

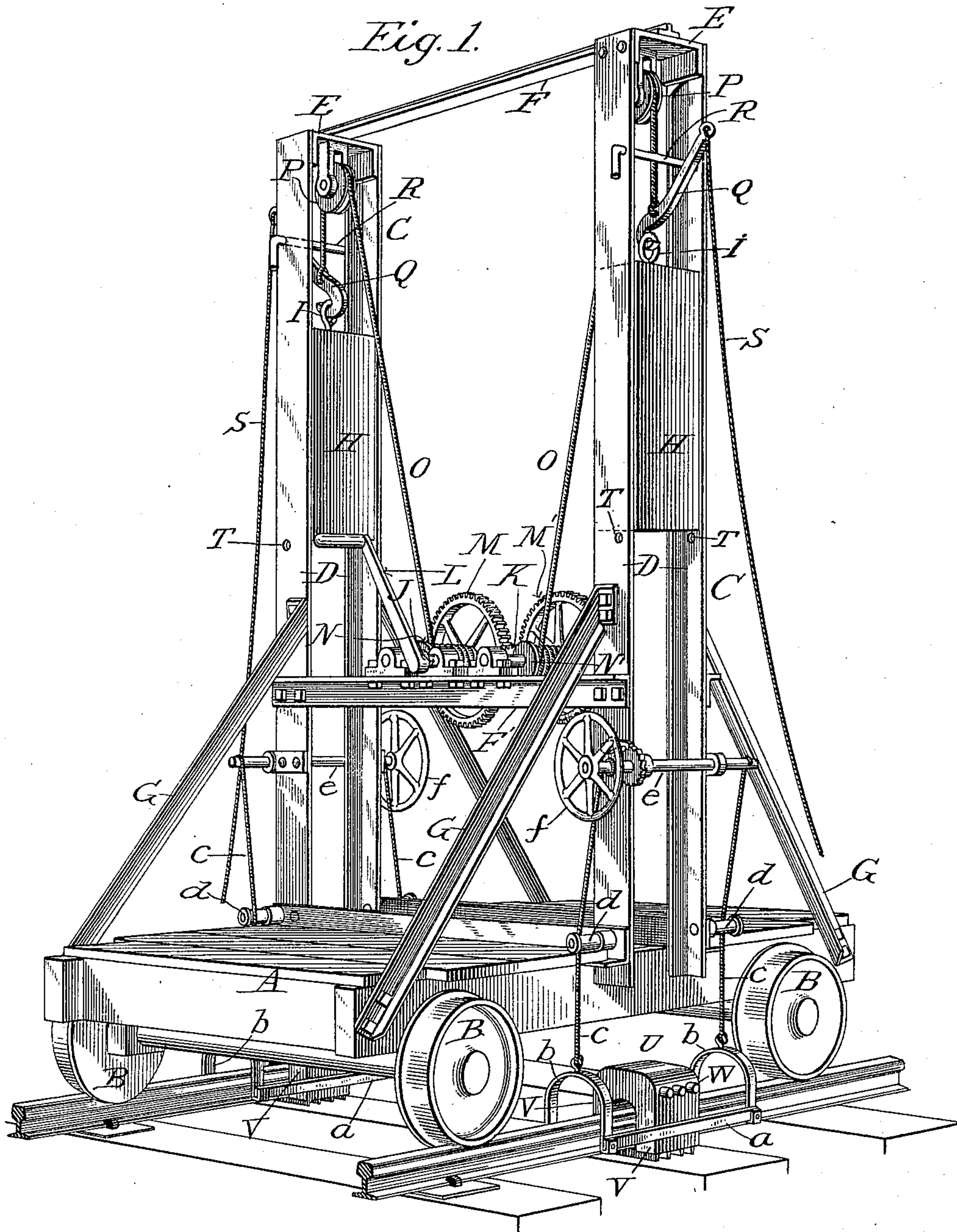
(No Model.)

2 Sheets—Sheet 1.

G. W. DOWE.
MACHINE FOR DRIVING TIE PLATES.

No. 594,731.

