

No. 736,201.

PATENTED AUG. 11, 1903.

R. E. BROWN.
WELL BORER.

APPLICATION FILED MAY 21, 1903.

NO MODEL.

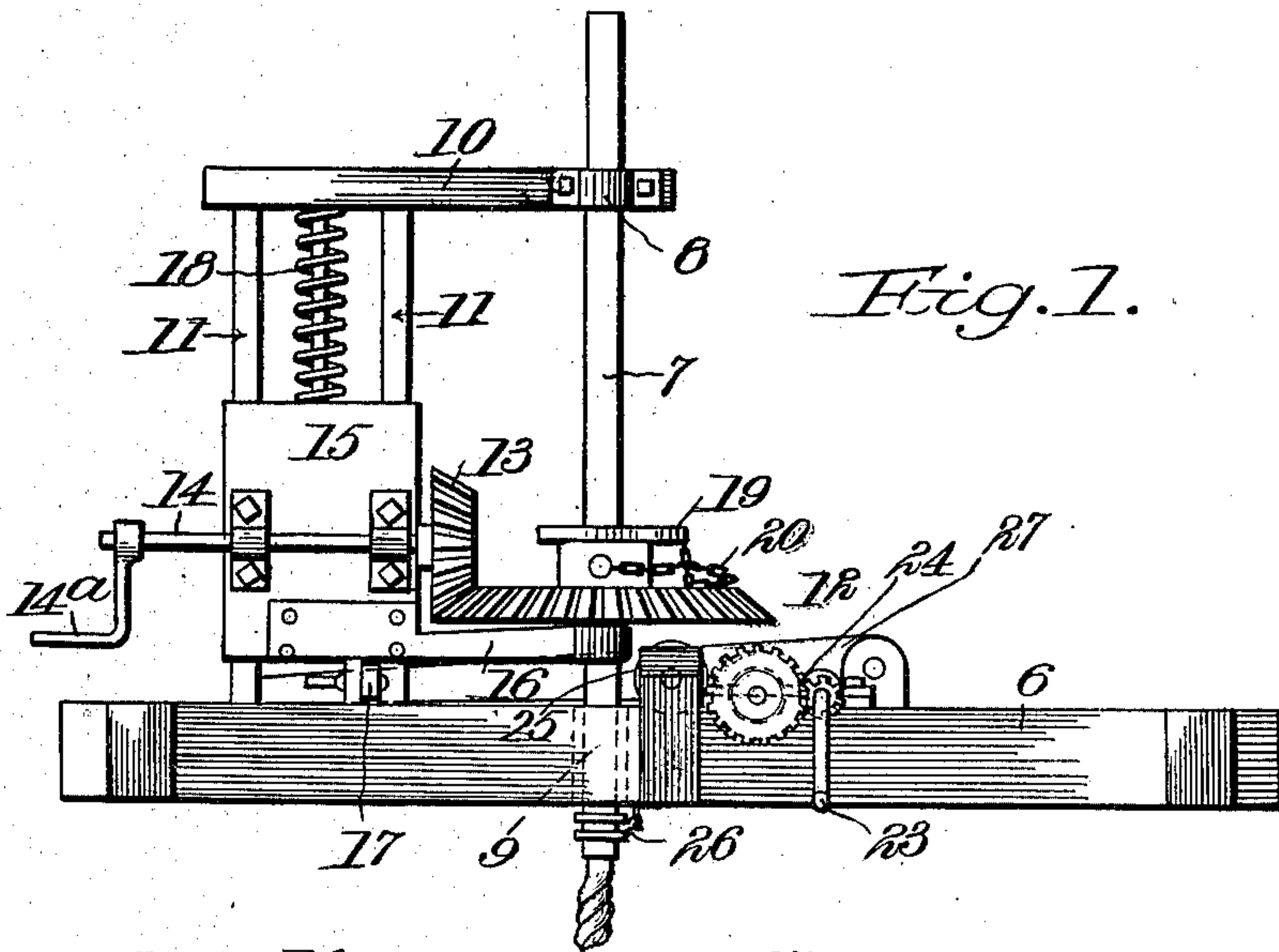


Fig. 1.

