G. A. ANDERSON.

TAMPING DEVICE.

APPLICATION FILED MAR. 8, 1909.

966,292.

Patented Aug. 2, 1910.

2 SHEETS—SHEET 1.

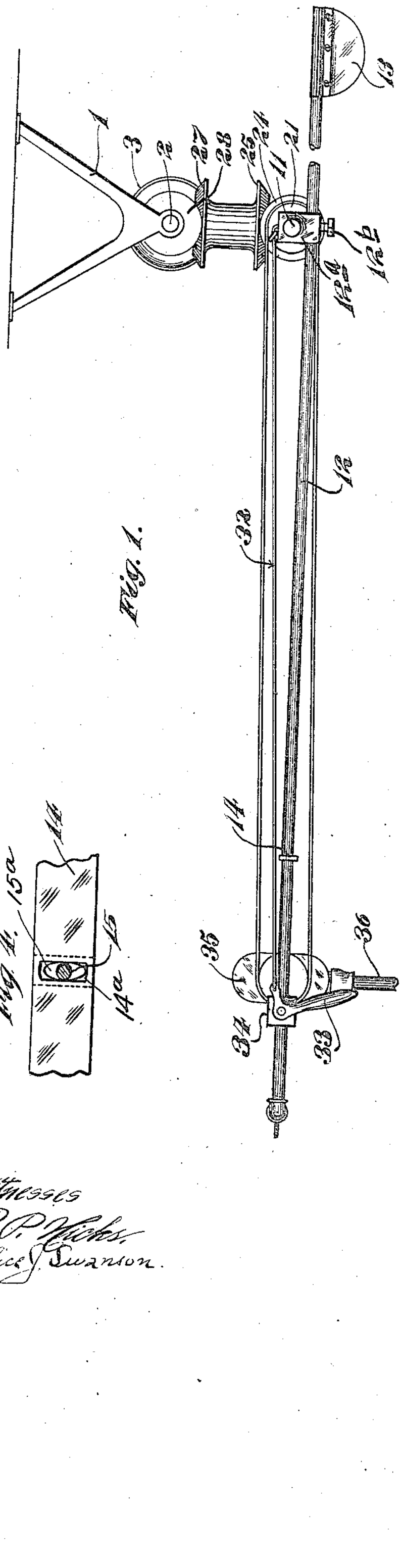

Fig. 1.

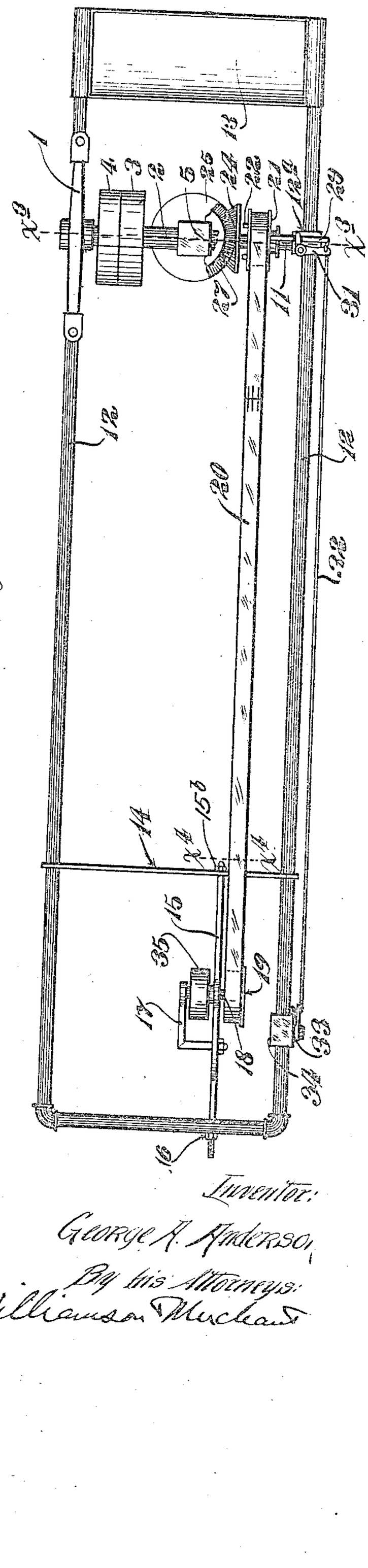

Fig. 2.

