

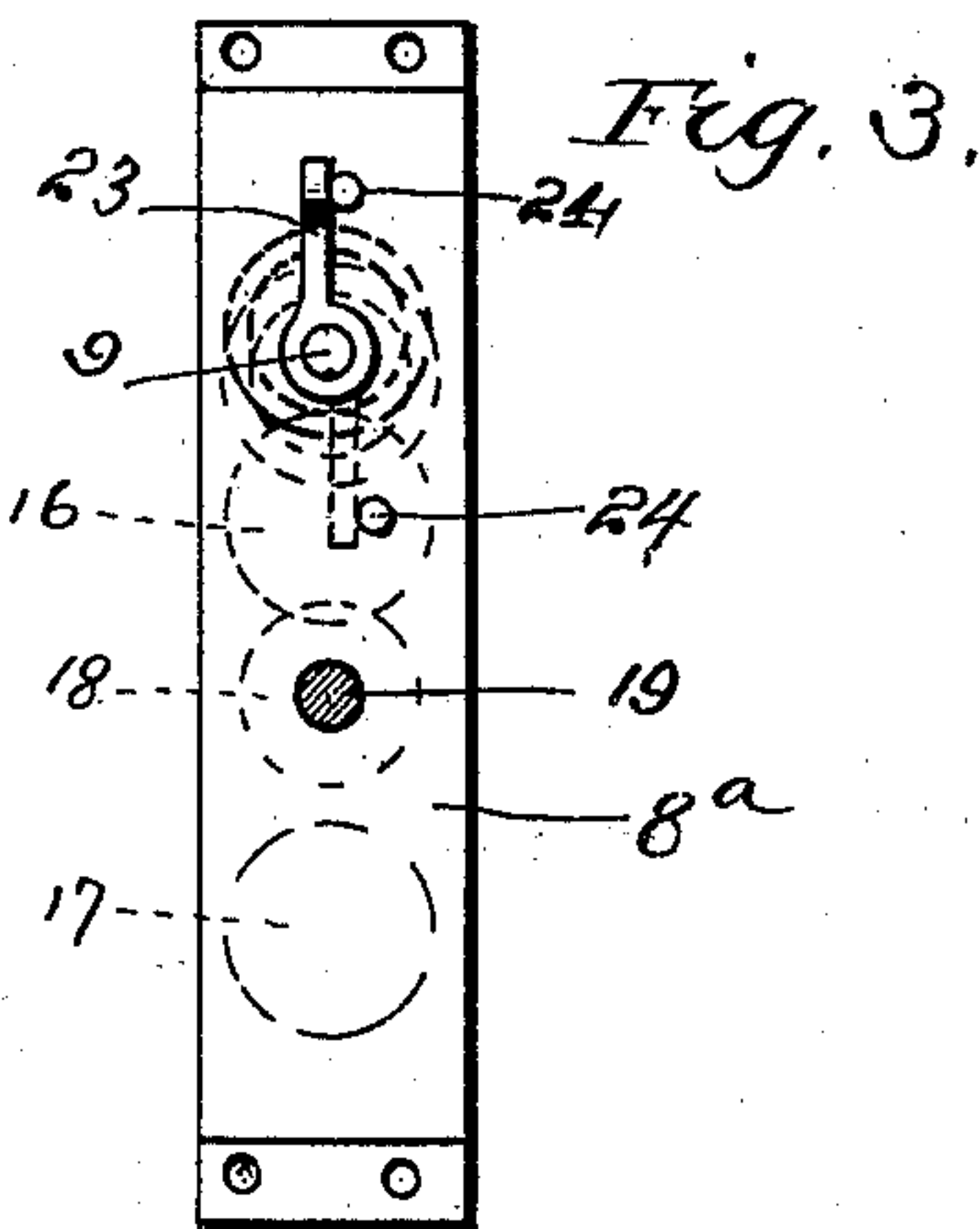