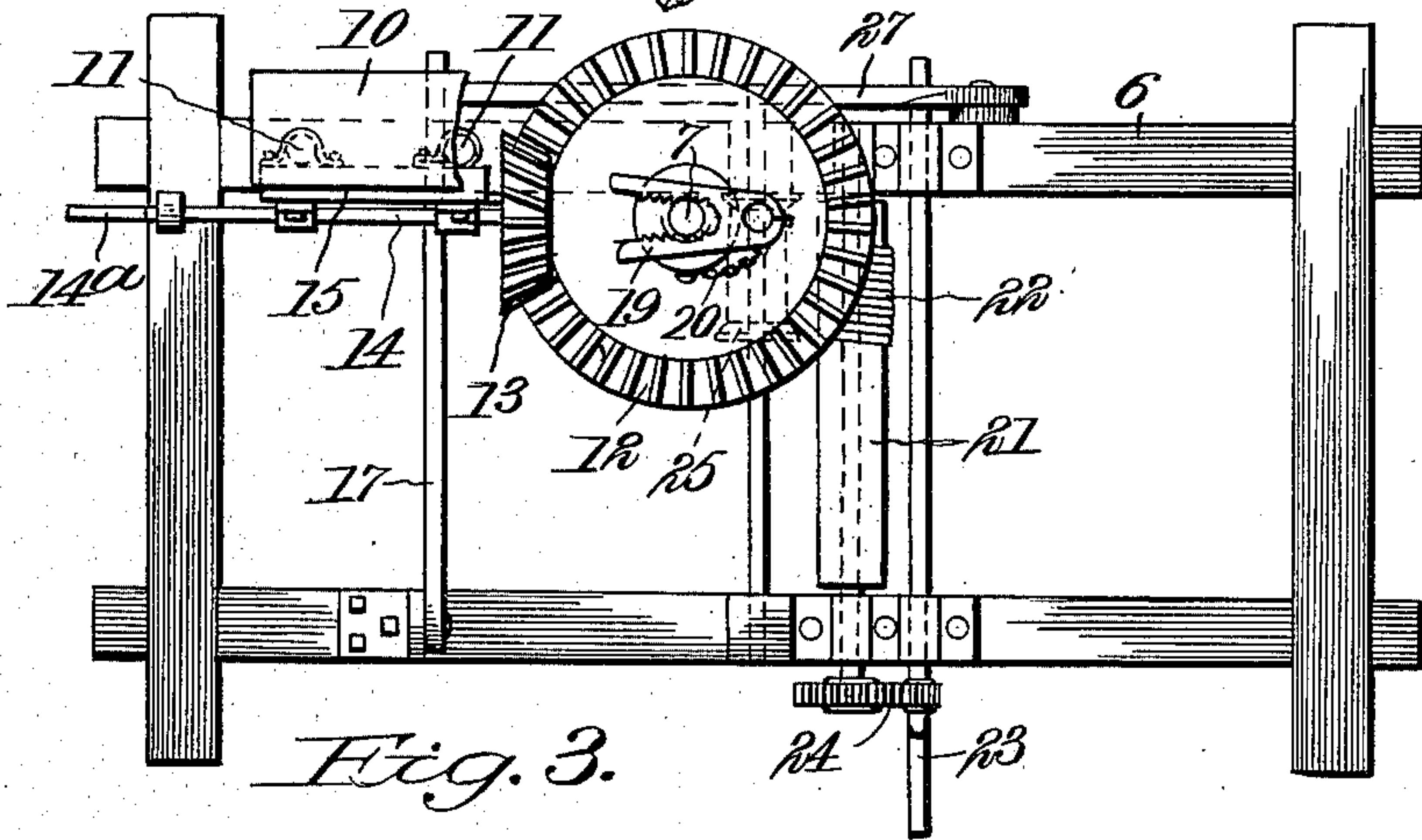


Fig. 3.

