

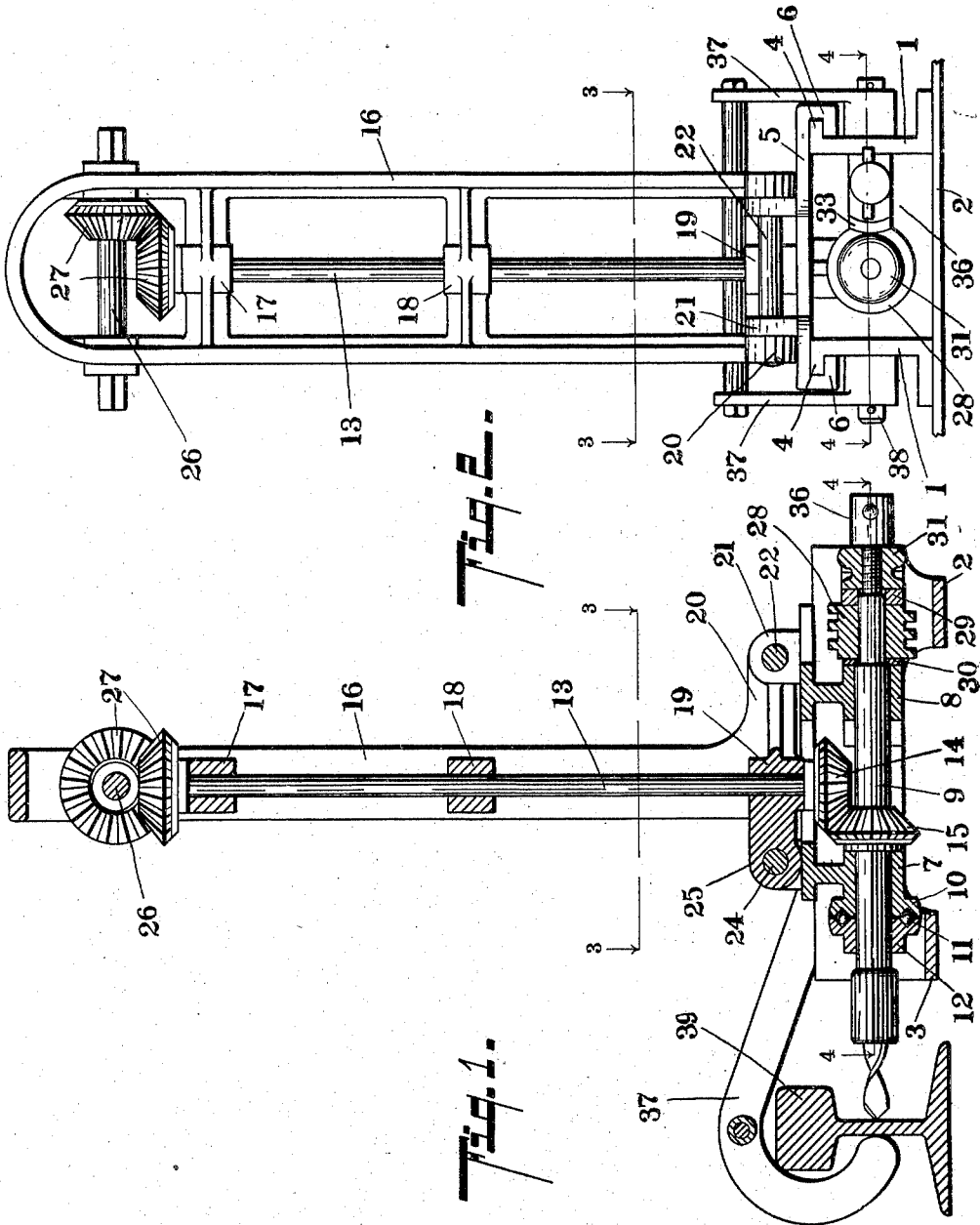
C. K. PICKLES.
TRACK DRILL.

APPLICATION FILED JUNE 25, 1909.

Patented Aug. 16, 1910.

2 SHEETS—SHEET 1.

967,552.