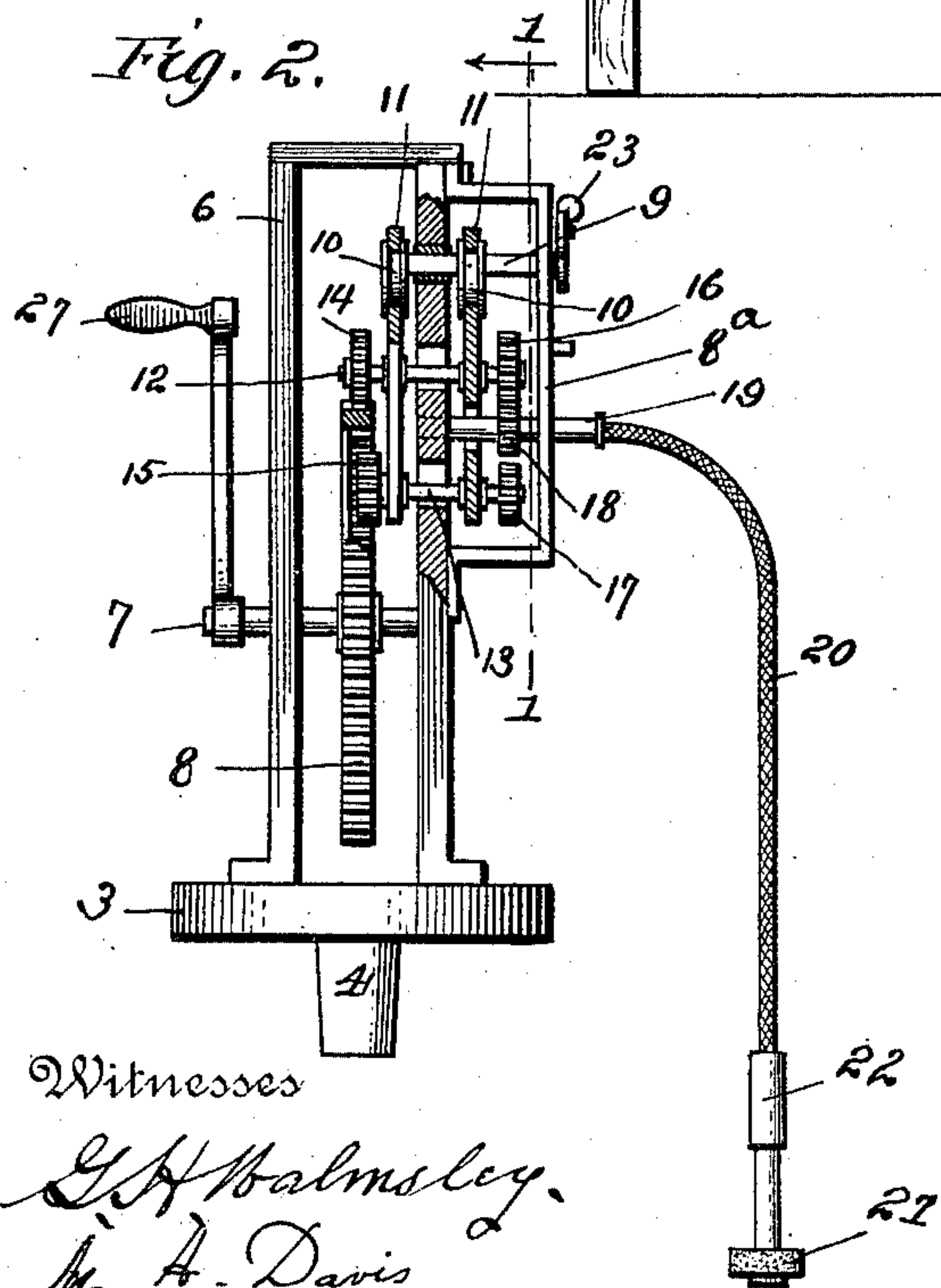
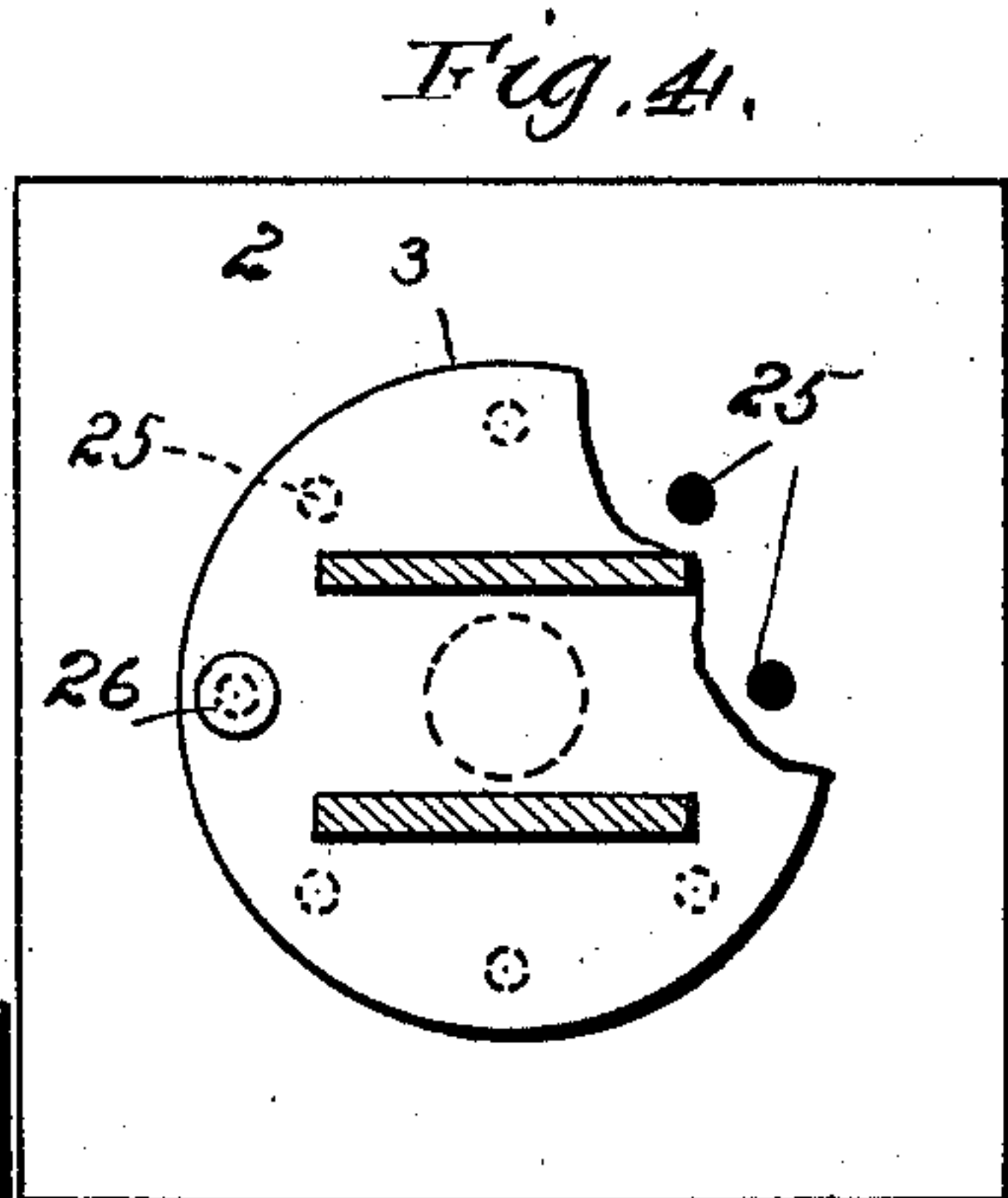
