No. 815,727. PATENTED MAR. 20, 1906.

S. P. MICKEY & C. W. CALDWELL.

RAILWAY TRACK MACHINE.

APPLICATION FILED APR. 13, 1906.

2 SHEETS—SHEET 1.

Fig. 1.

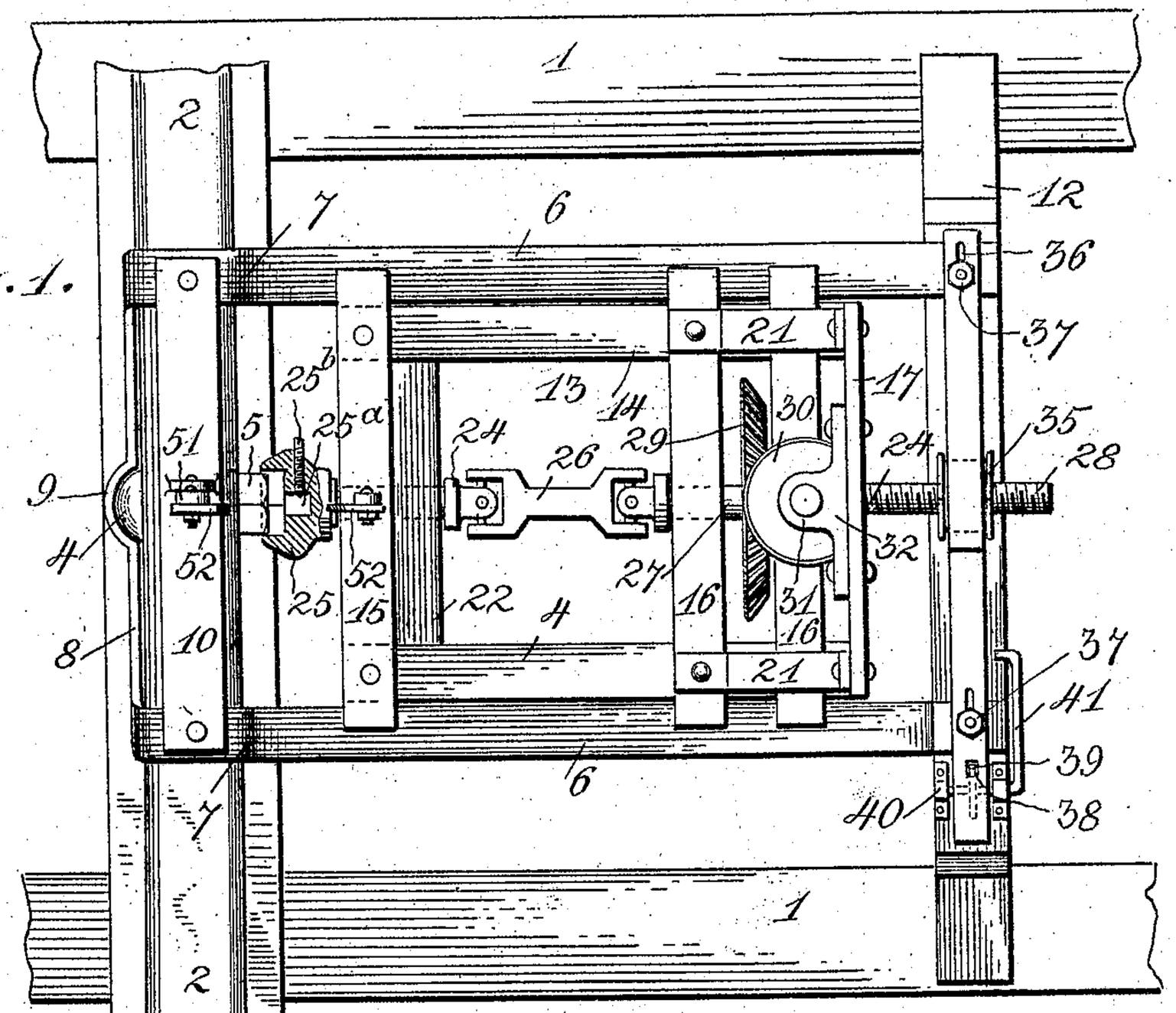


Fig. 2

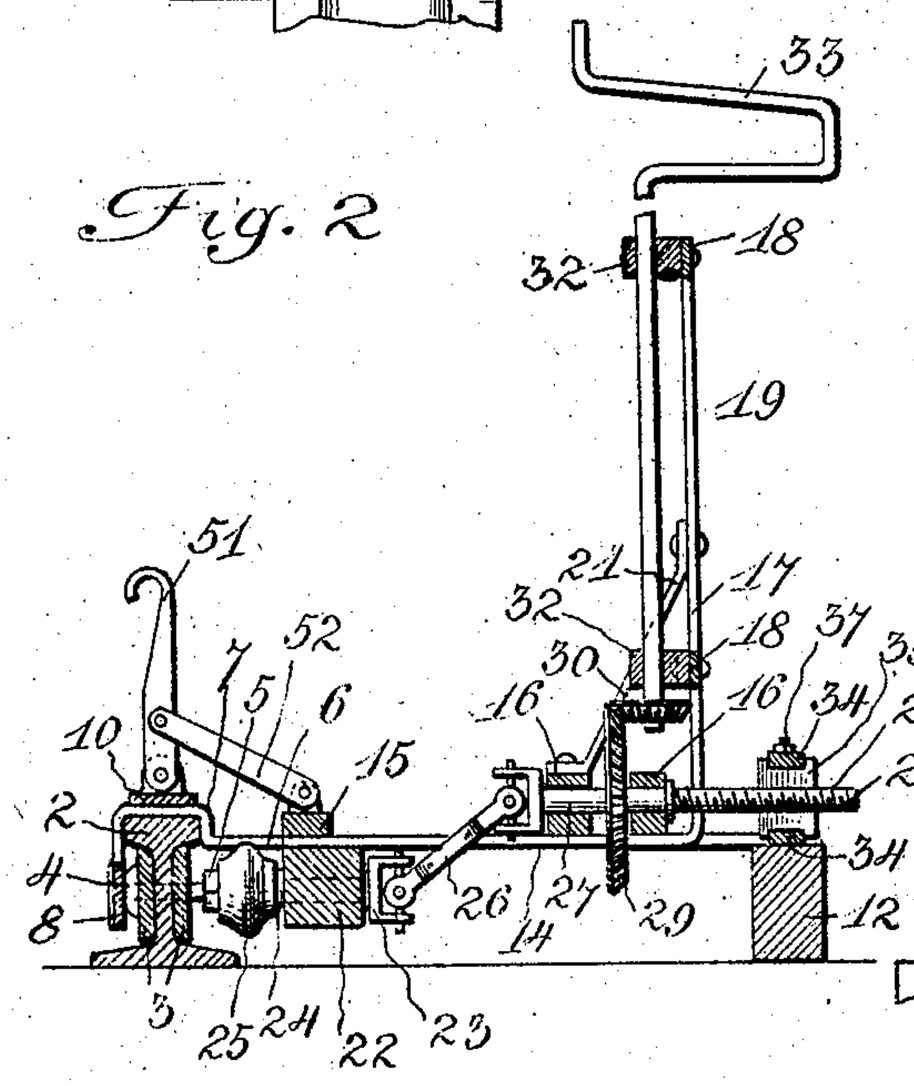
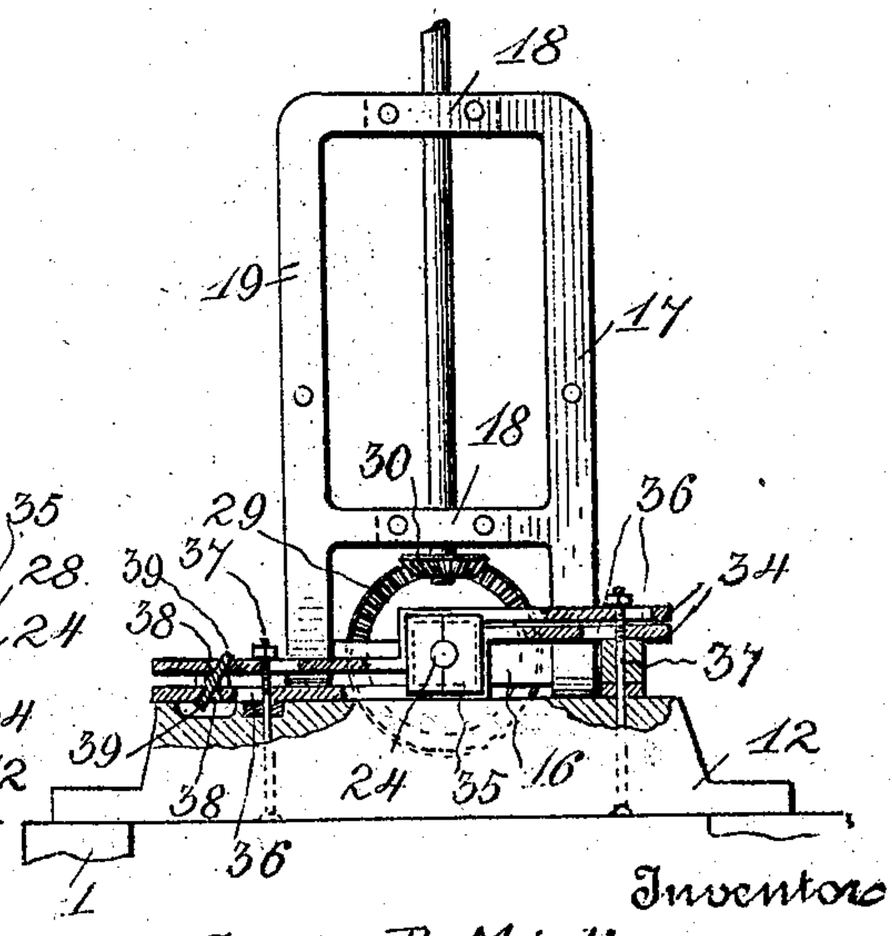


