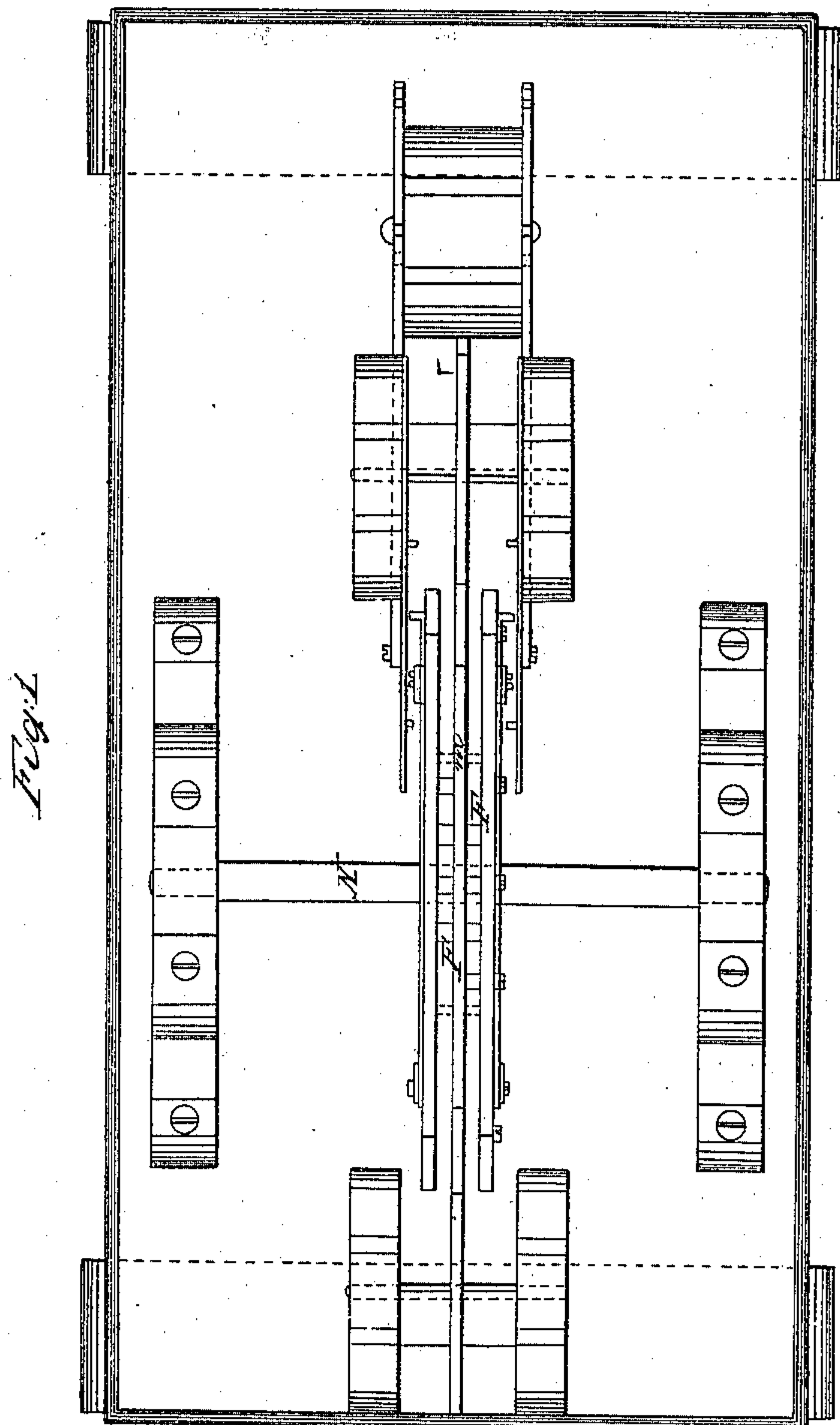
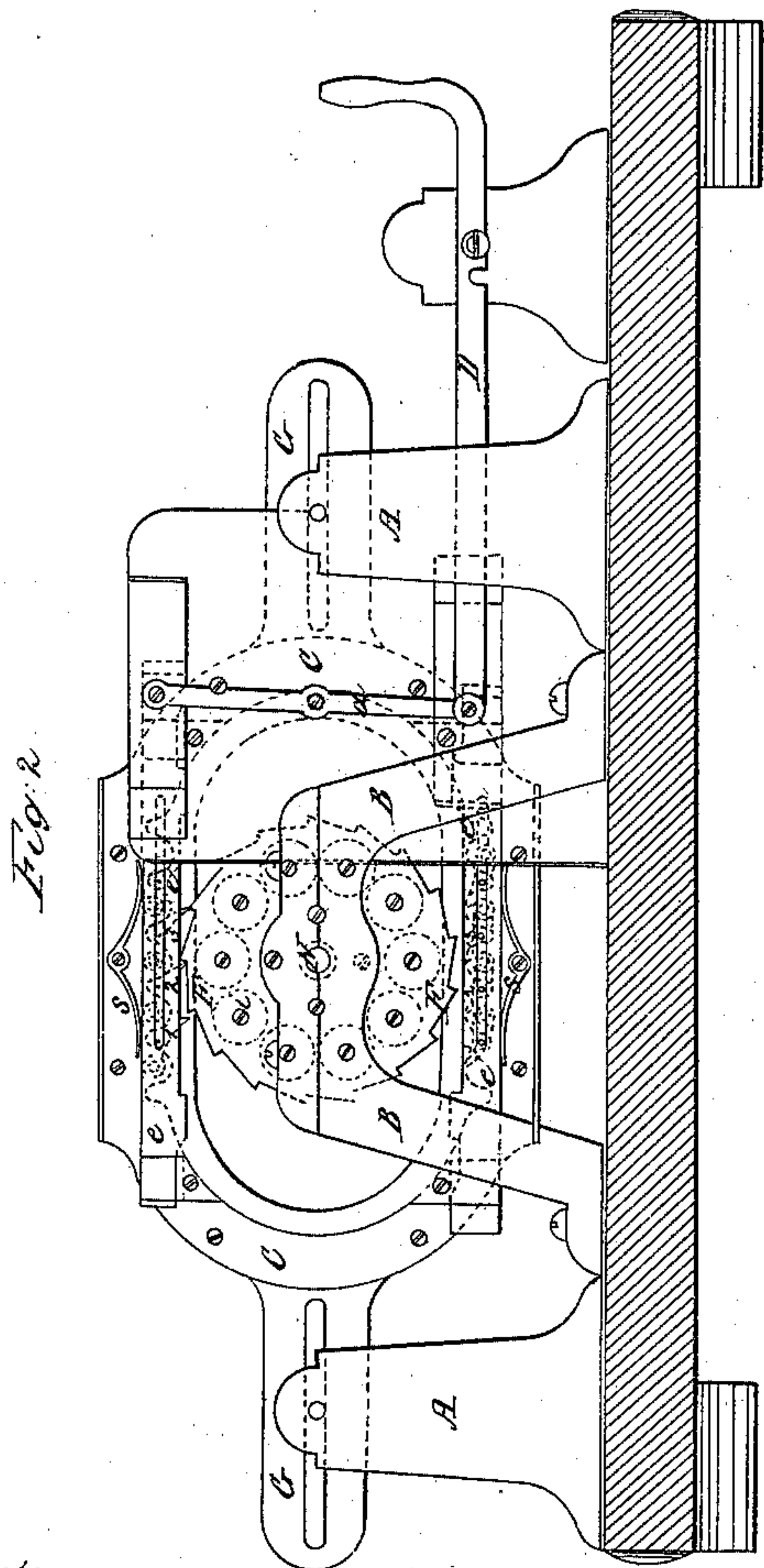
