

No. 780,799.

PATENTED JAN. 24, 1905.

S. J. KABAKER.

DRILL.

APPLICATION FILED AUG. 7, 1903.

2 SHEETS—SHEET 1.

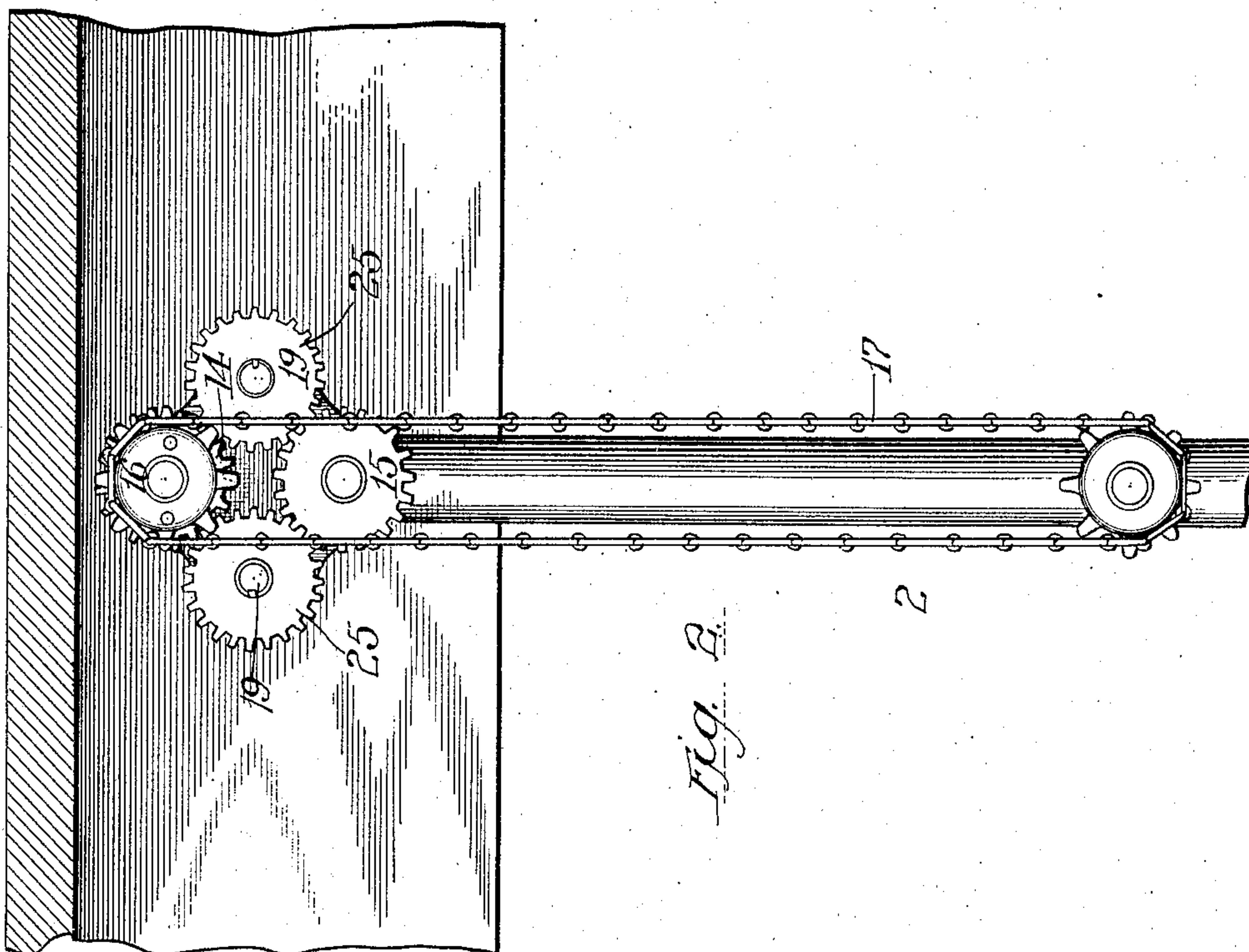


Fig. 2.