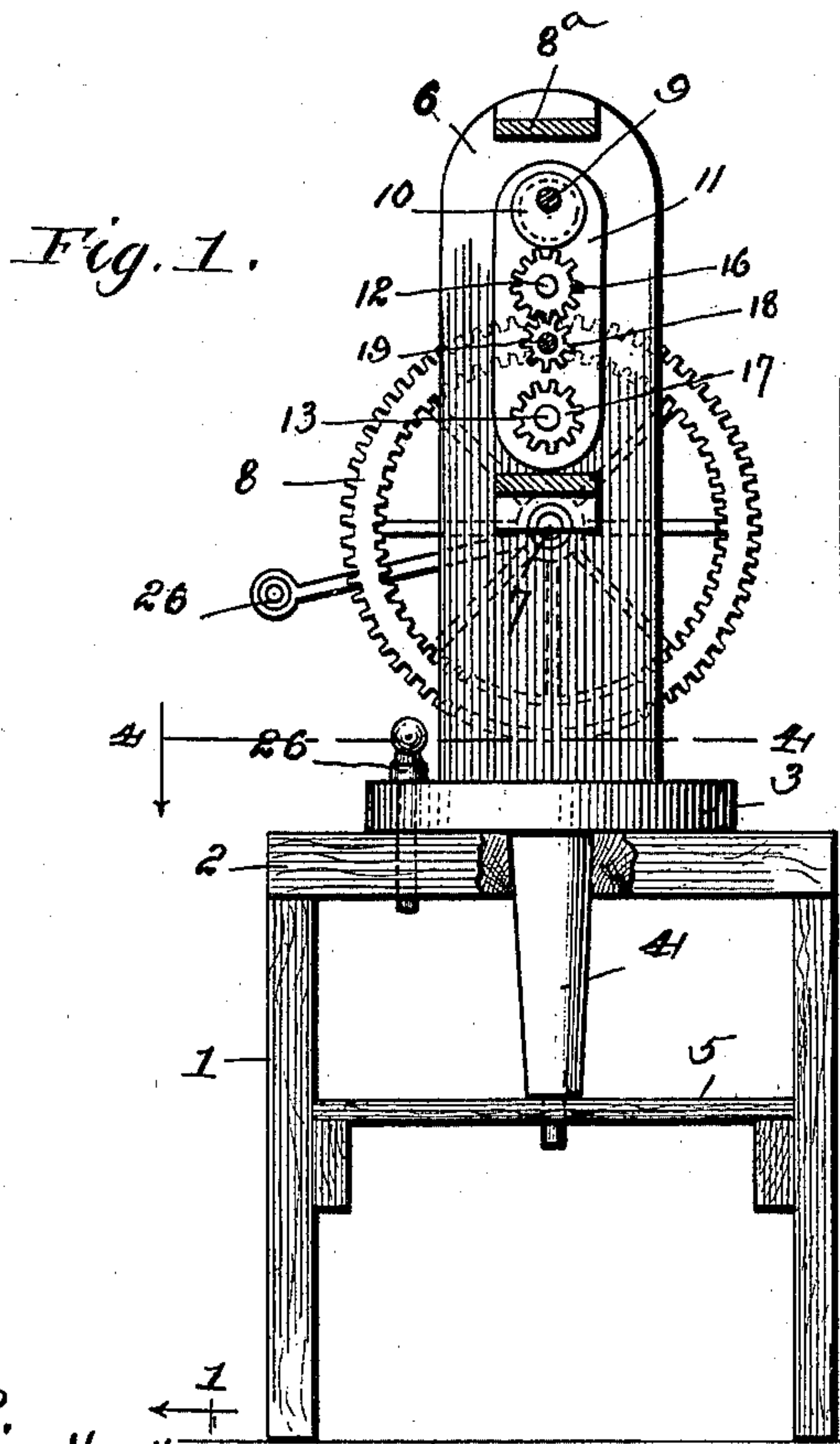
No. 610,725.