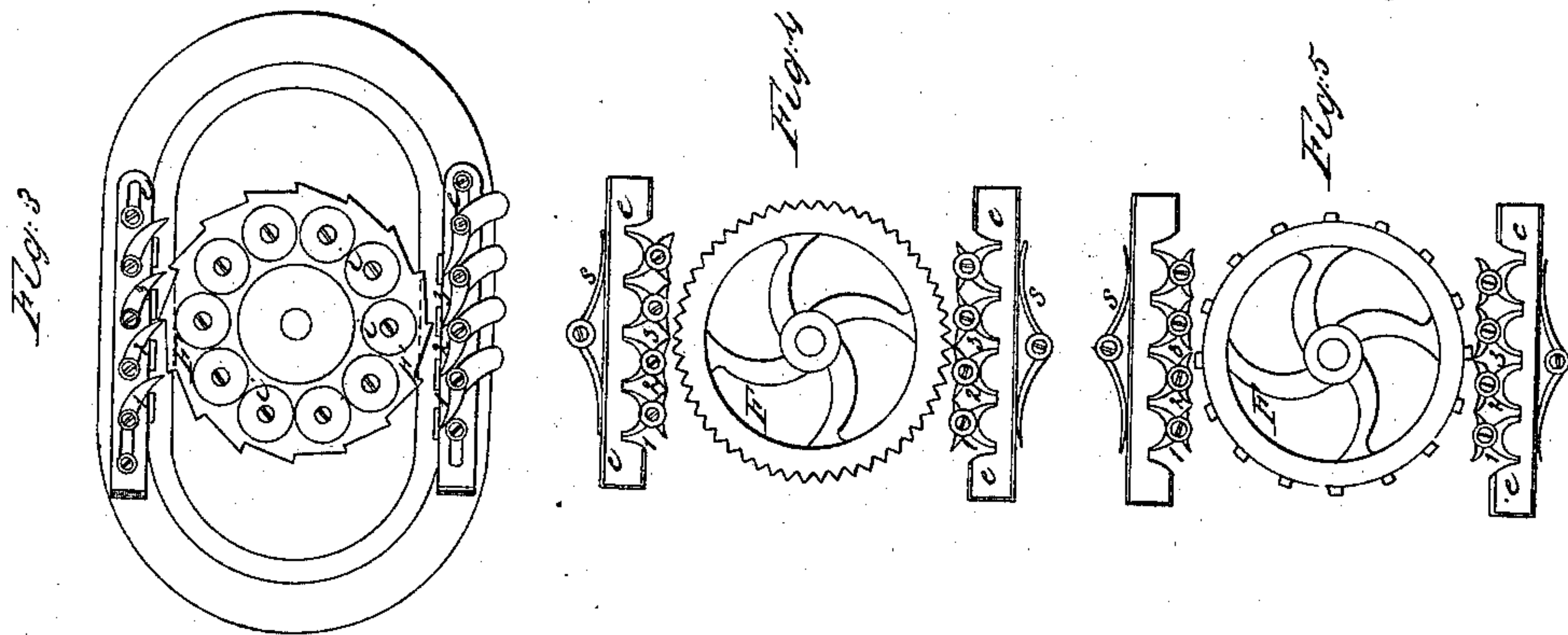


