

(No Model.)

5 Sheets—Sheet 1.

T. C. DEXTER.
PAPER REGISTERING MACHINE.

No. 550,950.

Patented Dec. 10, 1895.

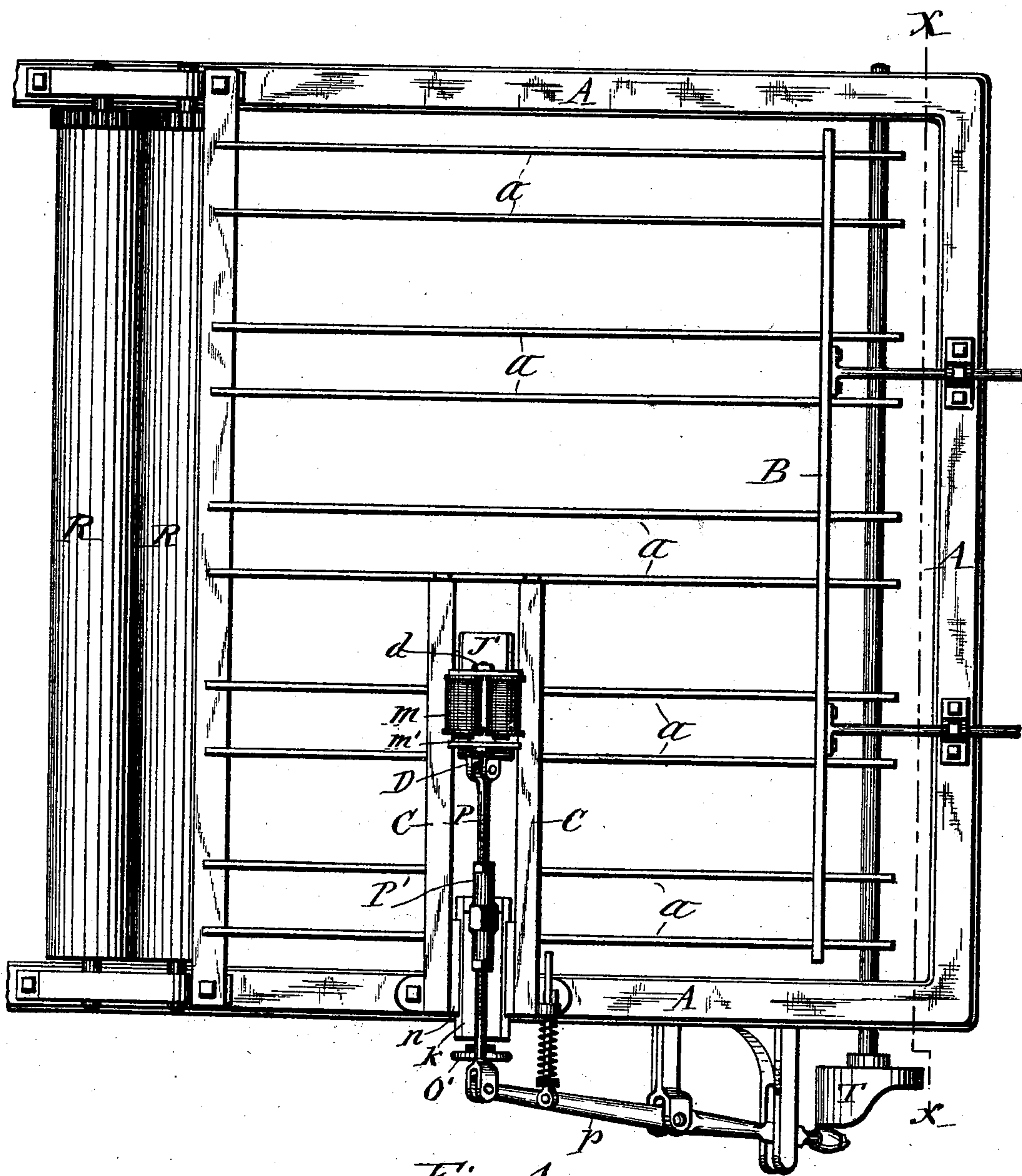


Fig. 1

WITNESSES:

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J. J. Laess

INVENTOR:

Talbot C. Dexter
By E. Laess
his ATTORNEY

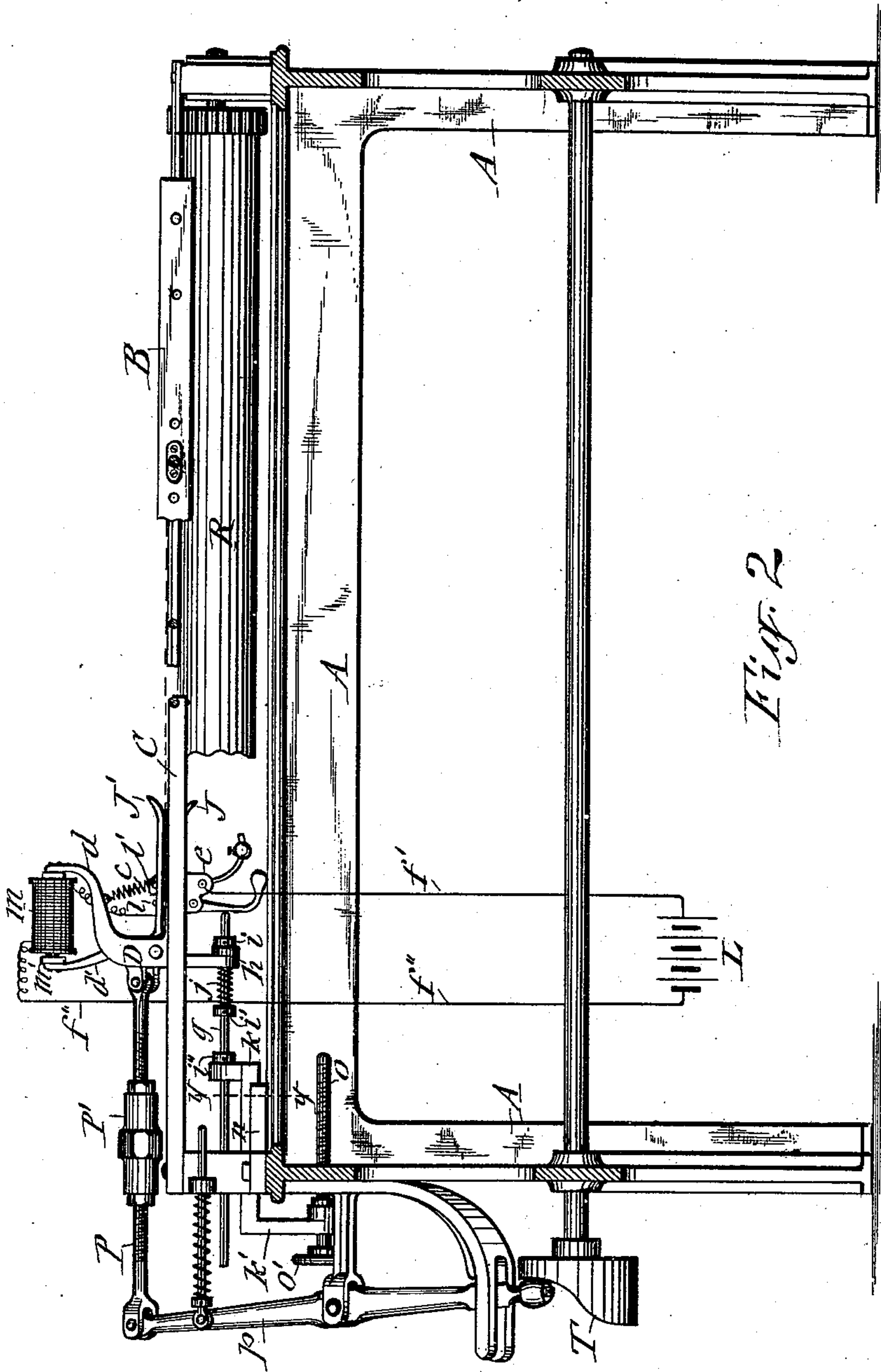
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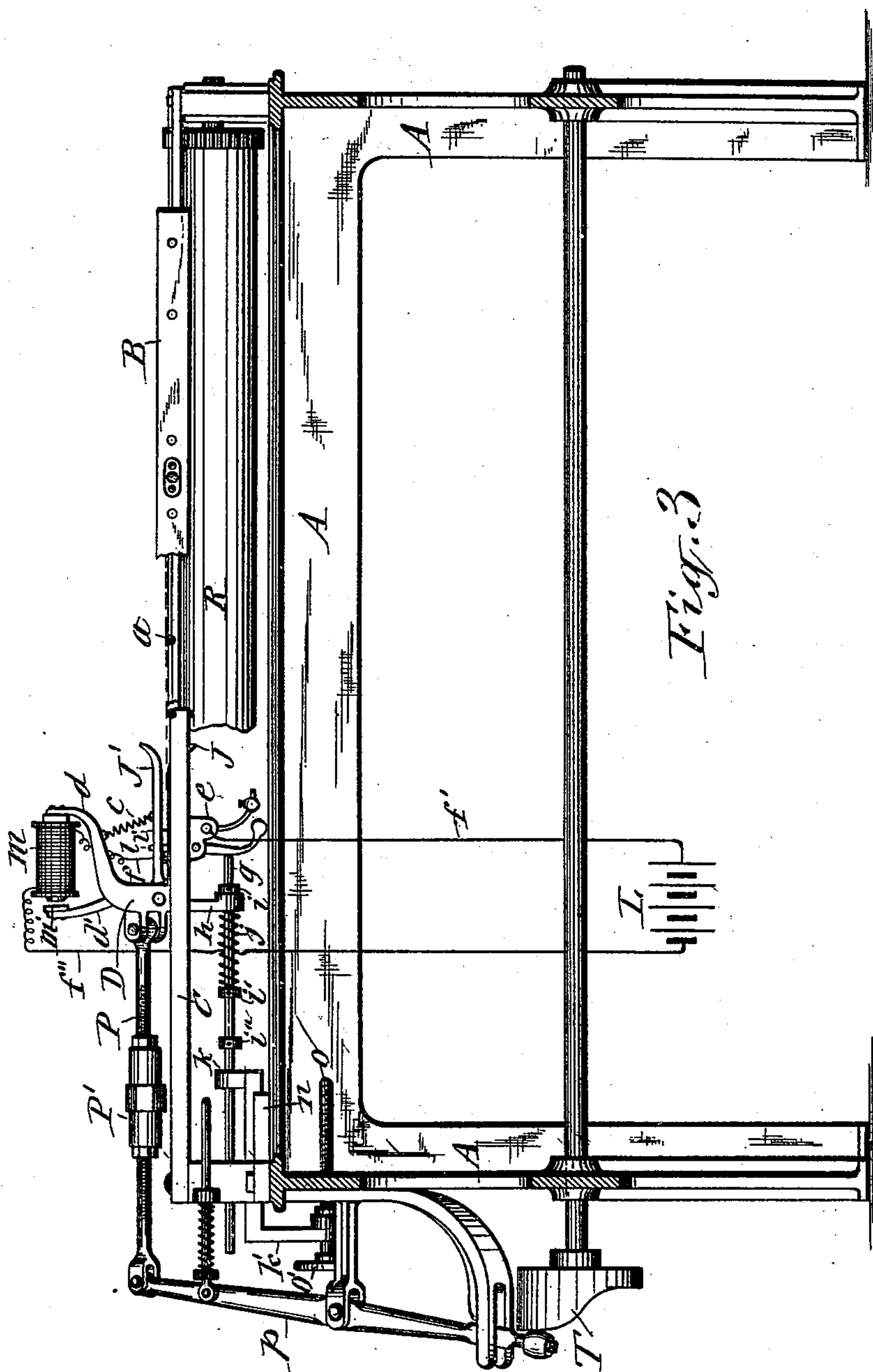