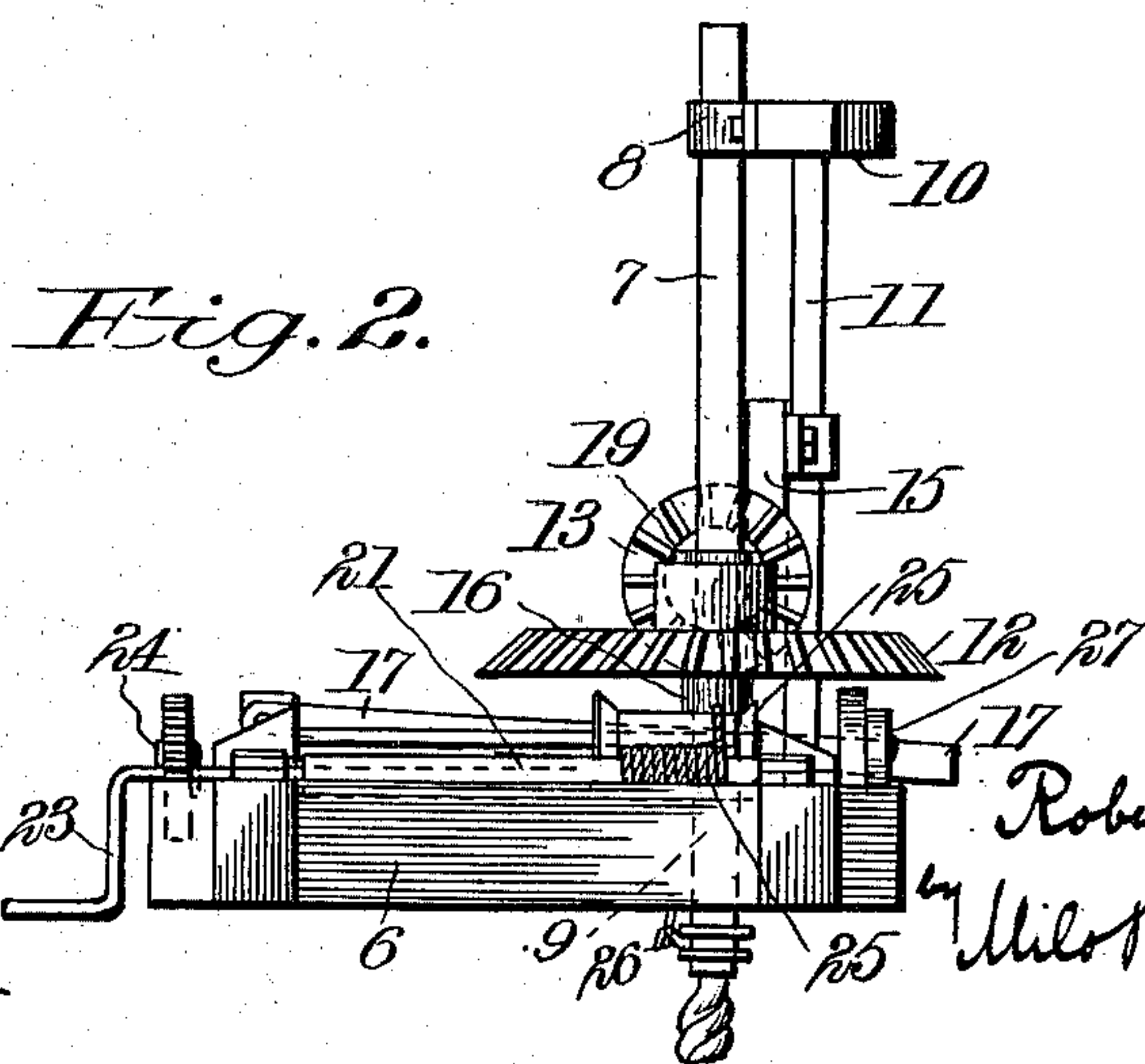


Fig. 2.

Witnesses

C. H. Walker, 23
Geo. E. Tew.

Inventor

Robert E. Brown
Milo B. Stevens, 4
Attorneys

UNITED STATES PATENT OFFICE.

ROBERT E. BROWN, OF LENNIG, VIRGINIA.

WELL-BORER.

SPECIFICATION forming part of Letters Patent No. 736,201, dated August 11, 1903.