Inventor

Charles K. Pickles

By

Chappell & Co.

Attorneys

Witnesses
F. Gertrude Tallman
Margaret L. Glasgow.

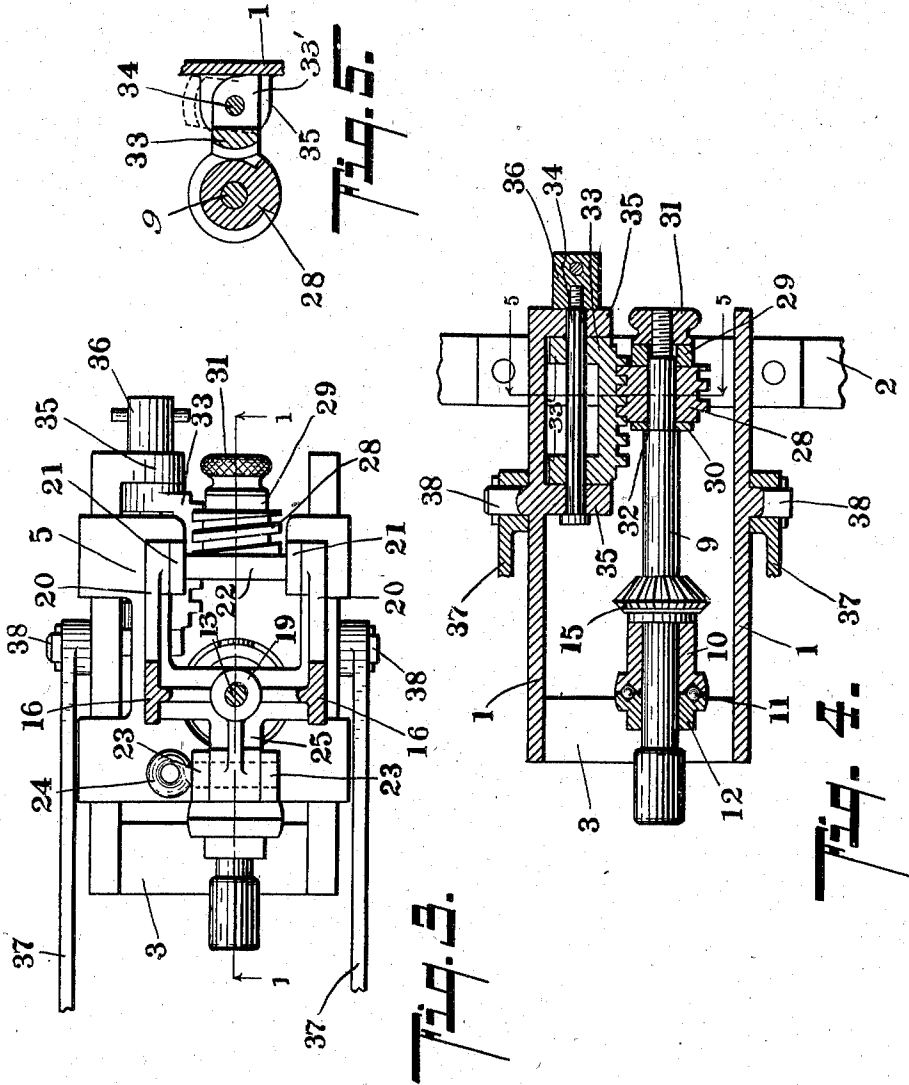
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UNITED STATES PATENT OFFICE.

CHARLES K. PICKLES, OF ST. LOUIS, MISSOURI, ASSIGNOR TO SHEFFIELD CAR COMPANY, OF THREE RIVERS, MICHIGAN.

TRACK-DRILL.

967,552.

Specification of Letters Patent.

Patented Aug. 16, 1910.

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To all whom it may concern:

Be it known that I, CHARLES K. PICKLES, a citizen of the United States, residing at St. Louis, Missouri, have invented certain new and useful Improvements in Track-Drills, of which the following is a specification.

This invention relates to improvements in track drills.

