

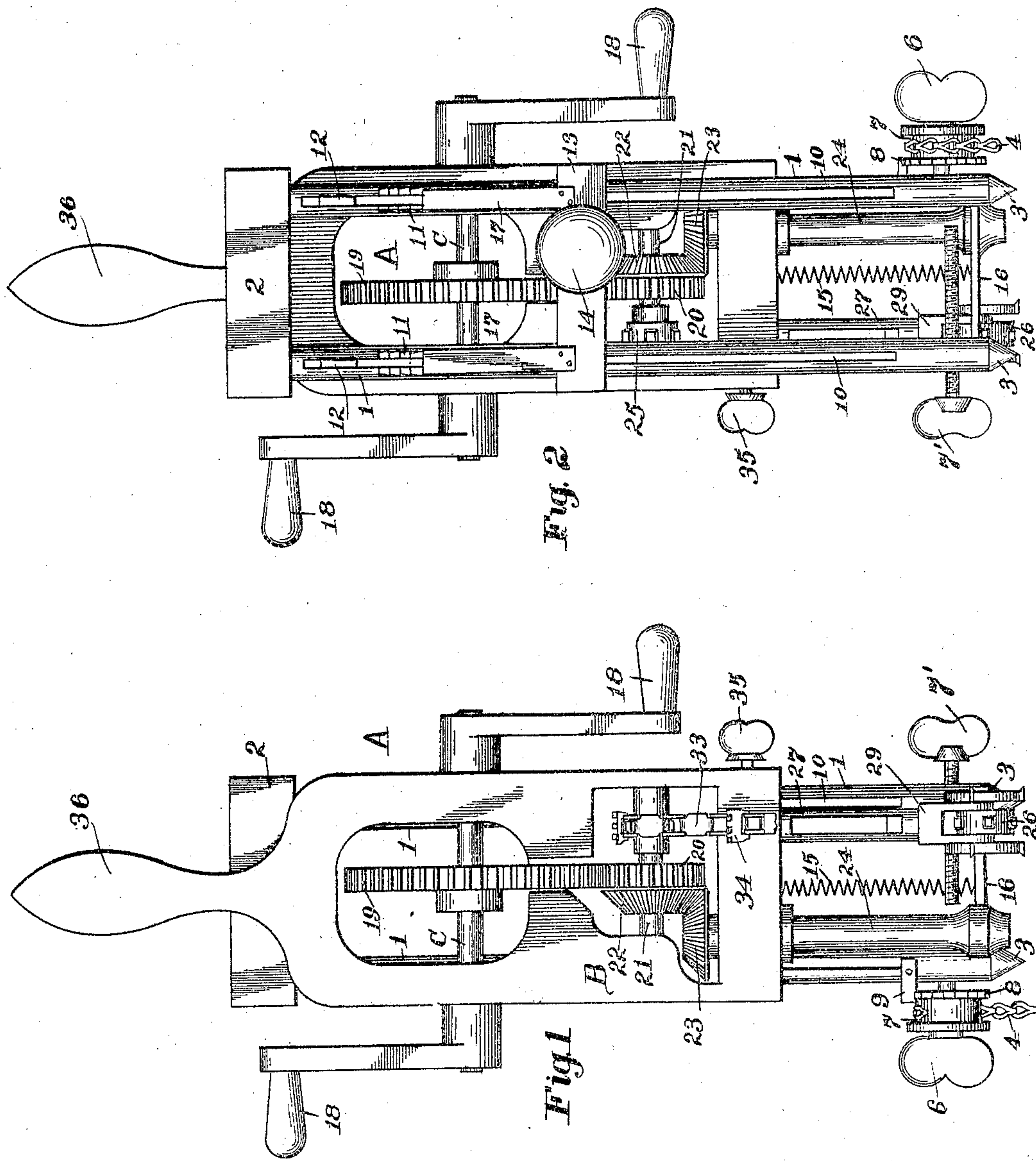
No. 775,745.

PATENTED NOV. 22, 1904.

D. W. COLE.
MORTISING MACHINE.
APPLICATION FILED SEPT. 21, 1903.

NO MODEL.

3 SHEETS—SHEET 1.



Witnesses
Milton Lenoir.

