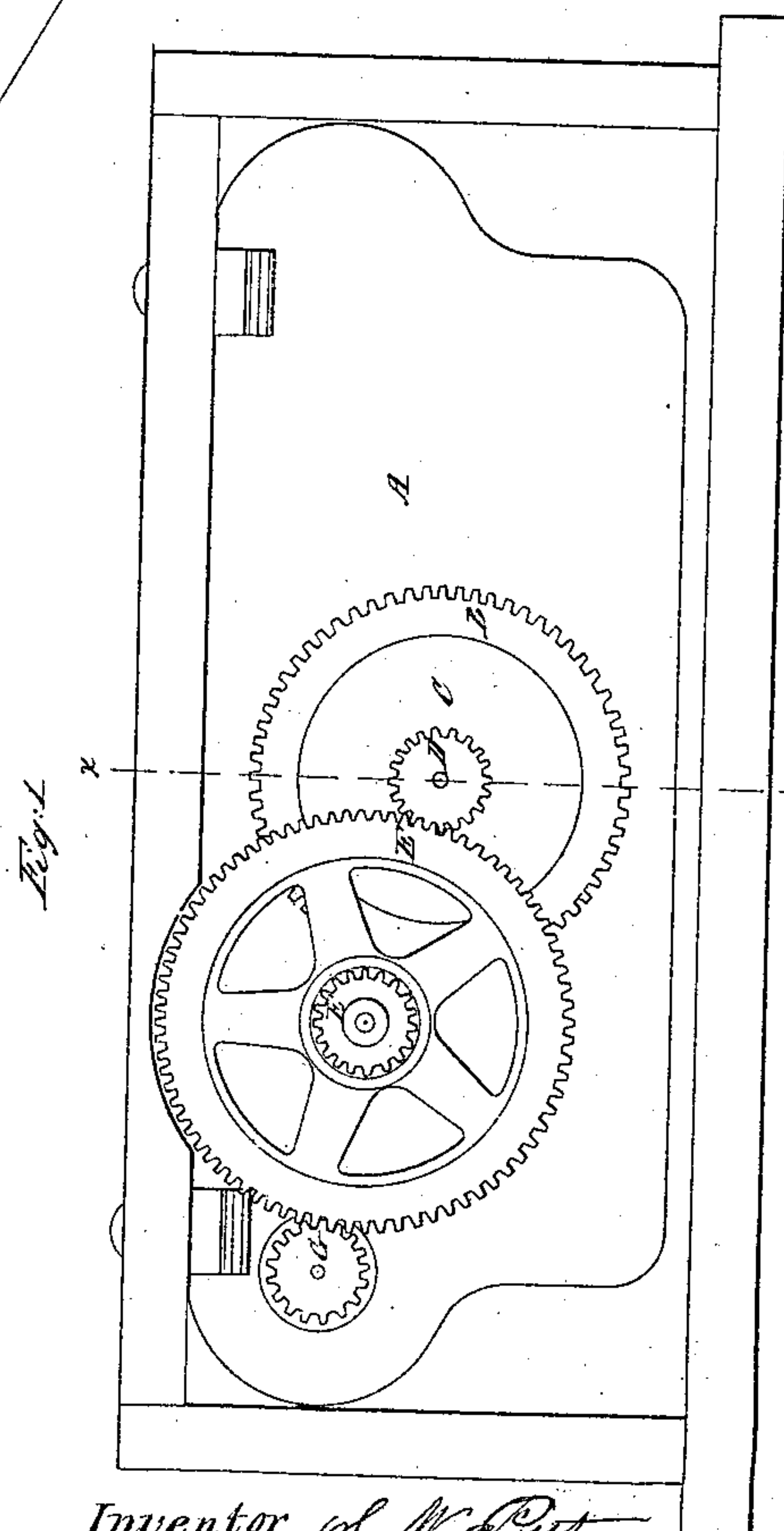
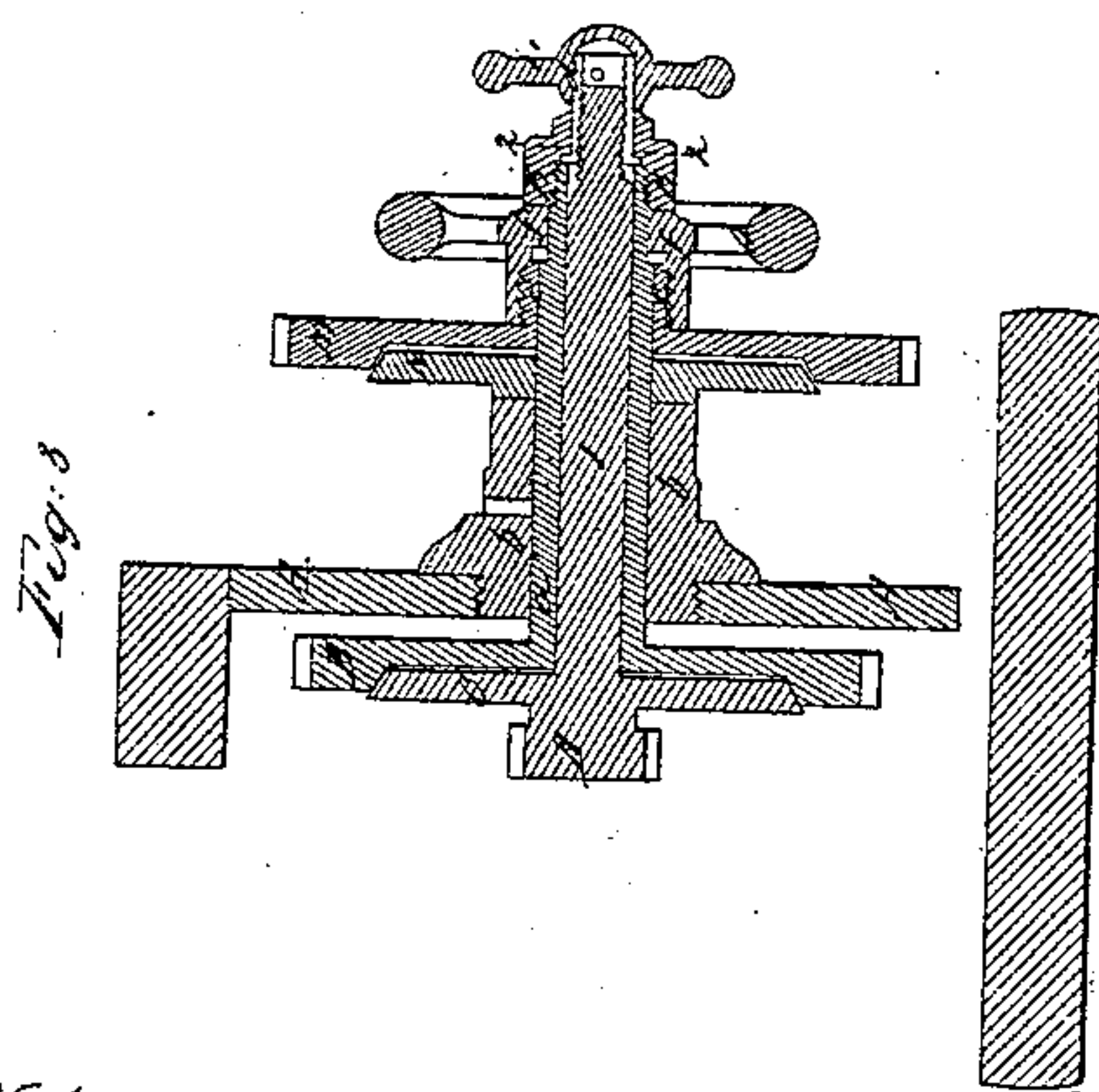