Fig. 3.



Witnesses
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2 SHEETS—SHEET 2.

Fig. 4.

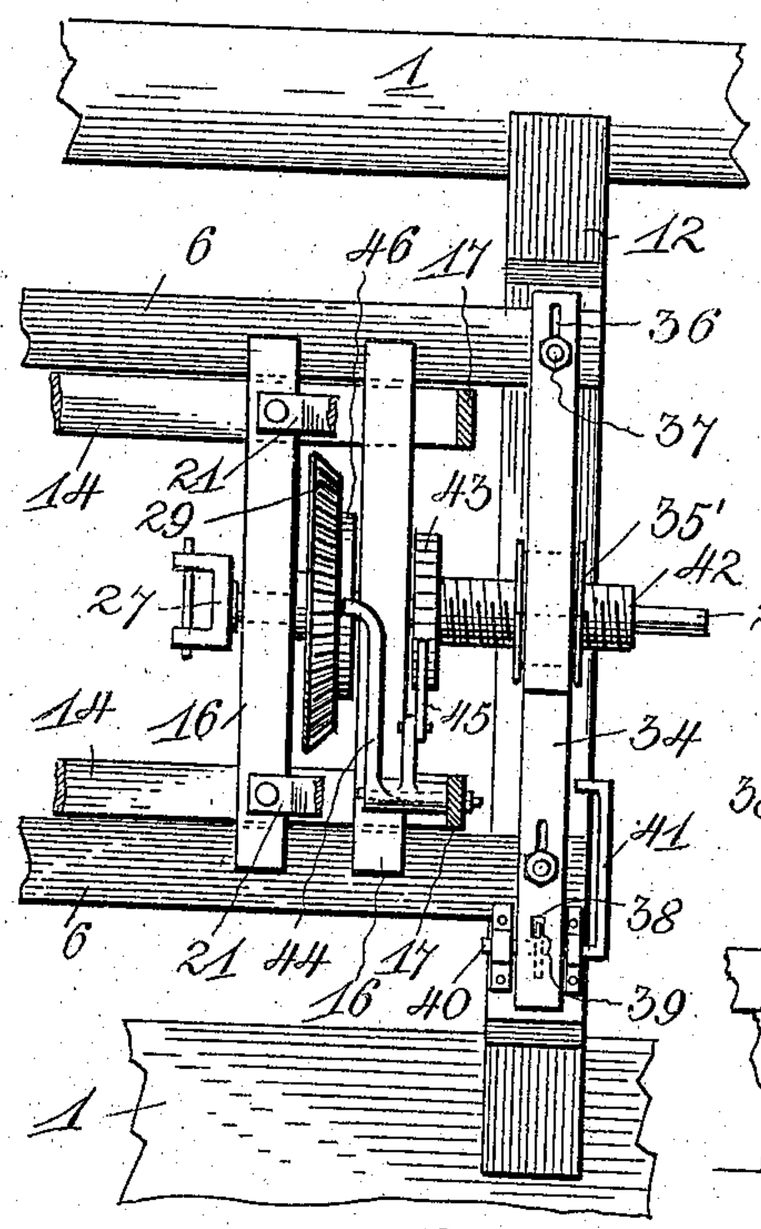


Fig. 5.