Fig. 4.

Witnesses

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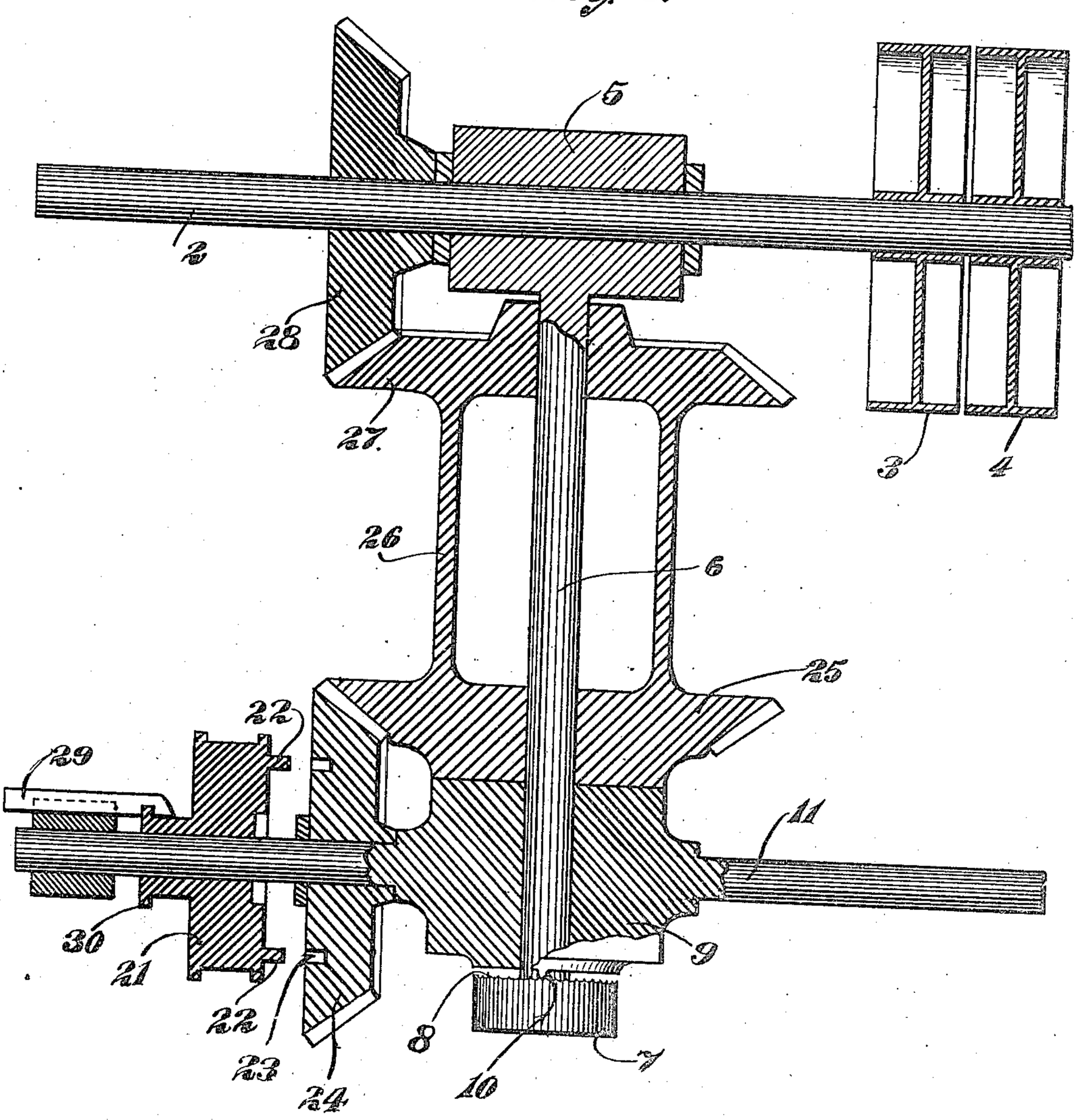
2 SHEETS—SHEET 2.