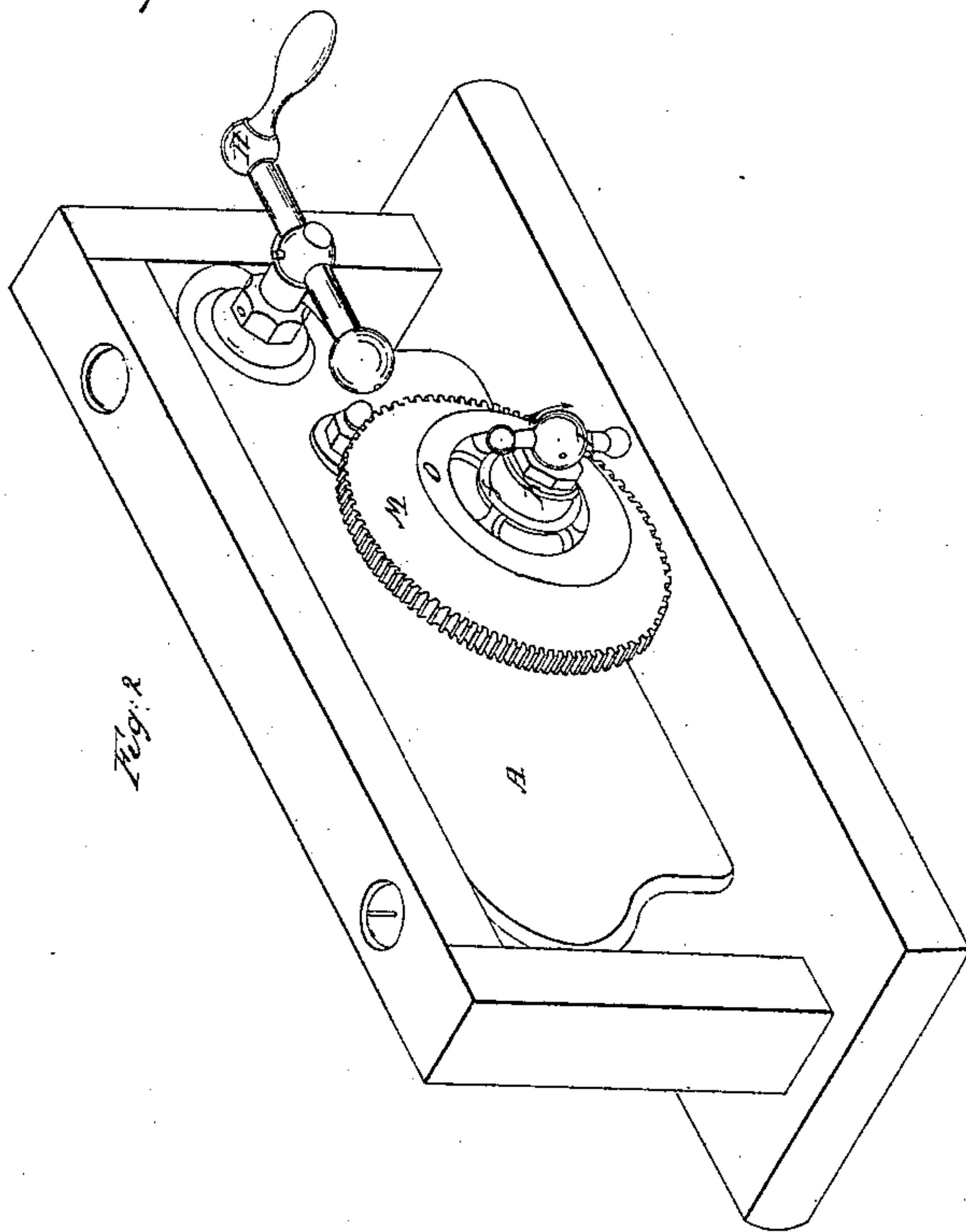