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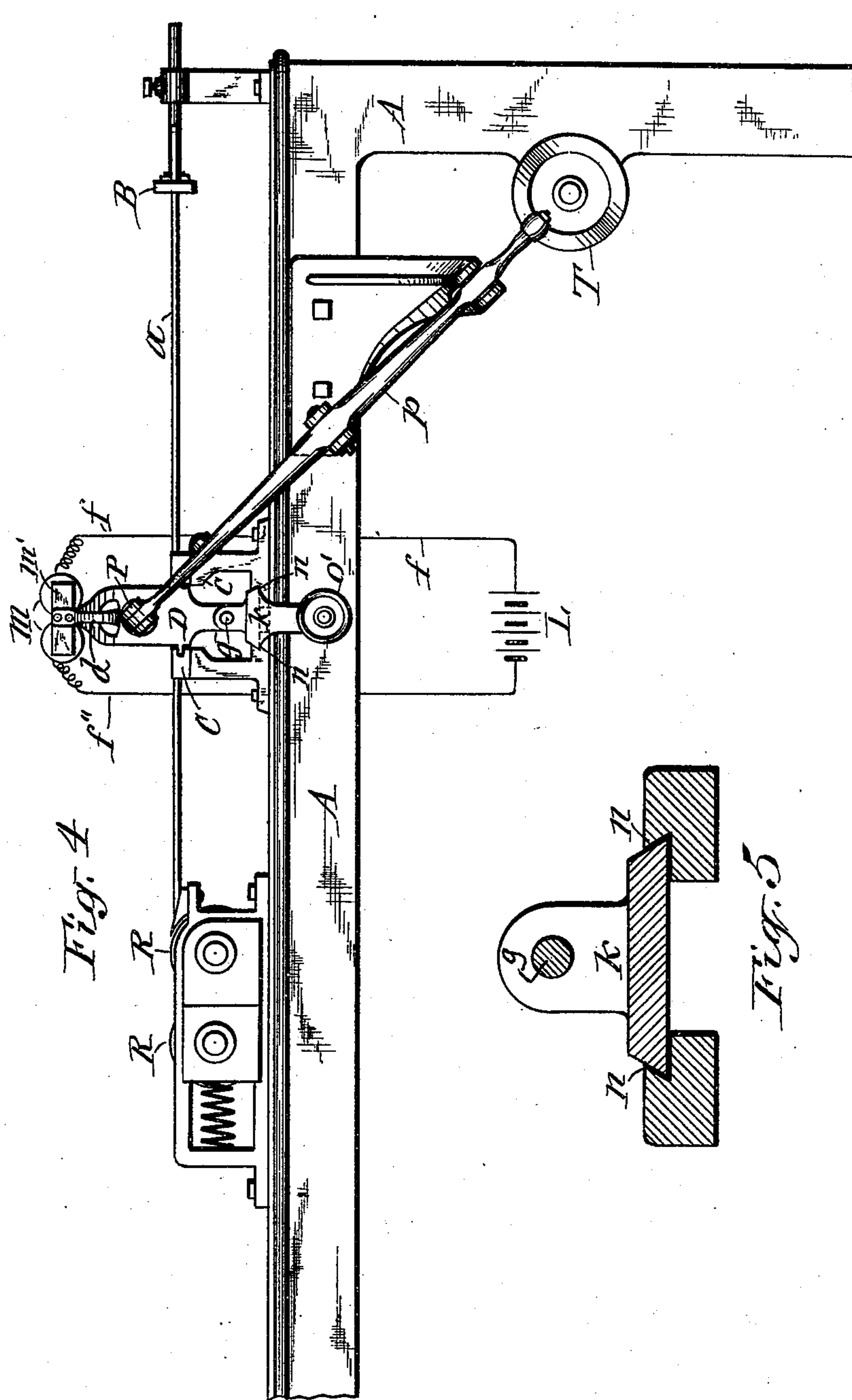
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WITNESSES:

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(No Model.)

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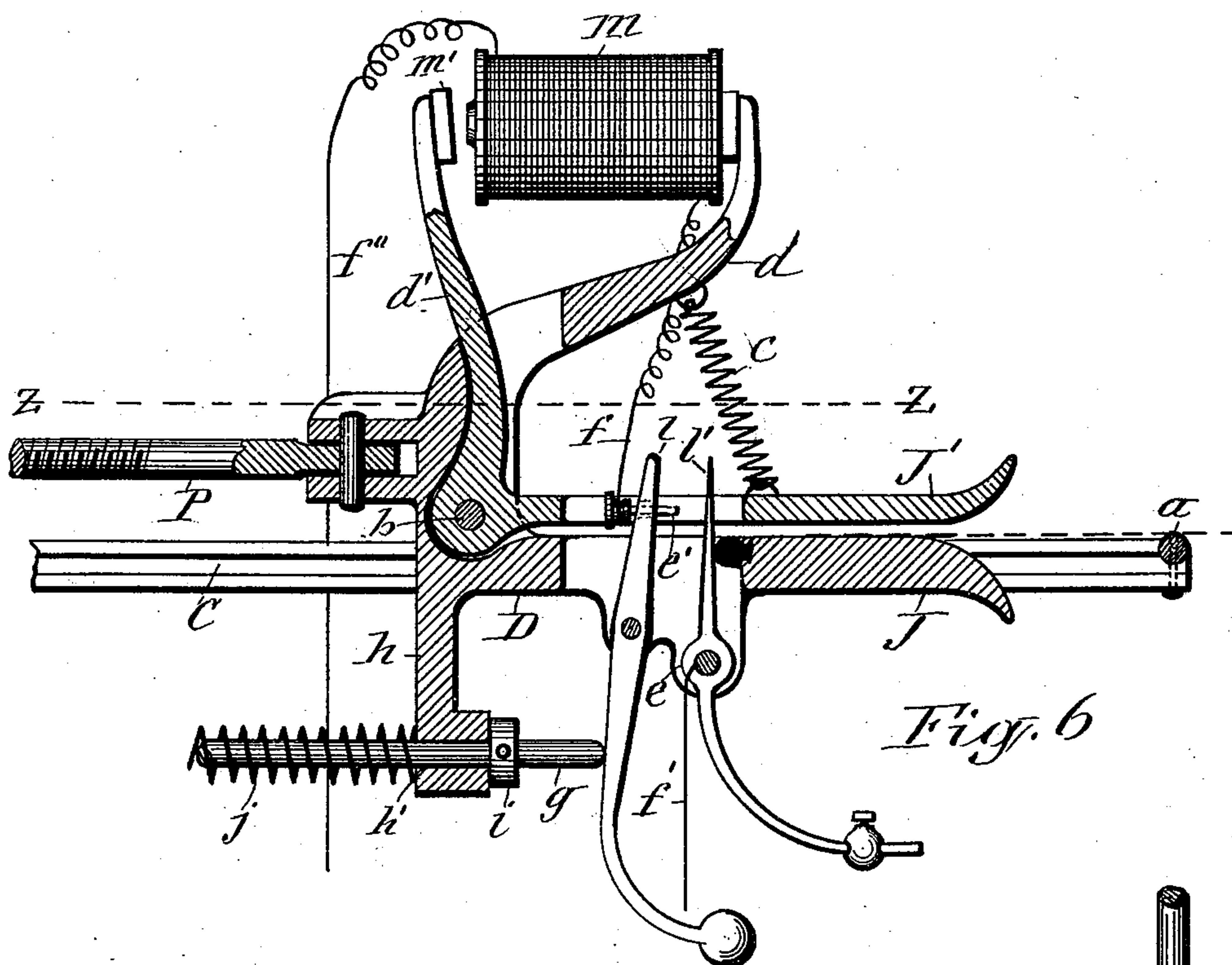