Walter T. Estabrook

Inventor
David W. Cole
by Thomas G. DuBois & Co.
Attorneys

No. 775,745.

PATENTED NOV. 22, 1904.

D. W. COLE.
MORTISING MACHINE.
APPLICATION FILED SEPT. 21, 1903.

NO MODEL.

3 SHEETS—SHEET 2.

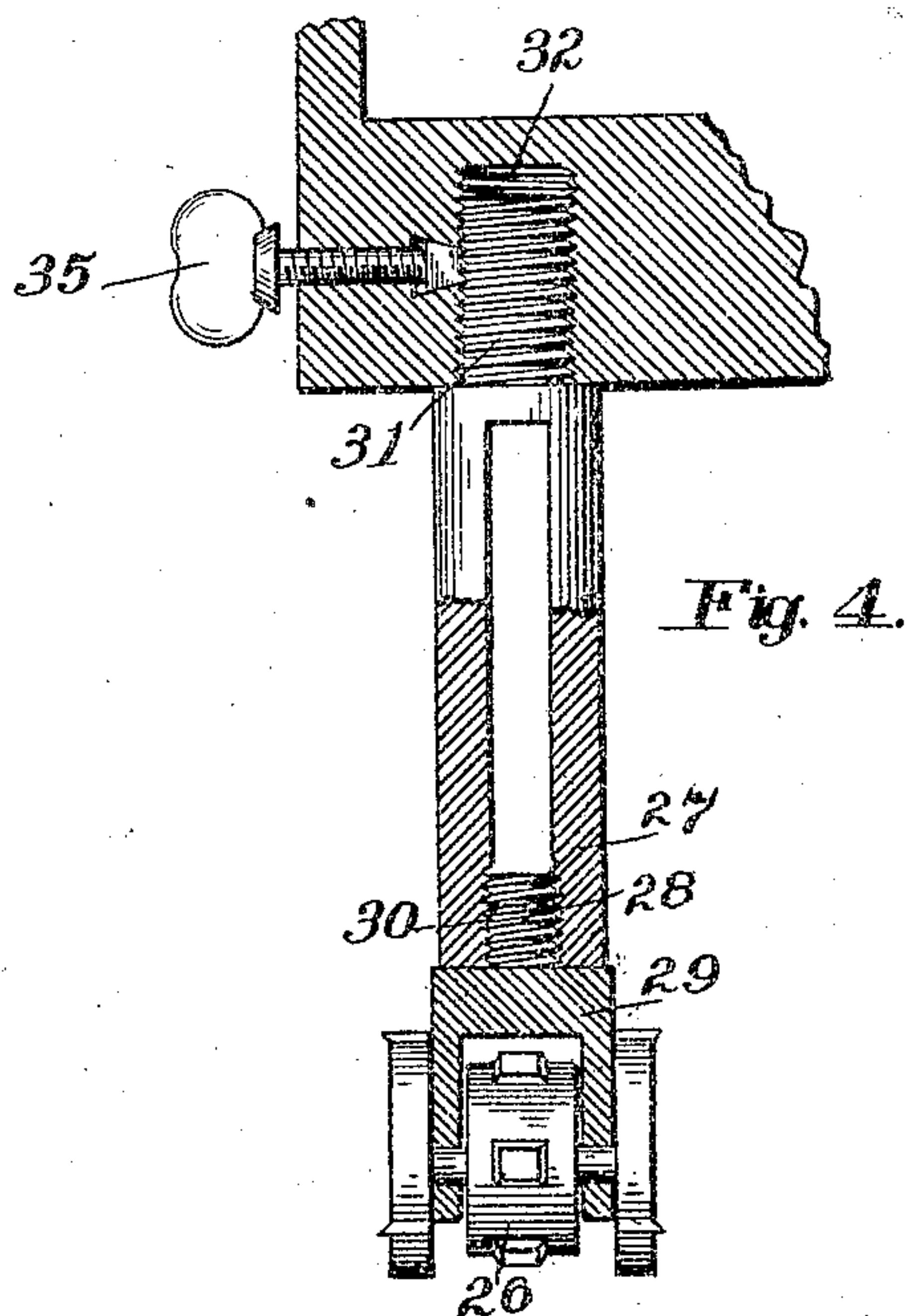


Fig. 4.