Patented Nov. 30, 1897.



Witnesses

C. C. Burdine
D. E. Burdine

Inventor:
George W. Dowe,
by Dodge and Sons,
Attorneys.

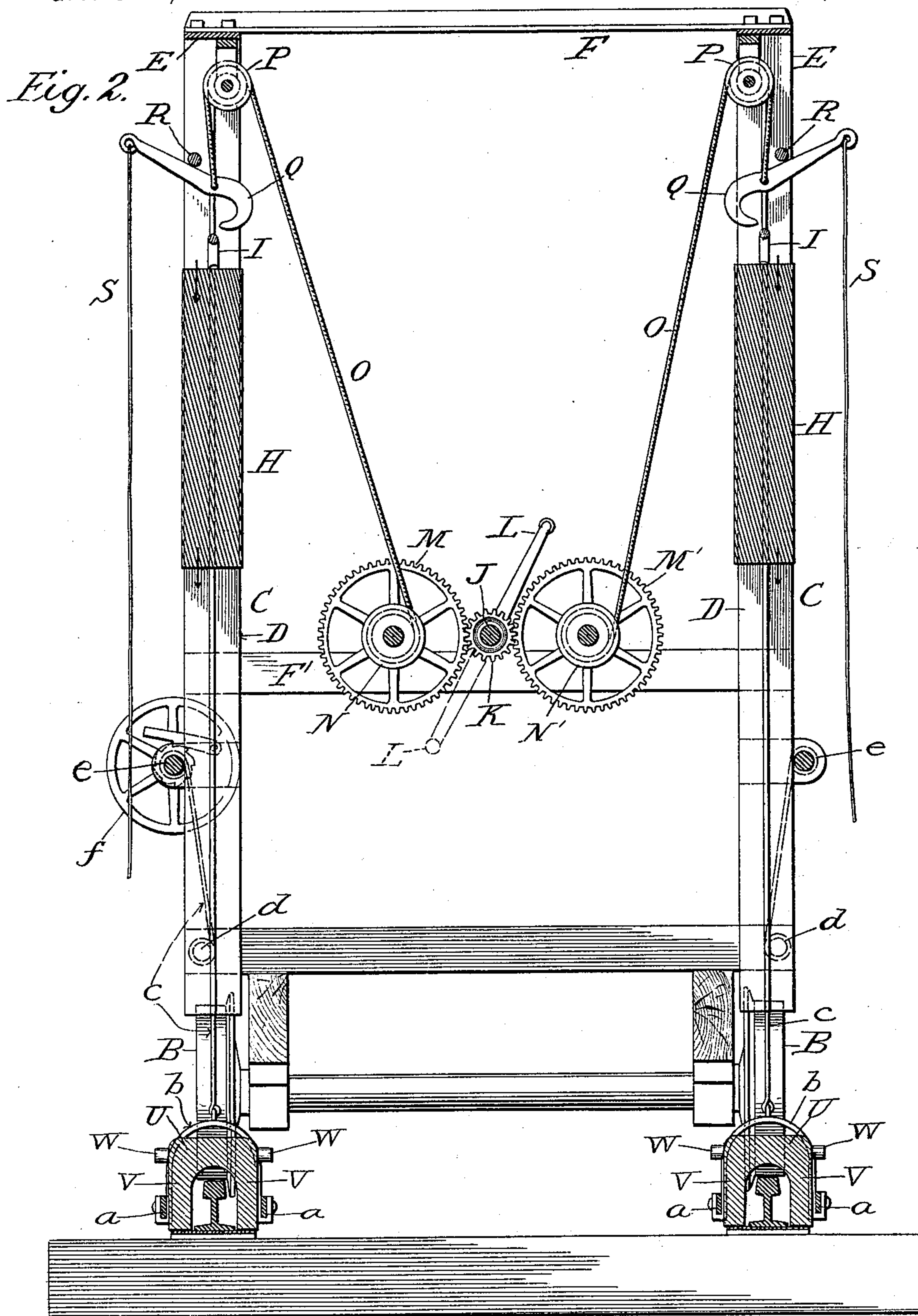
(No Model.)