Fig. 6

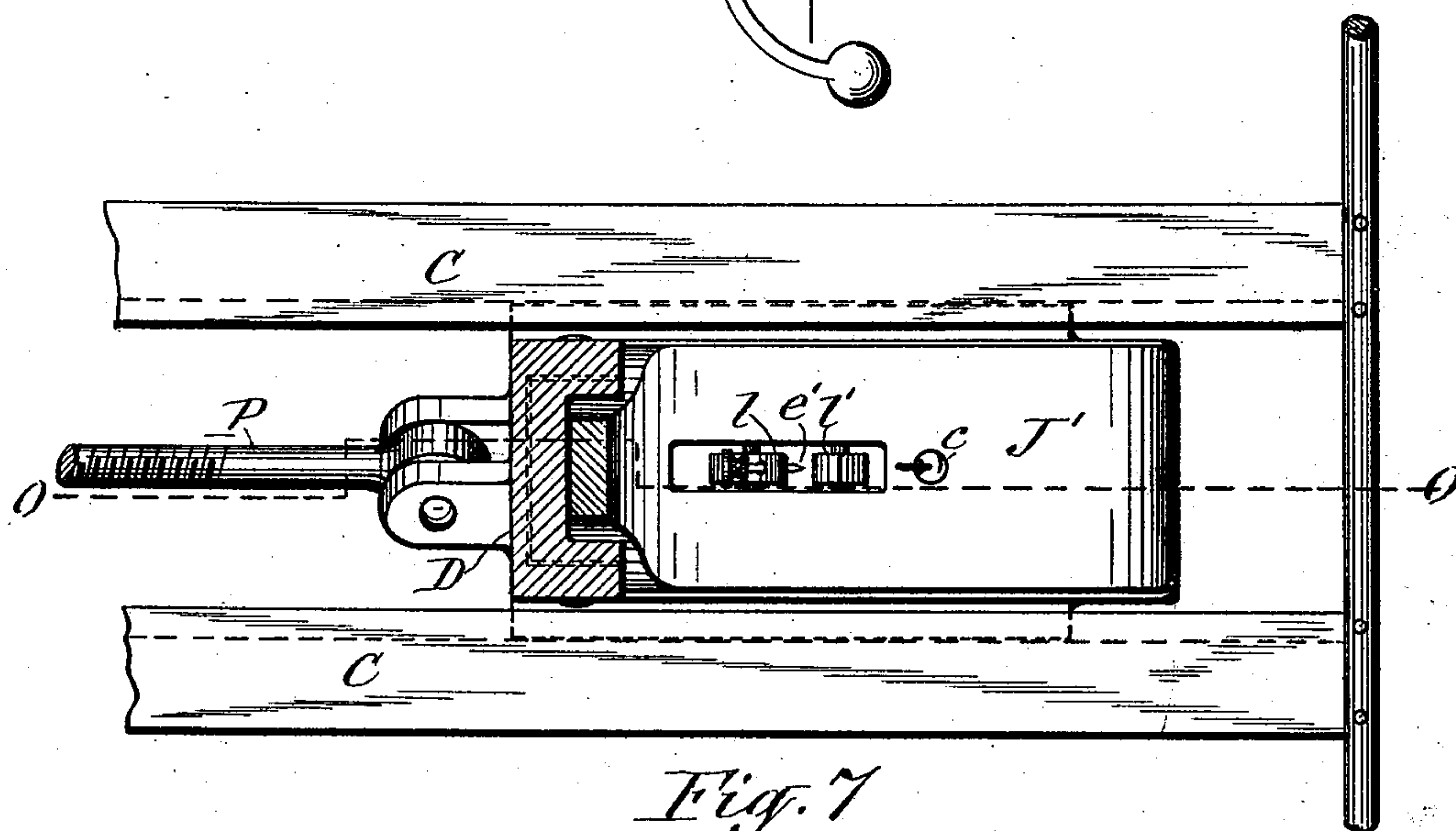


Fig. 7

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UNITED STATES PATENT OFFICE.

