\frac{1}{4}$ " wall cup wheel for GA-7-B.
- G-260 8" dia. x 2" wide x 2" wall cup wheel for GA-14-A.

NORDBERG POWER TOOLS FOR TRACK MAINTENANCE

Midget Grinder
Utility Grinder
Adzing Machine
Spike Hammer
Track Wrench
Cribex

Surface Grinder
Flexible Arm Grinder
Rail Drill
Spike Puller
Power Jack
Track Shifter

Three Other Grinders For Rail Maintenance



SURFACE GRINDER

This grinder primarily developed for surface grinding of rail reconditioned by welding is available in two types, a heavy duty model and a light weight machine for use in congested traffic areas.



FLEXIBLE ARM GRINDER

This grinder does a quality job on all rail grinding work and has a big capacity for volume production.



MIDGET GRINDER

This cup wheel grinder is adapted to smooth, precision grinding of welded rail ends, removing mill tolerance, leveling croppped rail and grinding out corrugations and wheel burns.