2 Sheets—Sheet 2.

G. W. DOWE.
MACHINE FOR DRIVING TIE PLATES.

No. 594,731.

Patented Nov. 30, 1897.



Witnesses

C. C. Zindene

D. E. Burdine

Inventor

George W. Dove,
by Dodge & Sons,
Attorneys.

UNITED STATES PATENT OFFICE.

GEORGE W. DOWE, OF CARBONDALE, PENNSYLVANIA.

MACHINE FOR DRIVING TIE-PLATES.

SPECIFICATION forming part of Letters Patent No. 594,731, dated November 30, 1897.

Application filed October 8, 1897. Serial No. 654,574. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. DOWE, a citizen of the United States, residing at Carbondale, in the county of Lackawanna and State of Pennsylvania, have invented certain new and useful Improvements in Machines for Driving Tie-Plates, of which the following is a specification.

My present invention pertains to a machine for driving tie-plates, the construction and advantages of which will be hereinafter set forth, reference being had to the accompanying drawings, wherein—

Figure 1 is a perspective view of the machine, and Fig. 2 a vertical sectional view.

Many millions of tie-plates are now used in the construction of the modern railway-bed, and most of them, if not all, have heretofore been driven by hand.

The object of my invention is to construct a machine which will drive the plates quickly and accurately, and thus do away with so much manual labor at a great saving of time.

With this end in view I have designed and constructed the machine shown in the annexed drawings, in which—

A designates the platform of the machine, mounted upon suitable wheels B, placed upon the axles at standard gage or at any gage desired. Extending upwardly from opposite sides of the platform in line with the tracks upon which the machine is mounted are vertical columns C, preferably composed of two beams D, connected at their upper ends and to each other by cross-heads E, said heads being connected by a cross-brace F. At a point intermediate the platform and the upper ends of the columns cross-braces F' F' are provided. Suitable lateral braces G are also employed, said braces being secured to the ends of the platform, as shown in Fig. 1. Between the beams D there is mounted a weight H, designed to be raised and to be dropped from its raised position, each weight being provided with an eye I in its upper end. Upon the cross-braces F' F' there is mounted an axle J, carrying at one end a small pinion K and upon its opposite end cranks L. Meshing with said pinion K upon its opposite sides are larger gears M M', suitable winding-drums N N' being secured upon the axes of said gears M M'. Ropes or cables O pass from

these drums up over pulley P, secured to the cross-heads E at the upper end of the columns C, and to the opposite ends of the ropes or cables are secured hooks Q. These hooks, as shown in Fig. 1, are designed to engage the eyes I and to elevate the weights when proper motion is imparted to the cranks L. In each column near its upper end there is placed a cross-rod R, the location of the rod being such that as the hook and its attached weight are elevated the hook will come in contact with the rod and its long end be held against any further upward movement, while the short end is elevated to that point where the eye will become disengaged and the weight allowed to fall. To the outer or long end of the hook is attached a cord or rope S, by which the hooks may be drawn down ready to be again engaged with the weights. Openings T are also formed in the columns, and through said openings there may be inserted a bar or rod for the purpose of holding the weights in an elevated position should it be so desired when moving the machine from one point to another. The weights are designed to act directly upon anvils U of the form shown in Figs. 1 and 2. These anvils comprise two legs V, connected at their upper end, designed to straddle the rails and bear upon the upper face of the tie-plate, as clearly indicated in both figures. Extending from each side of the anvils are pins or projections W, designed to be engaged by a swinging cradle when it is desired to elevate the anvil and the machine is to be moved. This cradle comprises two horizontal side bars a, connected at their ends by bails b, the ends of the bars being seated and fastened in the upturned ends of the bails. Ropes or cables c, connected to the bails, pass up back of rollers d and are connected to a cross-shaft e. Said shaft is provided with a hand-wheel f and with a pawl and detent to hold the shaft against rotation when the anvil is elevated.