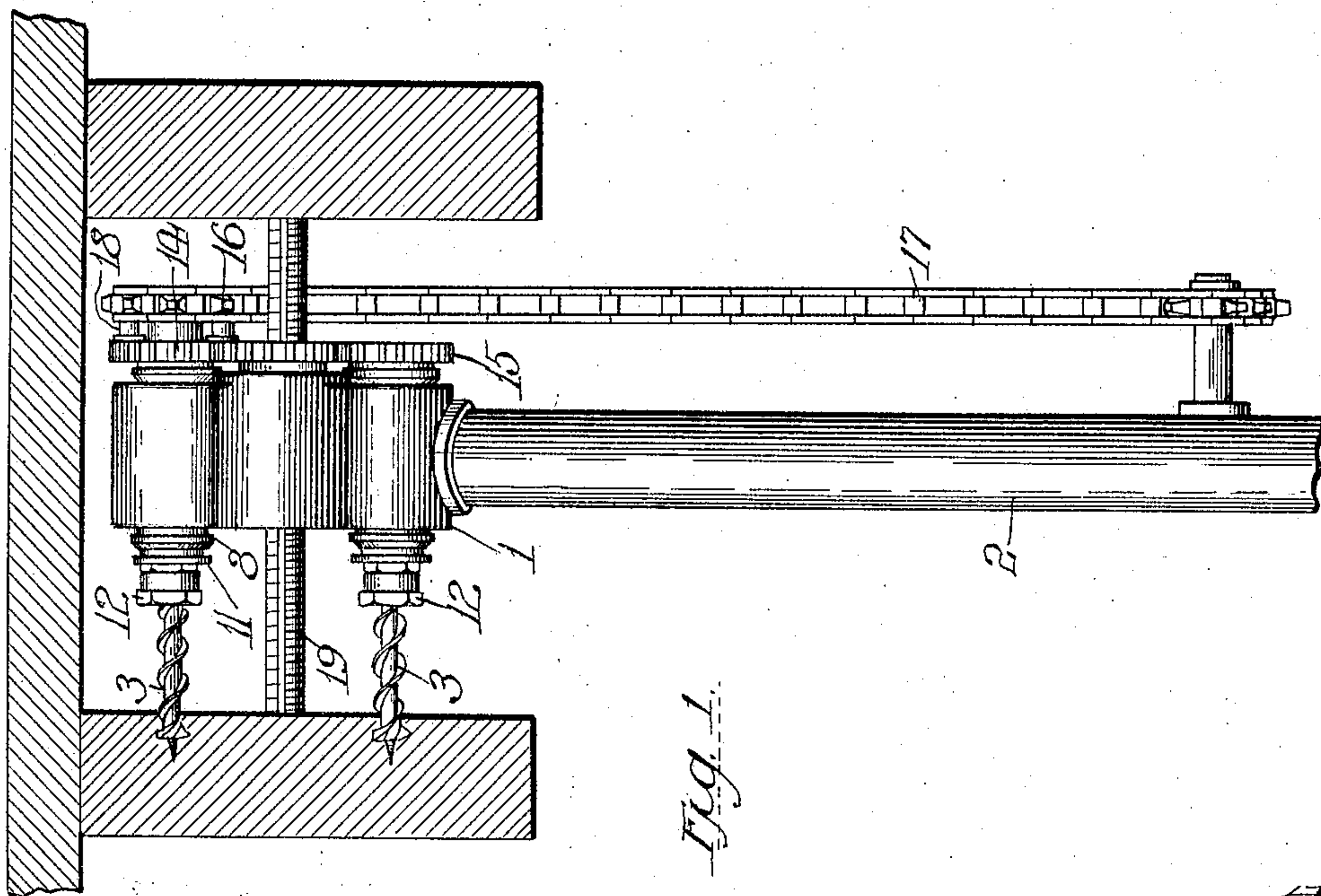


Fig. 1.

Witnesses:

Harold Barrett

Lute S. Alter

Inventor:

Simon J. Kabaker

By *Rector & Kibben*
Attorneys

No. 780,799.