TALBOT C. DEXTER, OF PEARL RIVER, ASSIGNOR TO THE DEXTER FOLDER COMPANY, OF NEW YORK, N. Y.

PAPER-REGISTERING MACHINE.

SPECIFICATION forming part of Letters Patent No. 550,950, dated December 10, 1895.

Application filed October 26, 1894. Serial No. 527,001. (No model.)

To all whom it may concern:

Be it known that I, TALBOT C. DEXTER, of Pearl River, in the county of Rockland, in the State of New York, have invented new and useful Improvements in Paper-Registering Machines, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates more particularly to the electrically-controlled paper-registering machine shown in my prior application for patent, Serial No. 509,444, in which the gripper is caused to take hold of the paper solely by mechanical force and caused to release the paper at the proper time by electric magnetic energy transmitted mechanically to the gripper. To effect this operation of the gripper, I found it necessary to employ a lost motion in the mechanism which imparted reciprocating motion to the gripper in order to open the gripper for receiving the margin of the paper and subsequently close the gripper to take hold of the paper and draw it laterally. Said lost motion entails considerable wear of the joint by which the gripper is connected to the pitman.

My present invention is designed to obviate this defect and to increase the efficiency of the registering-machine; and to that end the invention consists in the improved construction and combination of parts hereinafter fully described, and specifically set forth in the claims.

In the annexed drawings, Figure 1 is a plan view of my improved paper-registering machine applied to a paper-folding machine. Figs. 2 and 3 are vertical transverse sections on line X X in Fig. 1, showing the registering mechanism in its two extreme operative positions. Fig. 4 is a side view of the machine. Fig. 5 is an enlarged transverse section on line Y Y in Fig. 2. Fig. 6 is a vertical longitudinal section on line O O in Fig. 7, and Fig. 7 is a horizontal longitudinal section on line Z Z in Fig. 6.

Similar letters of reference indicate corresponding parts.

A represents the main frame of a paper-folding machine; RR, the folding-rollers; *aa*, the bars which support the paper in its passage beyond said rollers; and B denotes the end

gage, which arrests the longitudinal movement of the paper preparatory to being registered and folded. All of said parts are of the usual well-known construction.

I do not limit my invention to its application to paper-folding machines, as it is equally useful on paper-feeding machines and other machines requiring the paper to be fed to them one sheet at a time and said sheet to be adjusted to proper alignment preparatory to being operated on.

To the top of the frame A is rigidly secured a horizontal guide C, which is at right angles to the paper-supporting bars *aa*. Upon this guide rides the reciprocating slide D, from which extends rigidly the lower jaw J of the paper-gripper. Said jaw is immediately beneath the panel of the paper. The upper jaw J' of said gripper is hinged to the slide D at the heel of the lower jaw, as shown at *b*, and is sustained normally in an open and raised position by any suitable means, preferably by a spring *c*, connecting said jaw to an arm *d*, which projects upward from the slide or heel of the lower jaw and has secured to its upper end the electromagnet *m*, which extends rearward from said arm. The upper jaw has rigidly affixed to it an arm *d'*, extending upward from the pivoted end of the jaw and having secured to its upper end the armature *m'*.

On the slide D is carried an electric-circuit closer consisting, essentially, of two yieldingly-supported poles held normally in a circuit-breaking position and in the path of the paper to be actuated to close the circuit by one of the poles coming in contact with the edge of the paper. This circuit-closer I prefer to form of two small levers *ll'*, pivoted at or near the center of their lengths to ears *ee* on the under side of the slide D and projecting with their upper ends through slots in the jaws. The contact-point *e'* on the upper end of the lever *l* is connected by a wire *f* to the magnet *m*, and wires *f'* and *f''* connect, respectively, the lever *l'* and magnet with the battery L.