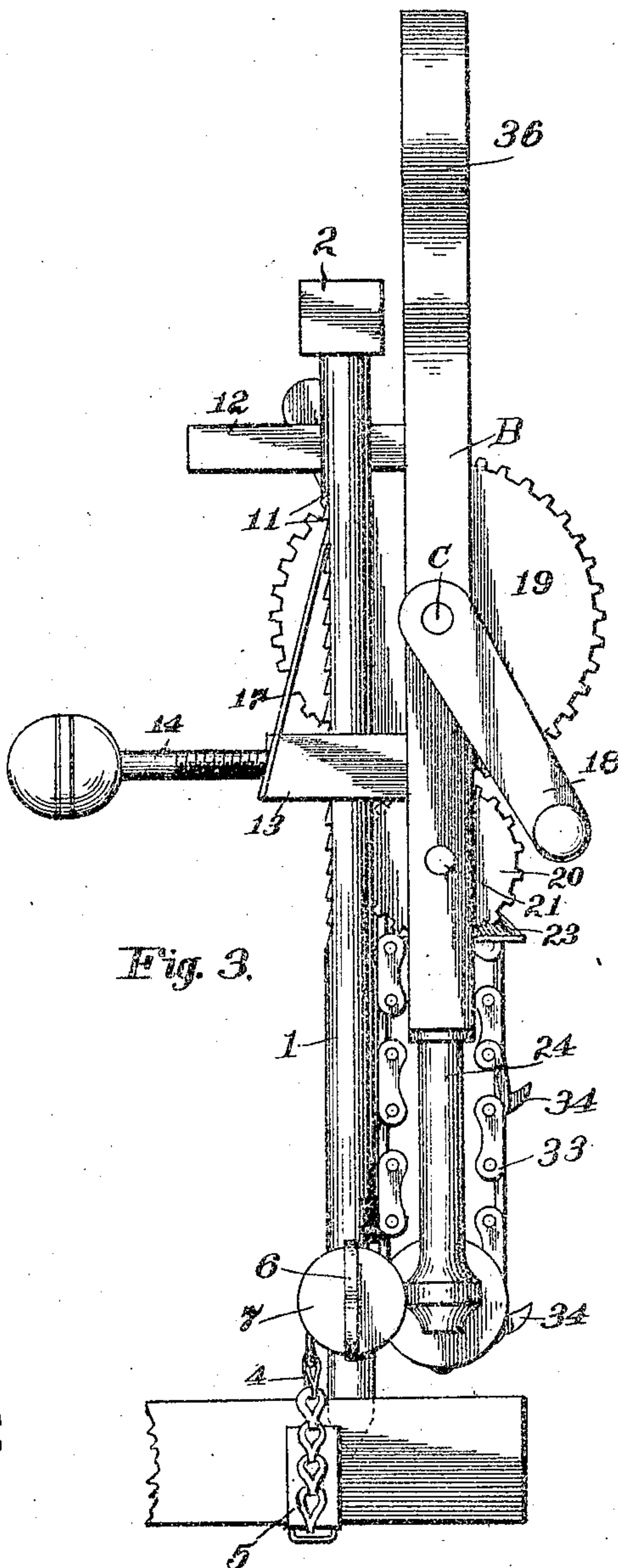


Fig. 3.