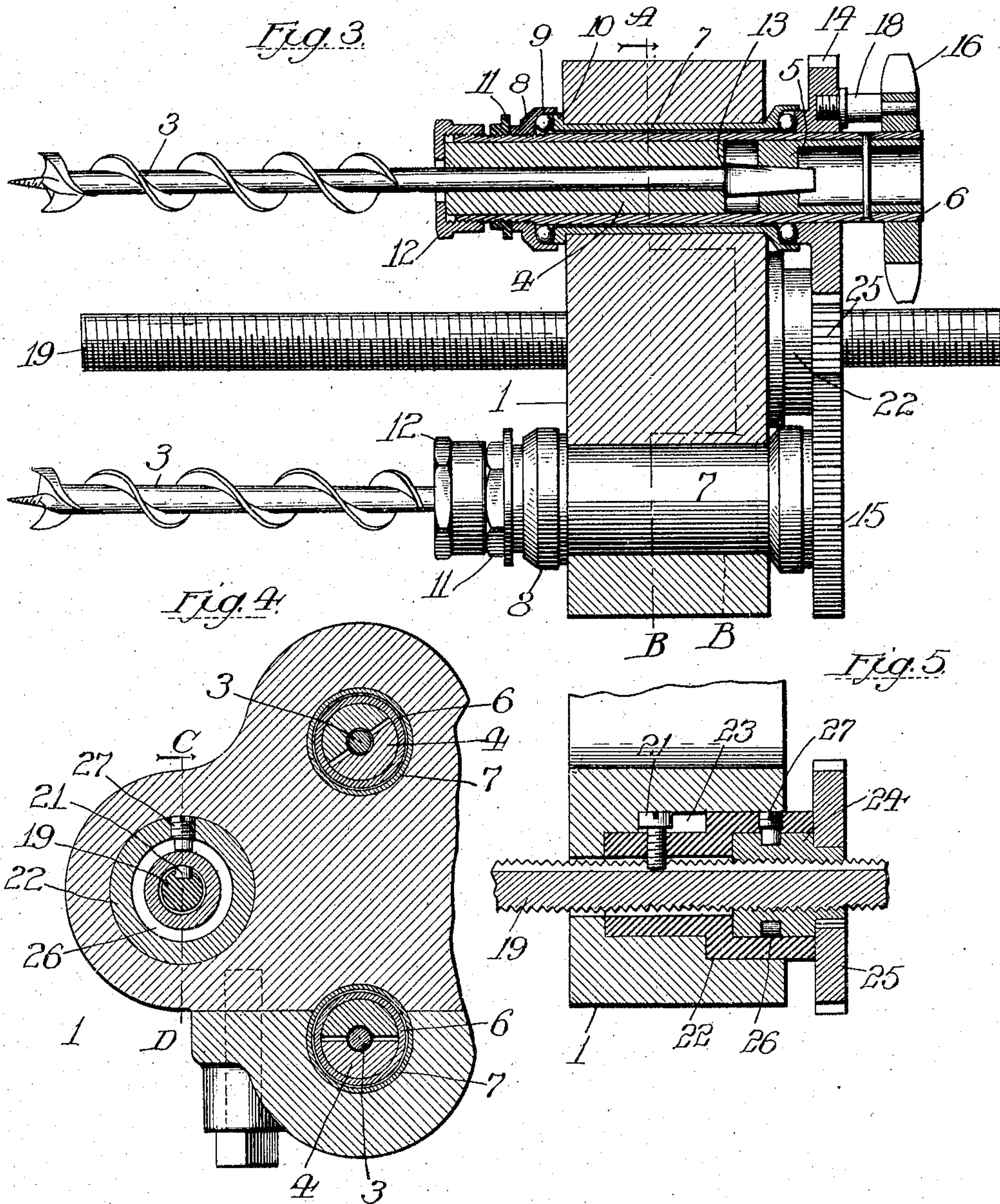
PATENTED JAN. 24, 1905.

S. J. KABAKER.

DRILL.

APPLICATION FILED AUG. 7, 1903.

2 SHEETS—SHEET 2.



Witnesses:

Harold M. Barrett

Lester S. Alter

Inventor:

Simon J. Kabaker

By Rector & Nibben
His Attorneys

UNITED STATES PATENT OFFICE.