I. Chapman,

Converting Motion.

N^o 21,065.

Patented Aug. 3, 1858.



Witnesses
James P. McLean
David Crocker

Inventor
Isaac Chapman

UNITED STATES PATENT OFFICE.

I. CHAPMAN, OF NEW YORK, N. Y.

CONVERTING RECIPROCATING INTO ROTARY MOTION.

Specification of Letters Patent No. 21,065, dated August 3, 1858.

To all whom it may concern:

Be it known that I, ISAAC CHAPMAN, of New York city, in the county and State of New York, have invented certain novel and useful Improvements in the Mode of Operating Shafts; and I hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, which are lettered to correspond with and constitute a part of the specification.

To enable others skilled in the art of manufacturing to make and use my invention I will describe it as follows.

Description.

Figure 1, is a ground plan of my improved method of operating a shaft by means of a parallel instead of a crank or rotary motion. Fig. 2 is a side view of the machine, showing the standards (A, A,) the frames (B, B,) that support the main shaft (N) the double ratchet wheel (F, F,) which is formed of two plates which are separated by a number of antifriction rollers (i, i, i, i,) sufficiently far to allow the bearing (m) Plate 1, of the frame (C,) to play freely back and forth between the ratchet plates or wheels (F, F,) and on the rollers (i, i, i, i).

Letters (e, e, e, e,) are adjustable plates provided with a long slot to receive and operate the fulcrums of the pawls (1, 2, 3, &c.) These adjustable plates throw the pawls or dogs out of or in gear with the ratchets when operated by the levers (D, d,) Fig. 2 and the springs (s, s,) and slide plates (e', e', e').

Letters (s, s) are two springs so arranged that they press firmly against the upper edge of the top plate (e, e,) and against the lower or bottom edge of the bottom plate (e' e',) are so constructed that they operate the pawls immediately over and under the center of the shaft (N).

I do not confine myself to the use of a double wheel (F) as my arrangement of pawls is equally applicable to a single wheel in which case the pawls are double but where a reverse motion is required the double ratchet is used as shown in the drawings.

Fig. 3 represents one plate or ratchet wheel (F,) having the antifriction rollers (i, i, i, i,) attached. This ratchet is rotated by means of pawls (1, 2, 3, &c.) which are operated by their own gravity. Fig. 4 represents a single ratchet wheel (F,) which is revolved by the double pawls (1, 2, 3, &c.) which are operated by the spring slides (e, e',) similar to Fig. 2. Fig. 5, represents another kind of wheel (F) operated by double pawls as aforesaid.

The advantage of my invention is first to counteract the dead center in a great measure. Secondly to get a parallel motion direct from the driving power, and thirdly, doing away with the necessity of stopping the power to reverse the action of the machine.

The fly wheel may be dispensed with if necessary yet in most cases it steadies the motion better than any other application.

The pawls are readily thrown in or out of gear by simply moving the levers (D, d,) from one notch to the other and shifting the spring slides (e, e, and e', e',) in a horizontal direction.

I do not claim the separate or individual parts of the above described apparatus, but What I claim as novel and what I wish to secure by Letters Patent of the United States is—

1. The ratchet wheel or wheels (F, F,) in combination with the pawls (1, 2, 3, &c.) arranged and operated by means of a parallel motion in the manner substantially as described and shown in the drawings.

2. I also claim the manner of throwing the pawls (1, 2, 3, &c.) in and out of gear with the ratchet, while the power is in motion, by means of the levers (D, d,) and the parallel spring slide (e, e',) in the manner and for the purpose set forth and shown in the accompanying drawings.

In testimony whereof I hereunto subscribe my name in the presence of two witnesses.

ISAAC CHAPMAN.

Witnesses:

DAVID CROWTHER,
JAMES P. McLEAN.