Patented Sept. 13, 1898.

M. A. ROSS.
MACHINE FOR GRINDING HORSESHOE CALKS.

(Application filed Apr. 8, 1898.)

(No Model.)



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UNITED STATES PATENT OFFICE.

MYRON A. ROSS, OF MONTEREY, MICHIGAN.

MACHINE FOR GRINDING HORSESHOE-CALKS.

SPECIFICATION forming part of Letters Patent No. 610,725, dated September 13, 1898.

Application filed April 8, 1898. Serial No. 676,938. (No model.)

To all whom it may concern:

Be it known that I, MYRON A. ROSS, a citizen of the United States, residing at Monterey, in the county of Allegan and State of Michigan, have invented certain new and useful Improvements in Horseshoe-Calk Grinders, of which the following is a specification, reference being had therein to the accompanying drawings, in which—

Figure 1 is a side elevation, partly in vertical section. Fig. 2 is an end elevation of the operating mechanism. Fig. 3 is a detail view of the lever for reversing the motion of the grinding-wheel. Fig. 4 is a horizontal sectional view on line 4 4 of Fig. 1.

The invention has for its object to provide a simple portable machine for grinding horseshoe-calks which may be readily adjusted to a suitable position to enable the operator to quickly and easily perform the grinding operation and to provide means for reversing the motion of the grinding-wheel.

The invention consists in the novel combination and arrangement of parts hereinafter described, and particularly pointed out in the claims appended.

Referring to the various parts by numerals, 1 designates a suitable support or table having a flat top 2. Upon this top is mounted a rotatable base 3, which carries the mechanism, said base being provided with a depending cylindrical post 4, which extends through a hole in the table-top, its reduced lower end passing through a cross-bar 5 of the support to steady the base 3. Mounted on this base is an upright frame 6, which carries a horizontal shaft 7. On this shaft is mounted a large externally and internally geared driving-wheel 8.