SIMON J. KABAKER, OF CHICAGO, ILLINOIS.

DRILL.

SPECIFICATION forming part of Letters Patent No. 780,799, dated January 24, 1905.

Application filed August 7, 1903. Serial No. 168,623.

To all whom it may concern:

Be it known that I, SIMON J. KABAKER, residing at Chicago, Cook county, Illinois, have invented certain new and useful Improvements in Drills, of which the following is a specification.

My invention relates more particularly to a special class of drills used for boring holes in joists in the work of wiring buildings—that is, in installing electric wires in buildings. The drills for this purpose have to be used between the joists, and the operation is therefore somewhat difficult, especially where good work is essential.

The object of my invention is to produce a simple, efficient, and reliable drill of the character described, whose points of advantage and utility will be understood from the description hereinafter given.

In the drawings, Figure 1 is a side elevation of my drill, showing it in working position between two joists indicated in section; Fig. 2, an end view of the drill; Fig. 3, a sectional elevation thereof with a portion shown in section; Fig. 4, a cross-section on line A B of Fig. 3, and Fig. 5 a section of one of the feed-screws on line C D of Fig. 4.

Before describing my drill in detail I will state that the particular number of drills and feed-screws used is not material so far as the broader features of my invention are concerned and that therefore while I have shown and will now describe the drill as containing two drills and two feed-screws my invention is not to be limited thereto.

The drill comprises a body or block 1, of material suitable for the purpose and of the desired shape and dimensions. This body or block carries the various working parts of the drill and is itself supported when in use by the operator by means of a pole or rod 2, properly connected with or affixed thereto.

The two drills 3 are mounted to rotate in the block, and as they are similarly mounted the description of one will apply to both. Each drill or bit is passed between a two-part clamp 4, and its angular head or end is in-

serted in an angular opening in a block 5, which is secured in suitable manner to a rotatable sleeve 6. Each rotatable sleeve bears within a stationary sleeve 7 in the block and is furthermore screw-threaded at one end to receive a ball-cup 8, forming part of a ball-bearing in connection with the balls 9 and bearing 10 on the end of the stationary sleeve 7. A lock-nut 11 serves to lock the cup in adjusted position. To clamp the shank of the drill to the rotatable sleeve 6, I employ a screw-cap 12, screwing upon such sleeve and arranged to press the clamp 4 against the shoulder 13, formed by the angular head of the drill, which head is thereby forced and held in the nut or block 5.

Each of the rotatable sleeves has a gear, the upper sleeve being provided with a gear 14 and the lower one with a gear 15. The upper sleeve is not, in fact, just the same as the lower one, inasmuch as it is extended somewhat in order to receive a sprocket-wheel 16, driven by a hand-chain 17, hanging down in reach of the operator. Suitable connection is provided between the gear and sprocket-wheel, and in the present instance I employ one or more transverse pins 18 for such purpose. Also passing transversely through the block and by preference in a plane transverse to that of the two axes of the drills are two similar feed-screws 19, the description of one of which will suffice for both. Each screw, which is of a length corresponding to the standard distance between joists, is threaded substantially throughout its entire length in order that the block carrying the drills may feed itself therealong and is provided with a longitudinal groove 20, into which enters a screw-stud 21. This screw-stud passes through a sleeve 22, inserted in a socket in the block and having two diameters, as seen in Fig. 5. The screw-stud after being screwed in for the purpose of engaging or entering the groove in the screw still projects sufficiently far for its head to engage the transverse slot 23 in the block, whereby the sleeve is held against rotation. Within the larger diameter of the sleeve rotatably

fits a hub 24, formed integral with or secured to a gear 25. This hub is internally screw-threaded to engage the screw passing there-through and is provided with a circumferential groove 26, in which enters a screw-stud 27, passing through the sleeve 22. By this arrangement the hub 24 is capable of free rotation, but prevented from being displaced laterally. By reference to Fig. 2 it will be seen that all the gears intermesh and are driven by the chain through the medium of the sprocket-wheel 16.