Putnam & Wright,

Turning Lathe,

Patented July 21, 1863.

N^o 39,326.



Witnesses:
Amos Adams.
John M. Graham.

Inventor S. M. Putnam
John A. Wright.

UNITED STATES PATENT OFFICE.

S. W. PUTNAM AND JOHN Q. WRIGHT, OF FITCHBURG, MASSACHUSETTS,
ASSIGNORS TO PUTNAM MACHINE COMPANY, OF SAME PLACE.

IMPROVEMENT IN LATHES.

Specification forming part of Letters Patent No. 39,326, dated July 21, 1863.

To all whom it may concern:

Be it known that we, S. W. PUTNAM and JOHN Q. WRIGHT, of Fitchburg, in the county of Worcester and State of Massachusetts, have invented an improved method of connecting and disconnecting the feed of lathes and other machines for operating on metals, &c., of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is an elevation of one side of our improved apparatus; Fig. 2, a view of the opposite side; Fig. 3, a section on the line *xx* of Fig. 1.

Our invention has for its object to connect and disconnect the feed of lathes, &c., in a more simple and efficient manner than has heretofore been accomplished; and it consists in the employment of peculiar swivel or "union-jointed" nuts, so arranged in connection with friction-clutches that the gears which operate the side and cross feeds may be instantaneously thrown in or out of action, as may be required.