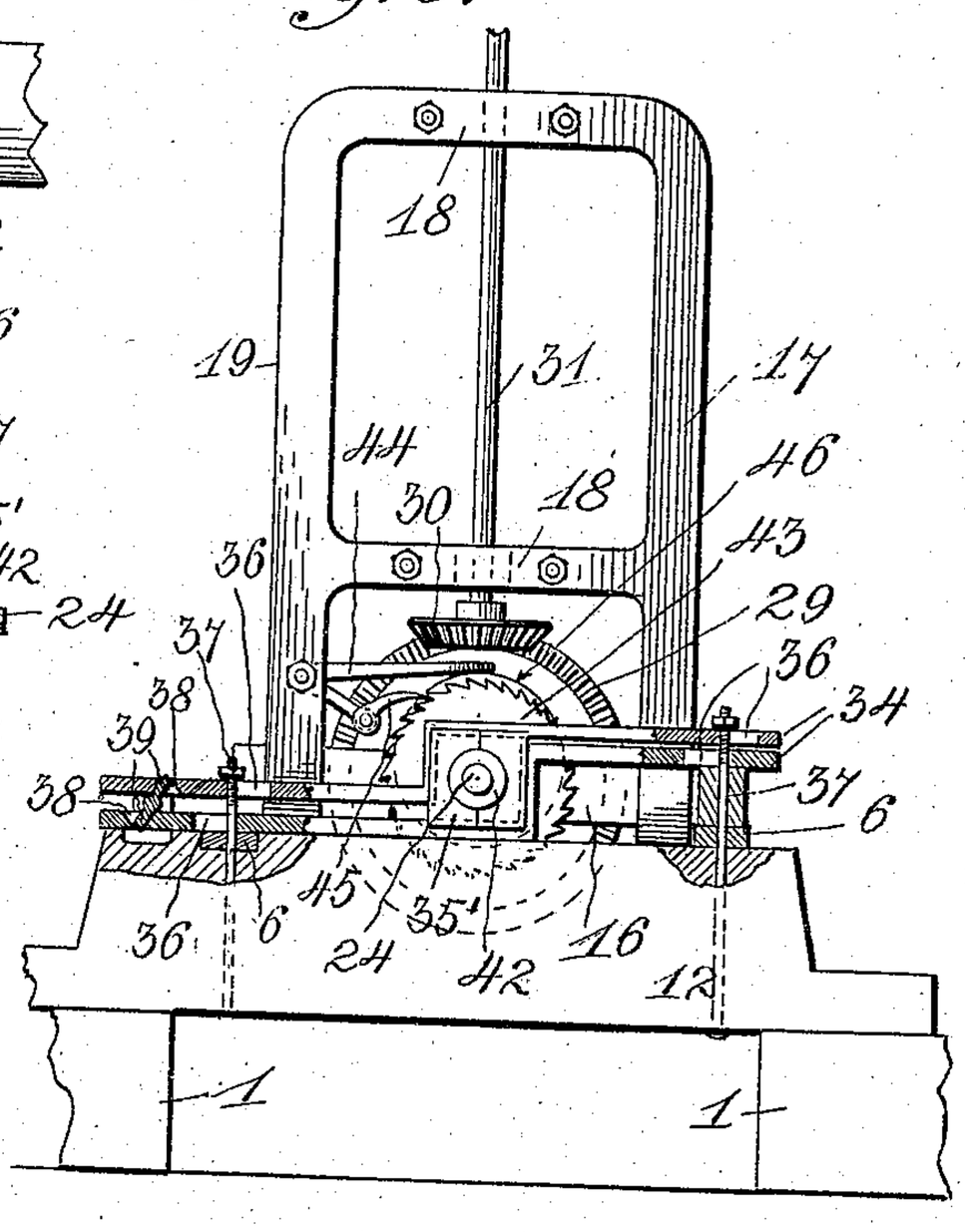


Fig. 6.

