Oct. 4, 1932. W. PIELHAU 1,880,473

TRACK WINCH

Filed Sept. 17, 1928

Fig. 1.

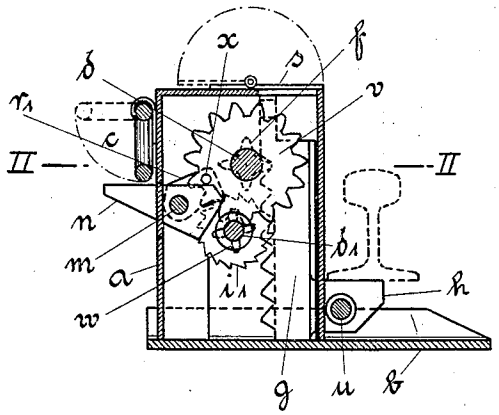


Fig. 3.

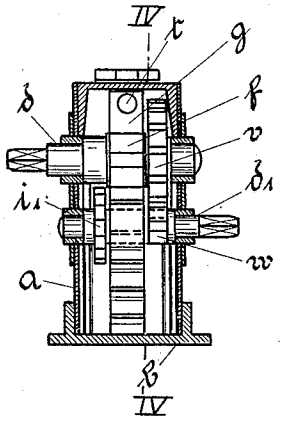


Fig. 2.

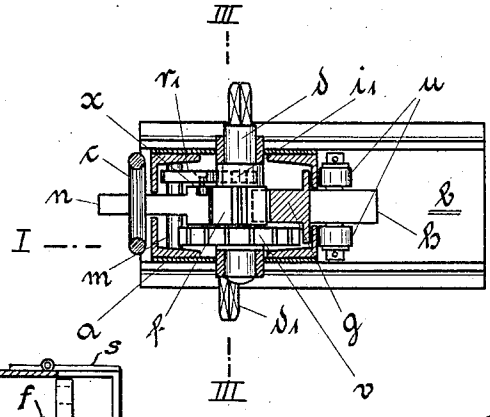
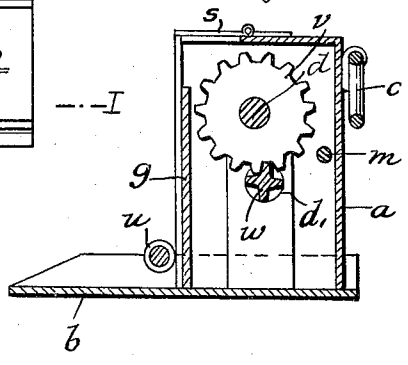


Fig. 5.



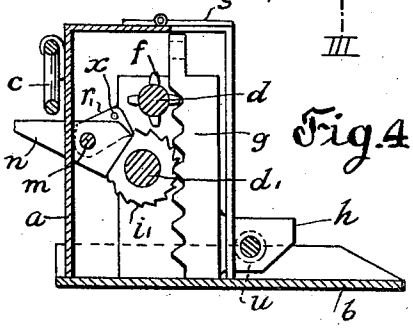


Fig. 4.

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UNITED STATES PATENT OFFICE

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TRACK WINCH

Application filed September 17, 1928, Serial No. 306,553, and in Germany May 1, 1928.

This invention relates to a track winch in which the rack fitted with a track jack, is actuated by driving shafts, coupled the one with the other by means of a tooth wheel gear. On one of the two driving shafts a ratchet wheel is mounted, with which a pawl engages in order to lock the rack in its actual position. The winch is fitted with a releasing mechanism operated by a pivoted pedal lever, which makes it possible to suddenly lower the rack into its initial position. The construction of the releasing device constitutes the main feature of the invention.

In the known track winches the releasing devices are mostly of complicated construction and comparatively difficult to operate, so that it is not possible to suddenly lower the rack and to withdraw the winch from the profile of the rail. This is however absolutely essential in work on the permanent way, owing to dangerous traffic conditions.

According to the invention the pawl is lifted directly out of engagement with the ratchet wheel by means of the pedal lever. The pressure exerted on the housing of the winch, as a result of the turning moment occurring at the loading of the jack, is transmitted by guide rollers for reducing the frictional resistance.

An embodiment of the invention is illustrated, by way of example, in the accompanying drawing in which

Fig. 1 is a vertical section on line I—I of Fig. 2 and

Fig. 2 is a cross section on line II—II of Fig. 1.

Fig. 3 is a vertical section on line III—III of Fig. 2.

Fig. 4 is a section viewed from the right of line IV—IV of Fig. 3.

Fig 5 is a section on the same line IV—IV of Fig 3, viewed from the left.

a is the housing mounted on the bed b of the winch, in the top plate of which an aperture is provided for the rack g. When the rack g is in its lowered position the aperture can be covered with a pivoted lid s hingedly fixed on the top plate of the housing so that it is opened by the rising rack g. The head of the rack is set off and has a boring t into which a tool has to be hooked, designed to pull up the rack g fitted with jack h until it comes into contact with the load to be lifted, thus doing away with the tedious and tiresome rotating of the crank on the driving shafts. The horizontal force occuring owing to the turning moment of the loaded jack h is transmitted to the wall of the housing a by means of guide rollers u, whereby the frictional resistance between rack and housing is greatly reduced. In the upper part of the housing a the driving shaft d is mounted, on which the driving wheel f engaging with the teeth of the rack g and the transmission gear v are keyed. The latter engages with the gear wheel w of the second driving shaft d' mounted in a somewhat lower plane. The shaft d' carries further a ratchet wheel i' with which engages the pawl r' pivotally mounted on the bolt m of the pedal lever n. The pedal lever n, which is constructed as a two-armed rocking lever and reduced on its outer portion, as also the pawl r', tips automatically, under the action of its center of gravity, in a clockwise direction so that the winch is locked. The pawl r' carries on the side towards the pedal lever n a catch pin x which is not affected by the pedal lever n when the pawl r' is engaging the ratchet wheel i'. If however a pressure is exerted from above on the pedal lever n, the pawl r' will be positively disengaged, with the result that the rack g drops back with a jerk into its initial position. In order to remove the disengaged winch from the track quickly, the handle c tippably mounted on the casing a is arranged just above the pedal lever n.

The operation is as follows:—

By turning in clockwise direction the driving shafts d, d' projecting on different sides of the housing a, the rack g is raised and locked in any position by means of the pawl r'. If a pressure is now exerted from above with the foot on the pedal lever n, the pawl r' will be disengaged from the ratchet wheel i', and the rack g will descend with a jerk into its initial position. The winch can then be pulled out of engagement with the profile of the rail by means of the handle c.

If comparatively light charges are to be

lifted, the winch is preferably driven directly from the shaft d, the shaft d', owing to the engagement of the gear wheel being then turned idly. If, however, heavy charges have to be lifted, the winch on the shaft d' is driven whereby the charge is raised indirectly in proportion to the ratio of the gears v, w.

I claim:—

A track winch, comprising in combination a housing, a rack slidable in said housing, a jack on said rack projecting from said housing, driving shafts mounted in said housing, a pair of gear wheels connecting said shafts, a gear wheel on the upper of said shafts adapted to operate said rack, a ratchet wheel secured to the lower of said shafts for retaining said rack in raised position, a pawl engaging with said ratchet wheel for locking the same, and a pedal lever directly operating said pawl for disengaging the same from said ratchet wheel.

In testimony whereof I affix my signature.

WILHELM PIELHAU.