Application filed May 21, 1903. Serial No. 158,146. (No model.)

To all whom it may concern:

Be it known that I, ROBERT E. BROWN, a citizen of the United States, residing at Lennig, in the county of Halifax and State of Virginia, have invented new and useful Improvements in Well-Borers, of which the following is a specification.

This invention relates particularly to that class of well-boring machines having a shaft carrying an earth-auger at the lower end thereof.

The object of the invention is to form an improved machine of the kind stated characterized particularly by means for raising and lowering the shaft and auger without lifting the driving-gear by which the shaft is rotated.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation of the machine. Fig. 2 is a side or end elevation thereof, and Fig. 3 is a plan.

Referring specifically to the drawings, the machine is mounted upon a frame 6, which is of suitable and proper height to place the working parts conveniently. An auger-shaft is indicated at 7 and has rotary and longitudinal movement in bearings 8 and 9, of which the former or upper bearing is supported on an arm 10, carried by standards 11 on the frame and the latter or lower bearing is secured to one of the timbers of the frame.

At 12 is indicated a bevel-gear loose on the shaft 7, and this gear is driven by a pinion 13 on the end of the shaft 14, supported on a carriage 15, which slides vertically on the standards 11 as guides. The shaft may be turned by any proper means. I have shown a hand-crank 14^a. As said before, the gear-wheel 12 is loose on the auger-shaft 7, and said wheel is supported in engagement with the pinion by an arm 16, which projects from the carriage 15 under and in supporting contact with the gear 12. It follows that when the carriage is raised or lowered the gear-wheel 12 is also raised or lowered therewith. The carriage is lifted by a lever 17 thereunder and drops by its own weight, assisted, if necessary, by a spring 18, bearing upon the top thereof.

To rotate the shaft 7, means are provided

to clutch the gear-wheel 12 thereto. These means consist of an alligator 19, which is connected by a chain 20 to the hub of the gear-wheel. To effect a rotary driving movement of the shaft, the alligator is clutched thereon, and rotation of the gear-wheel 12 carries the shaft with it, after which the alligator is disengaged to lift the shaft and auger to remove the dirt from the latter. Said lift is effected by a windlass comprising a drum 21 and its cable 22 and a hand-crank 23 to wind the cable on the drum through gearing 24. The cable passes over a roller 25 and is connected at its free end to the shaft, as indicated at 26. A brake-lever is indicated at 27, bearing upon the crank-shaft of the windlass, and serves to hold the windlass while the dirt is removed from the auger.

In operation the shaft is lowered with the auger to earth. The carriage 15 and driving-gear are then raised by the lever 17 to the highest point and the gear clutched to the shaft by means of the alligator. This puts the weight of the carriage and gear and the pressure of the spring 18 on the shaft, which assists in driving the auger in the ground. The shaft is then rotated by the gearing referred to until the auger is full. The alligator is then released and the shaft lifted by the windlass and the dirt removed. The shaft is then dropped for the succeeding operation.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a well-borer, the combination with the auger-shaft, and means to raise and lower the same, of a vertically-movable carriage, a driving-gear supported thereby, and a clutch between the gear and the shaft permitting relative vertical movement.

2. In a well-borer, the combination with the auger-shaft, and means to raise and lower the same, of a vertically-movable carriage, a driving-gear supported thereby including a gear-wheel loose on the shaft, and a clutch between the wheel and the shaft.

3. In a well-borer, the combination with the auger-shaft, and means to raise and lower the same, of a vertically-movable carriage, a driving-gear supported thereby including a gear-wheel loose on the shaft, and a clutch carried by the gear-wheel and engageable with the shaft at different places along the same.

4. In a well-borer, the combination with the frame and auger-shaft, and vertical guides on the frame, of a carriage slidable in the guides, a driving-gear carried thereby including a
5 gear-wheel loose on the shaft, a clutch between the wheel and the shaft, and means to raise and lower the shaft independently of the driving-gear.

In testimony whereof I have signed my name to this specification in the presence of 10 two subscribing witnesses.

ROBERT E. BROWN.

Witnesses:

HENRY E. BROWN,
R. C. HILL.