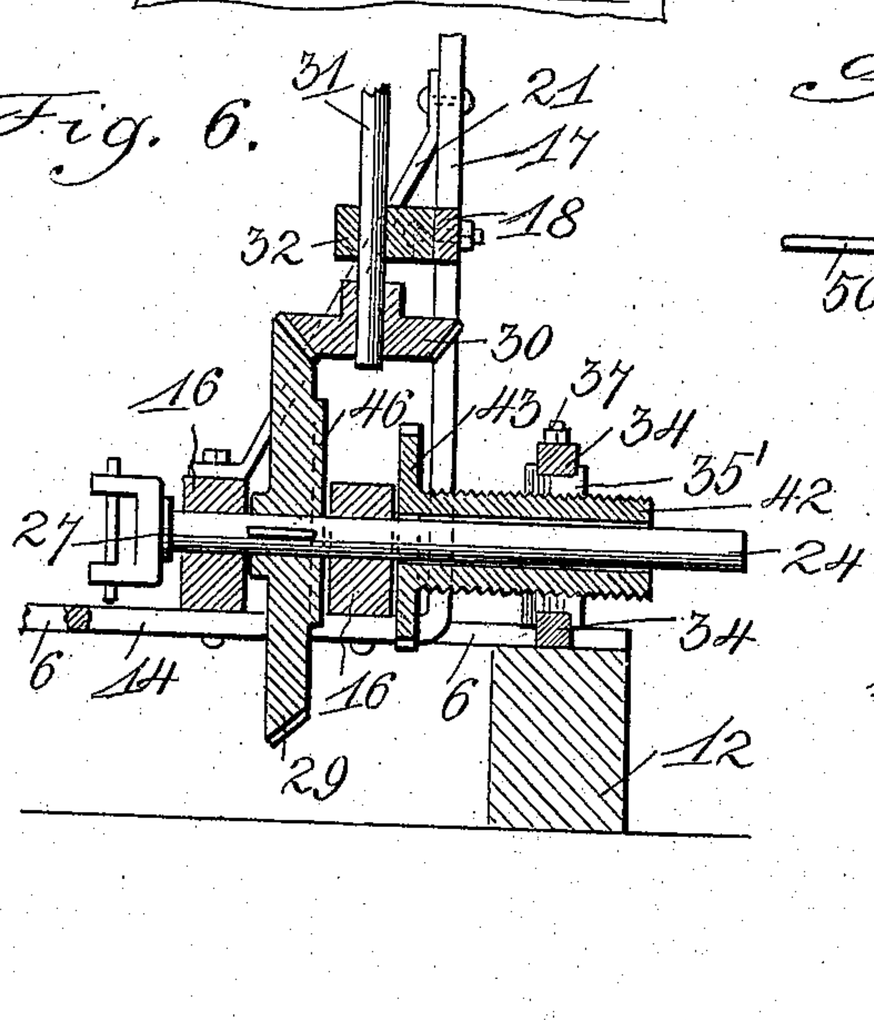
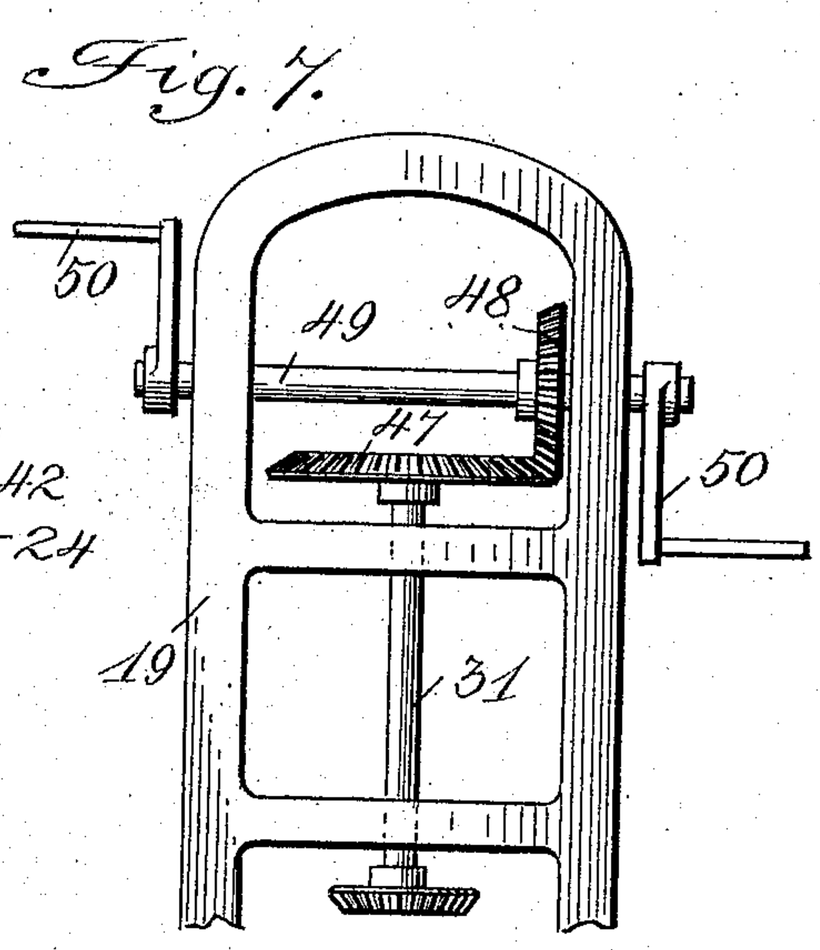