The main objects of this invention are:

- 10 First, to provide in a track drill an improved feed mechanism. Second, to provide in a track drill an improved mechanism in which the feed is so connected that it is quite impossible for an unskilled or inexperienced workman to apply undue stress to the drill. Third, to provide an improved track drill which may be very quickly adjusted to or withdrawn from the work.
- 15 Fourth, to provide an improved track drill which may be quickly knocked down or collapsed to permit the passing of trains. Fifth, to provide an improved track drill which is very simple in construction, and, at the same time, rigid and durable.

- 25 Further objects, and objects relating to structural details, will definitely appear from the detailed description to follow.

- 30 I accomplish the objects of my invention by the devices and means described in the following specification.

The invention is clearly defined and pointed out in the claims.

- 35 A structure embodying the features of my invention is clearly illustrated in the accompanying drawing, forming a part of this specification, in which;

- 40 Figure 1 is a vertical section of a structure embodying the features of my invention, taken on a line corresponding to line 1—1 of Fig. 3. Fig. 2 is a rear elevation of my improved track drill with the cranks removed. Fig. 3 is a horizontal section, taken on a line corresponding to lines 3—3 of Figs. 1 and 2, portions of the rail-engaging hooks being broken away. Fig. 4 is a detail horizontal section taken on a line corresponding to lines 4—4 of Figs. 1 and 2. Fig. 5 is a detail section, taken on a line corresponding to line 5—5 of Fig. 4, showing details of the feed mechanism.
- 50

- 55 In the drawings, similar reference characters refer to similar parts throughout the several views, and the sectional views are taken looking in the direction of the little arrows at the ends of the section lines.

Referring to the drawing, I provide a horizontal frame or base which is preferably made up of plate-like side pieces 1 and cross pieces 2 and 3, the rear cross piece 2 being preferably extended beyond the side pieces to afford a wide support and also so that the operators may stand upon the same when operating the drill to assist in holding it in place. The base is provided with ways 4, the ways being preferably in the form of outturned flanges at the upper edges of the side plates 1. The carriage 5 is adapted to slide upon these ways and is provided with downwardly and inwardly turned way-engaging members 6, there being preferably four of these, so that the carriage is held firmly upon the base, and, at the same time, travels freely thereon. The ways preferably extend to the end of the base, so that the parts are assembled by slipping the carriage thereon from the end, as will be obvious. The carriage is provided with a pair of horizontally-arranged bearings, as 7 and 8, for the drill spindle or holders. The forward bearing 7 is provided with a thrust bearing member 10, preferably provided with a suitable ball-race for the bearing balls 11 interposed between it and the bearing member 12, which is secured to the drill spindle. This receives the thrust of the drill spindle and secures the spindle against axial movement relative to the carriage.

The spindle is driven through the driving shaft 13, which is provided with a beveled gear 14 on its lower end adapted to mesh with the gear 15 on the drill spindle. The driving shaft 13 is carried by the upright or standard 16, which is provided with suitable bearings as 17, 18 and 19 therefor. The standard 16 is provided with a horizontal foot or base portion 20, which is secured to the upwardly-projecting ears 21 at the rear of the carriage by means of the pivot pin 22. The carriage is also provided with a pair of upwardly-projecting ears 23 located at the front thereof, the ears being perforated to receive the retaining bolt or pin 24. The base 20 of the standard is provided with a forwardly-projecting arm 25 which is adapted to pass between these ears 23 and is perforated to receive the retaining pin 24 whereby the standard is secured to the base, and, at the same time, may be readily collapsed by removing the pin or bolt 24. The

crank shaft 26 is arranged transversely at the upper end of the upright 16, and is geared to the driving shaft by means of suitable beveled gears, as 27.

5 On the rear end of the spindle, I arrange a feed worm 28. The feed worm 28 is rev-
olubly mounted on the spindle, and has a fric-
tion connection therewith. This friction
connection preferably consists of the wash-
10 ers 29 and 30 and the clamping nut 31, which
is threaded upon the rear end of the spindle.
The washers 29 and 30 are arranged one at
each side of the feed worm, the spindle be-
ing shouldered at 32 to receive the inner
15 washer 30.