Fig. 3.



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UNITED STATES PATENT OFFICE.

GEORGE A. ANDERSON, OF FARGO, NORTH DAKOTA.

TAMPING DEVICE.

966,292. Specification of Letters Patent. Patented Aug. 2, 1910.

Application filed March 8, 1909. Serial No. 481,915.

To all whom it may concern:

Be it known that I, GEORGE A. ANDERSON, citizen of the United States, residing at Fargo, in the county of Cass and State of North Dakota, have invented certain new and useful Improvements in Tamping Devices; and I do hereby 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.

My invention has for its especial object to provide an improved tamping device for use in connection with concrete block and brick machines or other molding apparatus, and to this end, it consists of the novel devices and combinations of devices hereinafter described and defined in the claims.

In the accompanying drawings, which illustrate the invention, like characters indicate like parts throughout the several views.

Referring to the drawings, Figure 1 is a view in side elevation showing the improved tamping device, some parts being broken away; Fig. 2 is a plan view of the parts shown in Fig. 1; Fig. 3 is an enlarged vertical section taken on the line x^3 x^3 of Fig. 2, some parts being broken away; and Fig. 4 is a section on the line x^4 x^4 of Fig. 2.

The device may be supported in different ways but, as shown, it is suspended from a bearing bracket 1 suitably secured to the ceiling of a building or other overhead support. Journaled in the lower portion of this bracket is a shaft 2 having a fixed pulley 3 and a loose pulley 4. On the intermediate portion of this shaft is a loose collar 5 having a depending stem 6 provided at its extreme lower end with a head 7 formed with teeth or serrations 8 on its upper face. Rotatively mounted on the stem 6, just above the head 7, is a hub 9 having one or more teeth 10 that are engageable with the teeth 8 of the said head. A rod or shaft 11 projects in opposite directions from the hub 9 and on the ends of this shaft is pivotally mounted a universally movable rectangular frame 12. This is accomplished by bearing blocks 12^a that are pivotally mounted on the shaft 11 and through which the side bars of the frame 12 are arranged to slide, to vary the length of the operative end of said frame. Set screws 12^b serve to adjustably secure said blocks 12^a on the sides of said frame 12. At its short end, the frame 12 is provided with a counter weight shown as afforded by an adjustable sheet metal pan 13, which contains more or less heavy material, such, for instance, as sand. A transverse tie rod 14 connects the sides of the frame 12 a short distance from its long free end, and this bar is connected by another tie bar 15 to the extreme free end of said frame. The tie bar 14 is free to slide upon the sides of the frame 12 and the outer end of the tie bar 15 is threaded, is passed through a perforation in the transverse free end portion of said frame and is provided with a tightening nut 16, for a purpose which will presently appear. At its inner end, the bar 15 has an oval or flattened trunnion 15^a that works loosely in an elongated seat 14^a formed in the bar 14. A nut 15^b on the extreme end of said bar 15 secures the two bars 14 and 15 together. The trunnion 15^a and seat 14^a limit the rocking motion of the bar 15.

A bearing bracket 17 is rigidly secured to the tie bar 15. A short counter shaft 18 is journaled in the bracket 17 and in the bar 15 and is provided with a small pulley 19. A driving belt 20 runs over the pulley 19 and over another small pulley 21 that is mounted for rotary and sliding movements on the pivot rod or shaft 11. This pulley 21 is shown as provided with projecting studs 22 that are adapted to engage seats 23 of a bevel gear 24 loosely mounted in the same rod 11. This gear 24 meshes with a bevel gear 25 that is loosely journaled on the depending stem 6 and is connected by a sleeve 26 to a bevel gear 27. The bevel gear 27 meshes with a bevel gear 28 carried by the driving shaft 2.