Fig. 7.



Witnesses

C. [illegible]

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UNITED STATES PATENT OFFICE.

SIMON PETER MICKEY, OF MONARAT, AND CHARLES W. CALDWELL, OF GALAX, VIRGINIA.

RAILWAY-TRACK MACHINE.

No. 815,727. Specification of Letters Patent. Patented March 20, 1906.

Application filed April 13, 1905. Serial No. 255,432.

To all whom it may concern:

Be it known that we, SIMON PETER MICKEY, residing at Monarat, and CHARLES W. CALDWELL, residing at Galax, in the State of Virginia, citizens of the United States, have invented certain new and useful Improvements in Railway-Track Machines; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in railway-track machines.

The object of the invention is to provide a machine of this character by which the labor of securing the meeting ends of railway-rails may be quickly and efficiently performed.

A further object is to provide a machine of this character which will be simple in construction, strong, durable, and well adapted to the use for which it is designed.

With these and other objects in view the invention consists of certain novel features of construction, combination, and arrangement of parts, as will be more fully described, and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a top plan view of a machine-wrench constructed in accordance with our invention and showing the same applied to a railway-track. Fig. 2 is a vertical longitudinal sectional view thereof. Fig. 3 is a rear end elevation of the same. Fig. 4 is a top plan view of the rear end of the machine, showing the arrangement of the same when used as a drill. Fig. 5 is a rear end elevation of the same. Fig. 6 is an enlarged detail sectional view of the parts as shown in Figs. 4 and 5; and Fig. 7 is a rear end view of a portion of the supporting-frame, showing the arrangement of double-crank shaft for use in heavy work.

Referring more particularly to the drawings, 1 denotes the ties, and 2 the track, of a railway. 3 denotes the fish-plates, and 4 and 5 the bolt and nuts for securing said fish-plates on said rails.

The machine comprises a stationary horizontally-disposed frame consisting of parallel side bars 6, which are bent at their outer ends to engage the track-rail, as shown at 7. The downwardly-turned ends of the bars 6 adjacent to the outside of the rail are connected by an integral cross-bar 8, in the center of which is formed a depression 9, which is adapted to engage the head of the bolt 4. Above the top or tread of the rail the side bars 6 are connected by a cross-bar 10, and at their opposite ends said bars are bolted to and connected by a cross-bar 12, which rests upon the ties 1.