By adjusting the nut 31, the friction can
be regulated so that the drill is effectively
driven, and, at the same time, when the
strain thereon exceeds a predetermined
20 point, the feed worm will slip so that the
drill is not subjected to undue strain.

Co-acting with the feed worm is a feed
rack 33 which is mounted on the pivot rod
34, arranged through suitable ears 35 on the
25 base. This rack is arranged so that it may
be thrown into and out of engagement with
the feed worm, as desired. When disen-
gaged therefrom, the carriage can be ad-
vanced or retracted freely, as desired, to
30 bring the drill up to or withdraw it from
the work. The rack is under ordinary cir-
cumstances swung to its disengaging posi-
tion by the rearward turning of the spindle,
but if it is desired to retain the same in driv-
35 ing engagement, this may be done by the
operator placing his foot upon the rack or
upon the hand-piece 36 on the end of the
pivot rod 34. The pivot ears 33' for the rack
are preferably arranged to engage the frame
40 and to serve as stops for limiting the down-
ward movement of the rack, thus holding it
in position, as is shown in Fig. 5. The rail-
engaging hooks 37 are mounted on suitable
outwardly-projecting journals 38 on the
45 base. These hooks are adapted to be thrown
over the rail, as 39, for holding the machine
to its work.

My improved drill is very simple and
durable in construction and quickly and
50 easily operated. It may also be quickly col-
lapsed or removed from the track to permit
the passing of trains.

Having thus described my invention, what
I claim as new and desire to secure by Let-
55 ters Patent, is:

1. In a structure of the class described,
the combination with a base having horizon-
tal ways thereon; a carriage mounted on
said ways; a spindle mounted on said car-
60 riage and secured against axial movement
relative thereto; a feed worm mounted on
said spindle and having a friction connec-
tion thereto; a rack carried by said base
adapted to be thrown into and out of en-
65 gagement with said worm; and driving

means for said spindle carried by said car-
riage.

2. In a structure of the class described, the
combination with a base having horizontal
ways thereon; a carriage mounted on said 70
ways; a spindle mounted on said carriage
and secured against axial movement rela-
tive thereto; a feed worm on said spindle; a
rack carried by said base adapted to be
thrown into and out of engagement with
75 said worm; and driving means for said
spindle carried by said carriage.

3. In a structure of the class described,
the combination with a frame; a spindle; a
feed worm for said spindle having a fric- 80
tional connection thereto; a feed rack ar-
ranged to be thrown into or out of engage-
ment with said feed worm, adapted to be
automatically disengaged on the rearward
turning of the spindle; a stop for said rack 85
when in its engaging position; and driving
means for said spindle.

4. In a structure of the class described, the
combination with a frame; a spindle; a feed
worm for said spindle; a feed rack arranged 90
to be thrown into or out of engagement with
said feed worm, adapted to be automatically
disengaged on the rearward turning of the
spindle; a stop for said rack when in its
engaging position; and driving means for 95
said spindle.

5. In a structure of the class described,
the combination with a frame; a spindle; a
feed worm for said spindle having a fric- 100
tional connection thereto; a feed rack ar-
ranged to be thrown into or out of engage-
ment with said feed worm; and driving
means for said spindle.

6. In a structure of the class described,
the combination with a frame; a spindle; a 105
feed worm for said spindle; a feed rack ar-
ranged to be thrown into or out of engage-
ment with said feed worm; and driving
means for said spindle.

7. In a structure of the class described, 110
the combination with a frame; a spindle; a
feed worm for said spindle, having a fric-
tional connection therewith; a pivoted feed
rack; a hand piece for throwing said rack
into or out of its engaging position; and 115
driving means for said spindle.

8. In a structure of the class described,
the combination with a frame; a spindle; a
feed worm for said spindle; a pivoted feed
rack; a hand piece for throwing said rack 120
into or out of its engaging position; and
driving means for said spindle.

In witness whereof, I have hereunto set
my hand and seal in the presence of two
witnesses.

CHARLES K. PICKLES. [L. S.]

Witnesses:

SHELLEY PICKLES,
L. A. HUTCHINSON.