Our invention also consists in the employment of a hollow shaft for transmitting the power from the driving-wheel to the wheel which operates the cross-feed.

To enable others skilled in the art to understand and use our invention, we will proceed to describe the manner in which we have carried it out.

In the accompanying drawings, A represents a portion of the frame-work of a lathe; B, the driving-wheel, which is actuated by any suitable power. The face of this wheel B is turned out to receive a friction-disk, C, the edge of which is slightly conical, so as to correspond with the form of the recess in the face of the wheel B. To this disk C is attached the pinion D, which engages with the intermediate wheel, E, on a short stud projecting from the frame-work A. To the hub of the wheel E is secured the pinion F, which engages with the rack for moving the side feed of the lathe.

G is a pinion, engaging with the wheel E and secured to a short shaft passing through the frame-work A, to the other end of which is attached the crank H, Fig. 2, by which

means the side-feed carriage is operated by hand.

We will now describe the manner in which the disk C is connected with and disconnected from the driving-wheel B, for the purpose of operating the side feed, (referring particularly to Fig. 3.)

The driving-wheel B has attached to it a hollow shaft, *a*, which runs in the hollow tube or bearing *b*, screwed into the frame-work A. I is a shaft attached to the friction disk C, which passes through the hollow shaft *a*, and has a screw-thread, *c*, cut on its end, on which is screwed the hollow sleeve or nut *d*, one end of which is enlarged and rests against the end of the shaft *a*. The sleeve *d* is held in this position by the shoulder 2, which rests against a corresponding shoulder on the inside of a screw-cap, K, which is screwed onto the end of the shaft *a*. One end of this hollow sleeve *d* projects out beyond the screw-cap K, and has secured to it a cross-bar or handle, L, by which it is operated. It will thus be seen that as the cross-bar L is turned by the operator in the direction of the arrow, Fig. 2, the sleeve *d*, being held from moving laterally between the end of the shaft *a* and the shoulder on the inside of the screw-cap K, will cause the shaft I to be drawn forward and the beveled edge of the disk C will be forced into its seat in the face of the driving-wheel, thus causing it to revolve with the wheel B, and setting the side feed in motion, as required, through the intermediate gears, as before explained. By turning the bar L slightly in the contrary direction the shaft I and disk C, will be forced back and unclutched from the driving-wheel B, when the side-feed carriage may then be run back by hand, if desired, by means of the crank H and connections already explained. The cog-wheel M, which actuates the cross-feed, is connected with and disconnected from the driving-wheel B in the following manner: To the hollow shaft *a* of the driving-wheel B is permanently secured the disk N, the edge of which is beveled, like that of the disk C, to correspond with the form of the recess turned in the face of the wheel M. From this wheel M projects the hub *e*, on which is cut a screw-thread, on which fits the hub *f* of the hand-wheel O. It will thus be seen that as the

hand-wheel O is turned by the operator in one direction the wheel M will be forced away from the hand wheel, and the beveled edge of the recess turned in its face will be pressed against the beveled edge of the disk N, causing the wheel M to be revolved by the driving-wheel B, and the cross-feed is thus set in motion, as required. On turning the wheel O slightly in the contrary direction, the wheel M is drawn away from the disk N, as seen in Fig. 3, and the driving-wheel B revolves without turning the wheel M, thus disconnecting the cross-feed, which is then free to be manipulated by hand in a well-known manner.

By means of the above-described arrangement it will be seen that either the side or cross feed may be instantaneously thrown in or out of action, or they may be both worked together, if required.

In some cases we propose to make the end of the shaft I project through the sleeve or nut *d*, and have a small nut screwed on its end, so as to allow the handle L to be turned only

sufficiently for to detach the disk C from the wheel B.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. Operating the disk C, for throwing the side feed in or out of action, by means of the swivel or union-jointed nut *d*, in the manner substantially as set forth.

2. Forcing the wheel M into or out of contact with the disk N, for throwing the cross-feed in or out of action, by means of the hand-wheel O, in the manner substantially as set forth.

3. The hollow shaft *a*, for transmitting power from the driving-wheel B to the wheel M, for operating the cross-feed, arranged and operating substantially as specified.

S. W. PUTNAM.

JOHN Q. WRIGHT.

In presence of—

AMAS NORCROSS,
JOHN M. GRAHAM.