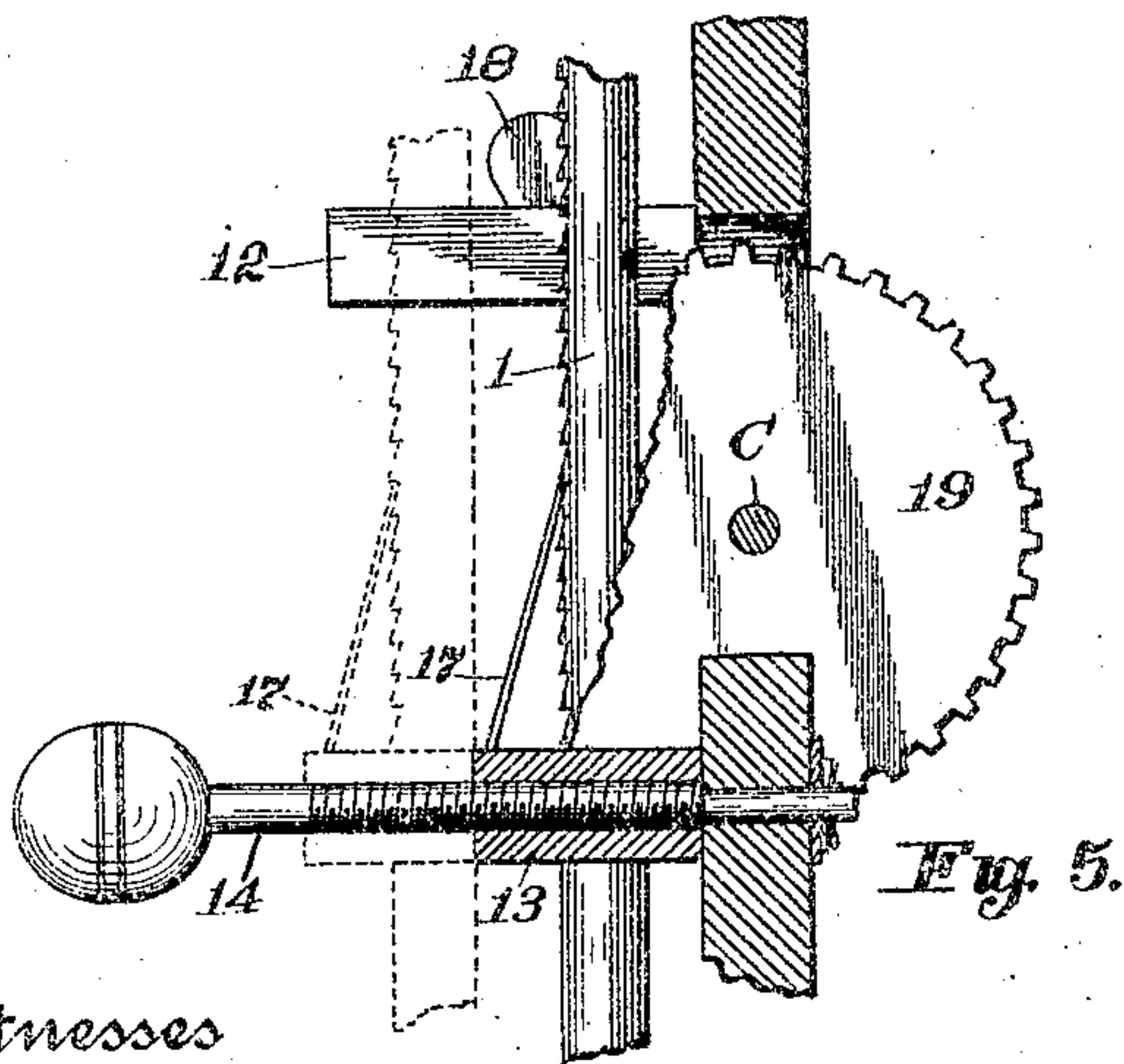


Fig. 5.

Witnesses
Milton Lenoir.

Walter T. Estabrook

Inventor
David W. Cole
by *Thos. G. Davis & Co.*
His Attorneys

No. 775,745.

PATENTED NOV. 22, 1904.

D. W. COLE.
MORTISING MACHINE.
APPLICATION FILED SEPT. 21, 1903.

NO MODEL.