On the side bars 6 of the stationary frame is slidably mounted a movable frame 13, consisting of longitudinally-disposed side bars 14, connected together at their forward ends by a cross-bar 15 and at their opposite ends by parallel cross-bars 16. The ends of the cross-bars 15 and 16 extend beyond the longitudinal bars 14 and are adapted to slidingly engage or rest on the side bars 6 of the stationary frame. The longitudinal bars 14 adjacent to the outer cross-bar 16 are turned up at right angles, as at 17, and are connected together at their upper and lower ends by cross-bars 18, thereby forming an upright frame 19. The upright frame 19 is further braced by inclined brace-bars 21, which are connected at their upper ends to the top of said frame and at their lower ends to the forward ends of the longitudinal bars 14. To the under side of the longitudinal bars 14, beneath the cross-bar 15, is secured a cross-bar 22, in which is journaled the front section 23 of flexible shaft 24. On the forward end of said shaft-section 23 is formed a wrench-head 25, which is adapted to engage the nut 5 of the track-rail, said head having formed therein a recess 25^a to receive a drill and a set-screw 25^b to hold the drill in place. To the rear end of the shaft-section 23 is connected one end of a universal joint 26, and to the rear end of said joint is connected the rear section 27 of said shaft 24, the rear portion of said section being threaded, as at 28. The shaft-section 27 is journaled in the cross-bars 16 of the movable frame 13, and on said section between the bars 16 is fixedly mounted a vertically-disposed bevel gear-wheel 29, which is in mesh with and is driven by bevel gear-pinion 30, fixed on a vertically-disposed shaft 31, which is mounted in bearings 32, secured to the upright frame 19. The upper end of the shaft 31 is bent to form a crank-handle 33, by which said shaft and gear-pinion may be turned, thereby turning the gear-

wheel 29, flexible shaft 24, and wrench-head 25, which when engaged with a nut will screw the same on or off a bolt.

On the cross-bar 12 is slidably mounted a pair of horizontally-disposed clamping-bars 34, between which is adapted to be clamped a two-part nut 35. The parts of said nut are adapted to be brought into engagement with the threaded end of the shaft 28, so that when said shaft is driven, as hereinbefore described, the sliding frame 13 will be moved on the stationary frame, thereby keeping the wrench-head in engagement with the nut.

The bars 34 may be slidingly connected to the cross-bar 12 in any suitable manner, but are preferably provided near their opposite ends with alined slots 36, through which are adapted to pass bolts 37, thus slidably securing the bars in place. In one end of the bars 34 are formed alined slots 38, in which are disposed the ends of oppositely-projecting cam-lugs 39, which are fixed on a pivotally-mounted shaft 40, journaled on the bar 12, and to said shaft is connected an operating-lever 41, whereby the shaft and the lugs 39 are turned. The oppositely-projecting lugs engaging the upper and lower bars through the slots 38 will shift one of the same in one direction and the other in the opposite direction, thus separating the sections of the nut, one of said nut-sections being attached to one of the bars and the other section to the other bar. When the nut 35 has thus been separated, the sliding frame may be moved back on the stationary frame, thereby disengaging the wrench-head from the nut on the rail.

In Figs. 4, 5, and 6 of the drawings the machine is shown as arranged for a drill. In this instance an exteriorly-threaded sleeve 42 is arranged on the shaft 28, and on the inner end of said sleeve is mounted a ratchet-wheel 43. Pivotally mounted on the frame 19 is a bell-crank lever 44, to the short arm of which is pivotally connected a gravity-pawl 45, said pawl being adapted to engage the teeth of the wheel 43. The long arm of the bell-crank lever projects forwardly in position to be engaged by a cam 46, arranged on the side of the beveled gear-wheel 29, whereby when said wheel is turned the cam will trip the bell-crank lever and cause the same to actuate the pawl 45, which will turn the ratchet-wheel 43 and sleeve 42. When the machine is arranged as a drill, a sectional nut 35′ of the proper size to engage the threaded sleeve 42 will be arranged in the bars 34, so that when said sleeve is turned, as hereinbefore described, the movable frame 13 will be gradually shifted thereby to feed the drill forward while boring a hole. It will be understood that when the machine is being used as a drill the feeding of the frame 13 as produced by the engagement of the nut with the shaft 24 would be too rapid. Consequently the above-described feeding mechanism is used to properly feed the drill.

In Fig. 7 of the drawings is shown a modified form of the operating mechanism. In this instance the vertically-disposed drive-shaft 31 is provided on its upper end with a beveled gear-wheel 47, with which is adapted to mesh a bevel gear-wheel 48, mounted on a horizontally-disposed shaft 49, journaled in the upper end of the frame 19. On each end of the shaft 49 is secured a crank 50, thereby permitting the machine to be operated by two persons.