In practice the drill is elevated by the operator to its proper position between the joists, the feed-screw passing between such joists, inasmuch as the former are of a length corresponding to the standard distance between joists. As the drills are rotated the body or block is automatically fed along the screws, thereby feeding and pressing the drills to the work. The machine may be operated by hand or otherwise, as desired.

I claim—

1. In a drill of the class described, the combination of a body or block, a drill mounted to rotate therein, a non-rotatable feed-screw passing transversely through said block, the ends of the screws being arranged to bear against supports and means for simultaneously rotating the drill and feeding the block along the feed-screw.

2. In a drill of the class described, the combination of a body or block, a drill mounted to rotate therein, a non-rotatable feed-screw passing transversely through said block, with its ends arranged to bear against supports, said feed-screw and drill being arranged parallel to each other, and means for simultaneously rotating the drill and feeding the block along the feed-screw.

3. In a drill of the class described, the combination of a body or block, a drill mounted to rotate therein, a non-rotatable feed-screw passing transversely through said block, one end thereof bearing against the work and the other against a support, a gear journaled in said block and having screw-threaded connection with said feed-screw so as to travel thereon, and a gear also journaled in said block for driving the drill and also operating the feed-screw gear.

4. In a drill of the class described, the combination of a body or block, a standard or support on which the block is mounted, a plurality of non-rotatable feed-screws passing transversely through the block and on which the block is fed, the ends of said screws being arranged to bear against supports, a drill journaled at one end in the block, and means for simultaneously rotating said drill and feeding the block along the feed-screws.

5. In a drill of the class described, the combination of a body or block, a plurality of drills

mounted to rotate therein, a plurality of feed-screws passing transversely through said block and arranged parallel to the drills, and a common means for rotating all of said drills and for feeding said block along its feed-screws.

6. In a drill of the class described, the combination of a block, a drill mounted to rotate therein, a feed-screw passing transversely through said block, means for rotating the drill and feeding the block along the screw, and a rod or pole secured to said block.

7. In a drill of the class described, the combination of a block, a drill mounted to rotate therein, a feed-screw passing transversely through said block, means for rotating the drill and feeding the block along the screw, a sprocket-wheel, a hand-chain for operating said wheel, a driving connection between said wheel and drill, and means for moving or feeding the block along the feed-screw as the drilling proceeds.

8. In a drill of the class described, the combination of a block, a drill mounted to rotate therein, a sprocket-wheel and a gear for rotating said drill, a feed-screw passing transversely through said block, a second gear driven by the other gear and mounted to rotate in the block, said second gear engaging the screw and arranged to feed the block therealong as the drilling proceeds.

9. In a device of the class described, the combination of a block, a drill therein, a feed-screw passing transversely through the block, a gear having internal threads to engage said screw and mounted to rotate in said block, and means for rotating the drill and gear.

10. In a device of the class described, the combination of a block, a drill therein, a feed-screw passing transversely through the block, a gear having internal threads to engage said screw and mounted to rotate in said block, means for preventing rotation of the screw relatively to the block, and means for rotating the drill and gear.

11. In a device of the class described, the combination of a block, a drill therein, a feed-screw passing transversely through the block, a gear having internal threads to engage said screw and mounted to rotate in said block, a sleeve removably secured in said block around the feed-screw, said feed-screw having a longitudinal groove, a screw-stud passing through the sleeve and entering said groove, and means for rotating the drill and gear.

12. In a device of the class described, the combination of a block, a drill therein, a feed-screw passing transversely through the block and having a longitudinal groove, a gear having a hub provided with internal screw-threads to engage the feed-screw and having a circumferential groove, a sleeve arranged in the block to receive said hub, a screw-stud arranged in the sleeve to enter said groove in

the hub, a second stud arranged in the sleeve to enter said groove of the feed-screw, and means for actuating the drill and gear.

13. In a device of the class described the
5 combination of a block, a plurality of drills therein, a plurality of feed-screws arranged parallel to the drills, and intermeshing gears

coöperating with the drills and feed-screws, and means for actuating said gears.

SIMON J. KABAKER.

Witnesses:

S. E. HIBBEN,

AMELIA WILLIAMS.