Supported in a bearing in one side of the frame 6, its outer end being journaled in a bracket 8^a, carried by the frame 6, is a rock-shaft 9, upon which are rigidly secured two separate eccentrics 10, one of said eccentrics being within the frame 6 and the other being between it and bracket 8. Hung on these eccentrics are two bars 11, which carry shafts 12 and 13, said shafts passing through slots in the frame 6. On these shafts are mounted small gears 14 and 15, respectively, which alternately gear with the external and internal

gears of wheel 8. The outer ends of these shafts are provided with gears 16 and 17, which alternately engage a gear 18, carried by a shaft 19, journaled in the frame 6 and bracket 8. To the outer end of this shaft is secured a flexible shaft 20, which carries the grinding or burnishing wheel 21. This wheel is provided with a loose sleeve 22, by means of which the operator may manipulate the grinding-wheel. The outer end of rock-shaft 9 is provided with a lever-arm 23, by means of which it may be partly rotated, stops 24 being provided to limit movement of said arm. By moving this arm against either one of these stops the eccentrics will be rotated sufficiently to bring either gear 14 or 15 into mesh with gear 8 and either gear 16 or 17 into mesh with gear 18. In the drawings the lever-arm is shown against the upper stop and gears 14 and 16 are in operative position. It will be readily seen that by turning arm 23 down against the lower stop 24 the gears 15 and 17 will be raised and brought into operative position and the gears 14 and 16 disengaged, thus reversing the direction of rotation of the shaft 19. It will thus be seen that by simply throwing down the arm 23 the necessity of stopping the heavy wheel 8 and reversing its motion when it is desired to reverse the motion of the grinding-wheel is avoided. This is of importance, as to stop a heavy wheel that is revolving with considerable speed is a strain on the operator and occasions a great delay.

It will be readily understood that the mechanism may be employed to drive a boring-drill, in which case the momentum of the heavy gear 8 may be utilized in withdrawing the boring-tool by simply throwing down the arm 23 when the boring operation is completed.

In the table-top under the rotatable base 3 is formed a circular series of holes 25, and in the base 3 is formed a hole which may by the rotation of the base be brought into register with any one of the holes 25, and adapted to pass through this hole and into any one of the holes 25 is a bolt 26. By means of this arrangement the frame carrying the mechanism may be rotated independently of the support or table and then locked in any desired

position. This is advantageous, as in many instances by a slight change in the position of the operating mechanism the work may be more readily accomplished. It is desirable
5 that this shifting of the mechanism be accomplished without the necessity of bodily shifting the table, as it may be done more readily and without inconvenience, and the support may be made heavy in order to form a solid
10 foundation for the mechanism.

Upon one end of the shaft 7 is mounted a crank, by means of which the mechanism may be driven. Any other driving means may be employed, if desired.

15 It will be understood that instead of the grinding or polishing wheel a brush or boring-tool may be secured to the end of the flexible shaft, if desired, in order to adapt the mechanism for use as a brushing or boring machine.
20

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

25 1. In a grinding-machine the combination of a support, a driving-wheel, rotating means therefor, a shaft carrying a rotary tool, means connecting said shaft with the driving-wheel, and means whereby the motion of the shaft

carrying the rotary tool may be reversed without reversing the motion of the driving-wheel. 30

2. In a grinding-machine the combination of a support, a driving-gear, rotating means therefor, a shaft carrying a rotary tool, a gear thereon, a sliding frame, two sets of gears carried thereby, and means for shifting said
35 frame to cause either of said sets of gears to connect the driving-gear and the gear on the tool-shaft whereby the motion of the tool-shaft may be reversed without reversing the motion of the driving-gear. 40

3. In a grinding-machine the combination of a support, a driving-gear, a shaft carrying a rotary tool, a gear on said shaft, a sliding frame, two sets of gears carried by said frame, a rock-shaft, means connecting said rock-
45 shaft to the frame whereby said frame may be shifted to cause either of said sets of gears to connect the driving-gear and the gear on the tool-shaft, substantially as described.

In testimony whereof I hereunto affix my
signature, in the presence of two witnesses,
this 12th day of March, 1898.

MYRON A. ROSS.

Witnesses:

FLORENCE B. BARRETT,
FIDUS E. FISH.