3 SHEETS—SHEET 3.

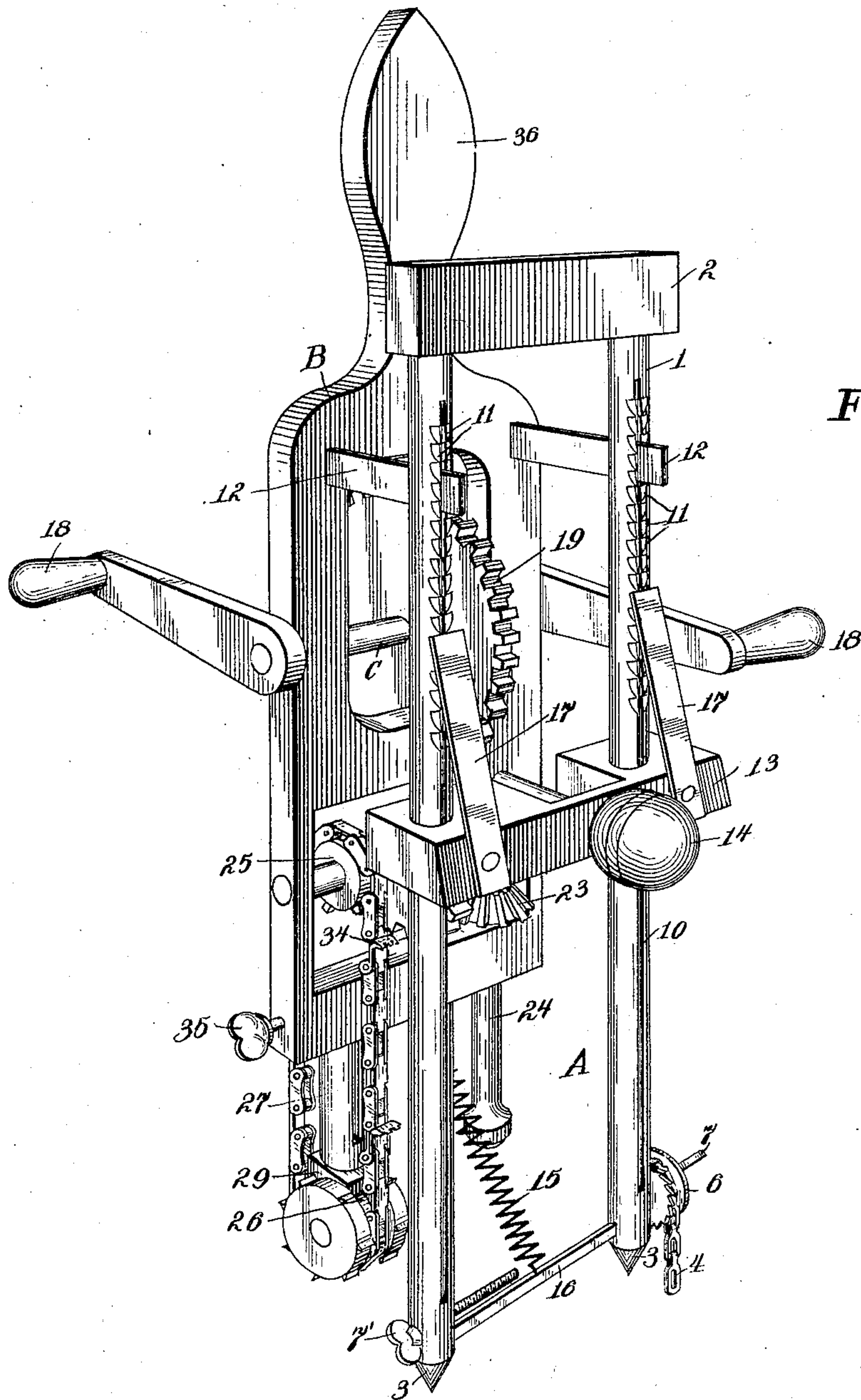


Fig. 8.

Witnesses
Milton Lenoir,
Walter T. Estabrook

Inventor
David W. Cole
By *Phelan & Co.*
Attorneys

UNITED STATES PATENT OFFICE.

DAVID WM. COLE, OF JACKSON, PENNSYLVANIA.

MORTISING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 775,745, dated November 22, 1904.

Application filed September 21, 1903. Serial No. 174,063. (No model.)

To all whom it may concern:

Be it known that I, DAVID WM. COLE, a citizen of the United States, and a resident of Jackson, in the county of Susquehanna and State of Pennsylvania, have invented a new and useful Improvement in Mortising-Machines, of which the following is a specification.

My invention relates to an improvement in mortising-machines, and more particularly to so-called "hand" mortising-machines, the object being to provide a machine which will bore either a round or rectangular opening in any width of board and which at the same time can be easily and quickly applied to the work, adjusted, and manipulated.

With these objects in view my invention consists in certain novel features of construction and combinations of parts, which will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in front elevation, Fig. 2 is a view in rear elevation, Fig. 3 is a view in side elevation, Figs. 4 and 5 are detail views, and Fig. 6 is a perspective view, of my invention.