As is evident, when the shaft 2 is constantly driven, the bevel gear 24 also will be constantly driven. When the pulley 21 is clutched to the gear 24, the counter shaft 18 will be rotated. The engagement of the said pulley 21 with the said wheel 24 is preferably accomplished by the following connections. The numeral 29 indicates a short sliding bar mounted on one of the side portions of the frame 12 and provided with a notch that engages an angular flange 30 of the said pulley 21. A notch in the bar 29 is engaged by one arm of a small bell crank 31 pivotally mounted on the same side of the frame 12. The other end of the bell crank 31 is connected by a small rod 32

to an operating lever 33 which, as shown, is pivoted to a bearing block 34 secured to the frame 12 in the vicinity of the shaft 18.

A casing or hollow head 35 is loosely mounted on the shaft 18 and supports a tamping plunger 36 with freedom for vertical movements in respect thereto. At its lower end, the tamping plunger 36 is shown as provided with a tamping head 37.

So far as my present invention is concerned, any suitable means may be provided for imparting vertical reciprocatory movements to the tamping plunger 36 under rotation of the shaft 18, but preferably I would employ a motion transforming device of the character set forth and claimed in my pending application S. N. 473,387, filed January 20, 1909, entitled "Mechanical movement".

The counter weight 13 should be such as to counter-balance the frame 12 and parts carried at the free end thereof. The slack of the belt 20 may be taken up from time to time by adjusting the nut 16 on the threaded outer end of the bar 15. Any suitable clutch may be, of course, employed for connecting the pulley 21 to the gear 24. The engagement of the teeth 10 of the hub 9 with the teeth 8 of the head 7 will hold the frame 12 against rotation except when the frame is by the hand forced in a horizontal direction so as to cause the same to rotate on the stem 6. As is evident, the frame 12 may be rotated in a horizontal direction on the stem 6 and may be oscillated in a vertical direction on the pivot rods 11. Furthermore, the frame 12 may be oscillated or rotated around the shaft 2 so as to turn the said frame with its tamping plunger in a horizontal position, or even with its tamping plunger projecting upward. The tamping plunger itself may be oscillated in a direction toward and from the stem 6, and it may be oscillated laterally as far as permitted by the engagement between flattened trunnion 15^a and seat 14^a. The stem 6, by oscillation, permits the tool 36 to be moved bodily in a direction toward and from the point of suspension of the frame 12. These movements adapt the tamping plunger for universal movements in any direction and into any position within the limits of its reach.

Without interrupting the movement of the driving shaft 2, the tamping plunger may be thrown into and out of action simply by manipulation of the lever 33.

This improved so-called tamping device, while especially designed for the purpose above stated, may, nevertheless, be generally used wherever tamping, riveting, chiseling, or similar devices, are required. Furthermore, a drill or other rotary tool might also be mounted and driven by substantially the same mechanism.

What I claim is:

1. In a device of the kind described, the combination with a suitably supported driving shaft, of a pivotally mounted stem depending from said shaft, a hub rotatively mounted on the lower end of said stem, a pivot rod projecting diametrically from said hub, a frame pivotally mounted on said rod, a tool pivotally mounted on the free end portion of said frame, and means for driving said tool comprising a bevel gear on said driving shaft, an upper bevel gear meshing with said gear, a lower bevel gear connected to rotate with said upper bevel gear, a bevel gear on said pivot rod meshing with said lower bevel gear, a pulley on said pivot rod having interlocking engagement with the adjacent bevel gear, means for moving said pulley to and from operative position, a pulley at the free end of said frame, and a belt running over said two pulleys, substantially as described.

2. In a device of the kind described, the combination with a suitably supported driving shaft, of a pivotally movable stem depending therefrom and provided at its lower end with a head having a serrated upper surface, a hub rotatively mounted on said stem and provided with a tooth engageable with the serrations of said head, a frame pivotally supported from said hub, a tool carried by said frame, and means for driving said tool from said driving shaft.

3. In a device of the kind described, the combination with a suitable supporting driving shaft, of a stem depending from said shaft and mounted for pivotal movements on the axis thereof, a frame pivotally supported entirely from said stem for vertical and horizontal movements in a vertical plane independent of said frame, a tool carried by said frame and mounted for oscillatory movements, and means for driving said tool from said driving shaft.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE A. ANDERSON.

Witnesses:
HARRY D. KILGORE,
F. D. MERCHANT.