The parts, as shown in the drawings, are in position ready to drive the plates upon each end of a tie. It will be noted that the anvils have been lowered and rest squarely upon the tie-plate and the cradles have been dropped down to such an extent that they are clear of the pins or projections W. When thus arranged, the weights are permitted to fall

either by turning the crank and bringing the hooks into contact with the cross bars or rods R, thus releasing them, or by pulling down upon the rope S. The weights descend and
 5 hitting the anvils drive the plates truly and squarely into proper position. The hooks are then drawn down and the weights elevated, as are also the anvils, this latter operation being accomplished by manipulating
 10 the hand-wheels *f*, the bars *a* coming up beneath the pins W, lifting the anvils clear of the tie-plate. The machine is then moved onto the next tie, where the plates are or have been inserted, and the operation of driving
 15 is repeated.

It will be readily seen that the machine is simple in construction and easy of manipulation, and from actual use it has been found highly efficient and rapid in its operation.

20 The plates are set evenly upon each side, so that the rail has a firm and equal bearing thereon at all points.

It is manifest that the construction may be varied without departing from the spirit of
 25 my invention, and I do not, therefore, desire to limit myself to the exact details as shown.

Having thus described my invention, what I claim is—

30 1. In a machine for driving tie-plates, the combination of a frame; a weight; means for elevating and releasing the weight; an anvil; and means carried by the frame independent of the weight for raising and lowering the anvil.

35 2. In a machine for driving tie-plates, the combination of a frame; a weight; means for elevating and releasing the weight; an anvil; and a cradle suspended from the frame designed to come into contact with the anvil
 40 and raise the same as the cradle is elevated.

45 3. In a machine for driving tie-plates, the combination of a frame; a weight; means for elevating and releasing the weight; an anvil; a cradle suspended from the frame; means for raising and lowering the cradle; and means for connecting the anvil and cradle as the cradle is elevated.

50 4. In a machine for driving tie-plates, the combination of a frame; columns extending therefrom; weights mounted in the columns; means for elevating and releasing said weights; cradles suspended from the frame beneath the columns; means for raising and lowering the cradles; and anvils carried by
 55 the cradles.

5. In a machine for driving tie-plates, the

combination of a frame; columns extending up therefrom; weights mounted in the columns; means for elevating and releasing said weights; cradles suspended from the frame
 60 beneath the columns; means for raising and lowering the cradles; and anvils carried by the cradles, the anvils being provided with depending legs and means to engage the cradle.

6. In a machine for driving tie-plates, the
 65 combination of a portable frame; columns extending up therefrom; weights mounted in the columns; means for elevating and releasing the said weights; cradles suspended from the frame beneath the columns, said cradles comprising the horizontal bars *a* connected at
 70 their ends by bails *b*; cables or ropes connected to said bails and extending up to and connected with a cross-shaft *c*; and an anvil with pins or projections extending from the
 75 sides thereof designed to be engaged by the cross-bars when the cradle is elevated.

7. In a machine for driving tie-plates, the combination of a portable frame; columns extending up therefrom; cross-braces connecting said columns; a small pinion mounted upon said cross-braces; gears M M' meshing with said pinion; drums connected to said
 80 gears; ropes or cables passing around said drums and up to the upper end of the columns; hooks carried by the ends of the cables and designed to engage the weights; cradles suspended from the frame beneath the columns, said cradles comprising the horizontal bars
 85 *a* connected at their ends by bails *b*; cables or ropes connected to said bails and extending up to and connected with a cross-shaft *c*; and an anvil with pins or projections extending from the sides thereof designed to be engaged by the cross-bars when the cradle is elevated.
 90 95

8. An anvil for driving tie-plates, comprising two legs connected at their upper ends, and lifting-pins extending from each side of the anvil on opposite sides of the legs, substantially as and for the purpose described. 100

9. In a tie-plate driver, the combination of a portable frame; a cradle suspended therefrom; means for raising and lowering said cradle; and an anvil carried by the cradle. 105

In witness whereof I hereunto set my hand in the presence of two witnesses.

GEORGE W. DOWE.

Witnesses:

JOHN MOON,
 W. R. BAKER.