A represents the main frame of my improved mortising-machine. This comprises a pair of uprights 1 1, which are connected together at the upper end by the cross-bar 2 and are preferably pointed at the lower end, as at 3 3, these pointed ends adapted to be driven into the work, as a nail or spike would be driven, by pounding on the cross bar or head 2. In this way the frame is held rigidly in place in an upright position while the boring or mortising is being done. As a further means of bracing or securing this frame in position the chain 4 may be provided, it extending around the work, preferably through clips 5 5, which engage the corners of the work. The chain is tightened by turning the thumb-screw 6, which has a drum 7 on it, with ratchet-teeth 8, engaged by the pawl 9. In this way the chain is made perfectly tight, and the frame is braced in position on the opposite side from the weight of the mortising-frame, which will be described hereinafter. When the work is narrower than the distance between the uprights, the clamping-screw 7' is used to clamp the work between one of the up-

rights and the clamping-screw. The uprights are slotted from front to rear practically throughout their entire lengths, as at 10 10, and on their rear surfaces provided with downwardly-extending ratchet-teeth 11 11.

B is a movable frame which carries the operative parts of the mortising-machine. This movable frame is provided with rearwardly-projecting arms 12 12 at its upper end, which extend into and fit the slots 10 10, in which they are adapted to slide and guide the movable frame in an upright position.

A cross-head 13 is received upon the stationary uprights 1 1, which uprights pass through apertures formed in the cross-head 13, the latter adapted to move relative to the uprights. This cross-head 13 is connected, by means of a set-screw 14, with the movable frame B, the end of the set-screw being swiveled in the frame B and having a threaded engagement with the cross-head 13. This arrangement permits of forcing the movable frame B away from the stationary uprights 1 1 by turning the set-screw 14, the frame B maintaining a lateral and longitudinal sliding connection with the uprights by means of the projecting arms 12 12, carried by the movable frame B and received in the slots 10 10, formed in the uprights 1 1. By this means the operator is enabled to make an elongated mortise by moving the movable frame B gradually away from the stationary uprights, or vice versa. A stiff spiral spring 15 extends from the lower end of the movable frame to a cross-brace 16, extending between the uprights, the function of this spring being to feed the movable frame downward. Pawls 17 17, connected with the movable cross-head, engage the ratchet-teeth 11 11 on the uprights and in that way lock the movable frame against upward movement, while the spiral spring constantly tends to feed the frame downward.

C indicates the drive-shaft, journaled in the movable frame and provided, preferably, with handles 18 18, one on each end, by means of which the shaft is rotated. A large gear-wheel 19 on this shaft drives the pinion 20 on the shaft 21, and a bevel-gear 22 on shaft 21 intermeshes with bevel-gear 23 on the bit-chuck 24, whereby the latter is rotated, this

bit-chuck being adapted to receive any size of bit. On the shaft 21 a sprocket-wheel 25 is keyed. In alinement with this sprocket-wheel the sprocket-wheel 26 is supported at the outer end of shank 27, the threaded end 28 of the block 29, which carries this sprocket-wheel 26, screwing into threads 30 in the outer end of the shank. The upper end of the shank is provided with screw-threads 31, which screw into the threads in the hole 32. The chain 33 is carried over these sprocket-wheels and provided with cutters 34 for mortising. The distance between any two of the cutters 34 on the chain 33 may be greater than the diameter of the sprocket-wheel 26, thereby permitting the movable frame to descend by reason of the spring tension between the action of one cutter and the next succeeding one, the pawls 17 descending therewith and locking the movable frame against upward movement when the cutters engage the work. The impact of the cutters on the chain with the work normally tends to raise the movable frame B on the stationary upright; but such movement is prevented by the engagement of the pawls moving with frame B and the rack-teeth formed on the stationary uprights. By reason of the threaded ends of the shank 27 it may be turned to the right or left in order to increase or decrease the distance between the two sprocket-wheels, whereby to tighten or loosen the sprocket-chain. It is also intended that the shank should be removable in order to get it out of the way when the bit is being used for boring a round hole, and this is provided for by the set-screw 35, which is first loosened, after which the shank is unscrewed and taken from the movable frame.

At the upper end of the movable frame a handle 36 is provided, by which to lift or hold the mortising-machine.

From the foregoing it will be seen that simple means is provided for fastening the machine in place, for holding the work, for operating, feeding, and adjusting the parts, and for cutting a mortise of the desired dimension.