In order that the movable frame 13 may be quickly adjusted to engage and disengage the wrench-head with and from a nut, a lever 51 is pivotally mounted on the cross-bar 10, and to said lever is pivotally connected one end of a link 52, the opposite end of which is connected to the cross-bar 15 of the movable frame 13, whereby upon releasing the threaded end of the shaft 24 and operating said lever said movable frame may be adjusted back and forth on said stationary frame to bring the former to the desired position.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a track-machine, the combination with a stationary frame, of a movable frame slidably mounted on said stationary frame, means whereby said movable frame is adjusted, a driven shaft mounted in said movable frame, a wrench-head carried by said shaft, means whereby said driven shaft is turned to cause said wrench-head to screw or unscrew a nut, and a two-part nut whereby said wrench-head is adapted to be automatically moved toward and from said nut when the latter is being screwed on or off a bolt, substantially as described.

2. In a railway-track machine, the combination with a stationary frame, of a movable frame slidably mounted on said stationary frame, means whereby said movable frame is adjusted, a flexible driven shaft mounted in said movable frame, a wrench-head on one end of said shaft, a drive-shaft geared to said flexible driven shaft to turn the same, and a two-part nut engaging the threaded opposite end of said flexible shaft to automatically feed said wrench-head forwardly or backwardly when screwing a nut on or off a bolt, substantially as described.

3. In a railway-track machine, the combi-

nation with a stationary frame, of a movable frame slidably mounted on said stationary frame, means whereby said movable frame is adjusted, a flexible driven shaft mounted in said movable frame, a head on one end of said shaft, a bevel-gear fixed on said shaft, a vertically-disposed drive-shaft mounted on said movable frame, a bevel-pinion fixed on the lower end of the same and adapted to engage the bevel-gear on said driven shaft, a crank-handle arranged on the upper end of said drive-shaft, and a two-part nut engaging the threaded end of the driven shaft whereby upon the turning of said driven shaft in one direction or the other the same will be automatically fed forwardly or rearwardly, substantially as described.

4. In a railway-track machine, the combination with a stationary frame, of a movable frame slidably mounted on said stationary frame, means whereby said movable frame is adjusted, a flexible driven shaft mounted in said movable frame, a head on one end of said shaft the opposite end of said shaft being threaded, a bevel-gear fixed on said shaft, a vertically-disposed drive-shaft mounted on said movable frame, a bevel-pinion fixed on the lower end of the same and adapted to engage the bevel-gear on said driven shaft, a crank-handle arranged on the upper end of said drive-shaft, clamping-bars mounted on said stationary frame, and a sectional nut carried by said bars and adapted to normally engage the threads on the end of said driven shaft, whereby upon turning said shaft in one direction or the other the same will be fed forwardly or rearwardly, substantially as described.

5. In a railway-track machine, the combination with a stationary frame adapted to engage a track-rail of a movable frame, slidably mounted on said stationary frame, a lever pivoted on said stationary frame, a link connected to said lever and to said movable frame whereby the latter may be manually adjusted on said stationary frame, a driven shaft mounted in said movable frame, a head carried by said shaft, means whereby said driven shaft is turned to cause said head to rotate, and a two-part nut whereby said head is adapted to be automatically moved in the direction of said nut when the latter is being screwed on or off a bolt, substantially as described.

6. In a railway-track machine, the combination with a stationary frame, of a movable frame slidably mounted on said stationary frame, means whereby said movable frame is adjusted, a flexible driven shaft mounted in said movable frame, a wrench-head on one end of said shaft the opposite end of said shaft being threaded, a bevel-gear fixed on said shaft, a vertically-disposed drive-shaft mounted on said movable frame, a bevel-pinion fixed on the lower end of the same and adapted to engage the bevel-gear on said driven shaft, a crank-handle arranged on the upper end of said drive-shaft, clamping-bars mounted on said stationary frame, a sectional nut, one part of which is secured to each of said clamping-bars, and cam-lugs and a lever whereby said bars are shifted to bring the parts of said nut into and out of engagement with the threaded end of the driven shaft, substantially as described.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

SIMON PETER MICKEY.
CHARLES W. CALDWELL.

Witnesses:
B. D. BEAMER,
E. A. WOLFE.