It is evident that slight changes might be resorted to in the form and arrangement of the several parts described without departing from the spirit and scope of my invention, and hence I do not wish to limit myself to the exact construction herein set forth; but,

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

1. In a mortising-machine, the combination with a fixed frame, of a movable frame loosely connected therewith, the movable frame capable of a lateral as well as vertical movement with relation to the fixed frame, cutters carried by the movable frame, the impact of the cutters against the work operated upon tending to move the movable frame away from the work, and means carried by the movable

frame adapted to engage the fixed frame to prevent the movement of the movable frame away from the work.

2. In a mortising-machine, the combination with a fixed frame, of a movable frame loosely connected therewith, the movable frame capable of a lateral as well as vertical movement with relation to the fixed frame, cutters carried by the movable frame, the impact of the cutters against the work operated upon tending to move the movable frame away from the work, rack-teeth mounted on the fixed frame and pawls carried by the movable frame, the pawls adapted to engage the rack-teeth to prevent a movement of the movable frame away from the work.

3. In a mortising-machine, the combination with a fixed frame, of a movable frame slidably connected with the fixed frame, a cutter-chain rotatably carried by the movable frame, and a means for adjusting the cutter-chain and movable frame toward and from the stationary frame in the plane of travel of the chain.

4. In a mortising-machine, the combination with a stationary frame having longitudinally-extending slots formed therein, of a movable frame, projecting arms carried by the movable frame and received within the slots, the connection permitting the parallelism of the two frames to be maintained and a means carried by one of the frames and engaging the other to regulate the distance between the frames.

5. The combination with a fixed and movable frame, the fixed frame having slots extending practically throughout its length, of guide-arms extending from the movable frame and fitted to the slots whereby to guide the movable frame with respect to the fixed frame, boring and mortising mechanism carried by the movable frame, and means for feeding the movable frame downwardly and means for adjusting it forwardly and rearwardly with respect to the fixed frame.

6. The combination with a fixed and movable frame, the fixed frame having slots extending practically throughout its length, of guide-arms extending from the movable frame and fitted to the slots whereby to guide the movable frame with respect to the fixed frame, boring and mortising mechanism carried by the movable frame, and means for adjusting it forwardly and rearwardly with respect to the fixed frame.

7. In a mortising-machine, the combination with a fixed frame, of a movable frame located approximately parallel therewith, a connection extending between the movable and the fixed frames to permit the movable frame to have a longitudinal movement with respect thereto and likewise a lateral movement through the same connection, a cutter member carried by the movable frame and means on the movable frame for operating the cutters.

8. In a mortising-machine, the combination
with a fixed frame, of a movable frame lo-
cated approximately parallel with the fixed
frame, a connection extending between the
5 movable and the fixed frames to permit the
movable frame to have a free lateral and lon-
gitudinal movement with respect to the fixed
frame, an adjusting means connecting the two
frames to regulate the lateral movement of
10 the movable frame with respect to the fixed
frame, a cutter carried by the movable frame
and means for operating the cutter.

9. In a mortising-machine, the combination
with a fixed guide-frame, of a movable frame
15 located approximately parallel to the fixed
frame, one of the frames having longitudi-
nally-extending slots formed therein, means
stationarily mounted in the other frame, the
free ends of such means receivable in the slots
20 to permit the movable frame to have a free
longitudinal movement with respect to the
fixed frame, a cutter carried by the movable
frame and means for operating the cutter.

10. In a mortising-machine, the combination

with a fixed guide-frame, of a movable frame 25
located approximately parallel to the fixed
frame, one of the frames having longitudi-
nally-extending slots formed therein, means
stationarily mounted in the other frame, the
free ends of such means receivable in the slots 30
to permit the movable frame to have a free
longitudinal movement with respect to the
fixed frame, a sliding member mounted on
the fixed frame to move longitudinally there-
of, an adjusting member extending between 35
the sliding member and the movable frame to
regulate the lateral movement of the movable
frame with respect to the fixed frame, a cut-
ter carried by the movable frame and means 40
for operating the cutter.

In testimony whereof I have signed this
specification in the presence of two subscrib-
ing witnesses.

DAVID WM. COLE.

Witnesses:

P. K. BENSON,
H. G. FELTON.