From the slide D depends a hanger *h*, terminating with a horizontal eye or guide *h'*, in which is supported one end of a push-bar *g*, which end abuts against the lower portion of the lever *l*. Said bar is sustained yieldingly

in a longitudinal direction and in its normal position by means of collars i and i' , attached to the bar g at opposite sides of the hanger, and an expansive spring j , interposed between the rear collar i' and hanger h , which spring forces the bar rearward, which movement of the bar is arrested by the collar i coming in contact with the aforesaid hanger, as shown in Fig. 3 of the drawings. The lever l is made to rest by gravity against the end of the push-bar g , so as to maintain it in contact therewith. The outer end of the push-bar passes through an eye on a bracket k , which is mounted on a guide n , fixed to the frame A parallel with the bar g . Said bracket is provided with an arm k' , in which is journaled a screw o , parallel with the guide n and passing through a nut secured to or formed in the side of the frame A. The screw is shouldered on the arm k' , so as to cause the bracket k to move longitudinally with the screw. A hand-wheel o' is attached to the outer end of the screw to facilitate the operation of turning it. To the push-bar g is attached a third collar i'' between the bracket k and collar i' and arranged in such a position as to come in contact with the bracket k during the latter part of the outward or retrograde movement of the slide D. Said contact prevents the bar g from following the slide to the end of its said movement and thereby causing said bar to push the lever l out of contact with the companion lever l' , as hereinafter explained. All of said collars are adjustable longitudinally on the push-bar to permit the operation thereof to be regulated.

The slide D, which carries the gripper, receives its reciprocating motion from a rotary cam T by means of a lever p , fulcrumed on the frame A and having one end engaging the cam and the opposite end connected to the slide D by pitman P.

In order to allow the gripper to be adjusted in its position so as to operate on paper of different sizes, I make the pitman P adjustable in length by forming the same of two end sections, which are screw-threaded, respectively, right and left and coupled together by a turnbuckle or sleeve P', having corresponding right and left screw-threads in opposite ends. By turning said sleeve the two end sections of the pitman can be moved either from or toward each other to increase or diminish the length of the pitman, as may be desired. The collars i i' i'' are to be adjusted correspondingly on the bar g .

The operation of the described registering-machine is as follows: The paper in process of being fed to the folding-machine is arrested in its movement by the end gage B. Then the slide D is pushed forward or toward the paper, and in this movement the gripper is in its open position to receive the margin of the paper between the jaws J J' and cause the edge of the paper to push the lever l' into contact with the lever l , and thereby close

the electric circuit. This energizes the magnet m , and by the attraction of the armature m' the upper jaw J' is caused to press down upon the paper, which is thus gripped between the jaws. As soon as this is effected the slide D receives retrograde movement and causes the paper to be drawn along by the gripper until the collar i'' on the push-bar g strikes the eye of the bracket k , whereby the further movement of the push-bar is arrested. The slide D, however, continues to move sufficiently rearward to cause the push-bar to tilt the lever l , and thereby break the circuit. This allows the spring c to lift the upper jaw J', and thereby release the paper to be carried to the folding-rollers R R. The gripper remains in its open position during the next forward movement to receive the next sheet of paper in the manner before described.

Having described my invention, what I claim is—

1. An electrically controlled paper registering machine comprising a reciprocating gripper having its jaws held normally in an open position, an electro magnet causing by the attraction of its armature to close said jaws, a normally open electric circuit and a circuit closer in the path of the paper to be actuated thereby as set forth.

2. In combination with the longitudinal paper-supporting bars and end-gage arresting the longitudinal movement of the paper, a horizontal guide at right angles to said paper-supporting bars, a reciprocating slide riding on said guide, a gripper mounted on said slide and having its lower jaw sustained beneath the plane of the paper, the upper jaw sustained normally in its open position, an electro magnet traveling with the slide, the armature connected to the upper jaw and when attracted closing said jaw, a normally open electric circuit and a circuit closer carried by the slide in the path of the paper to be actuated thereby as set forth.

3. In combination with the longitudinal paper-supporting bars and end-gage arresting the longitudinal movement of the paper, a horizontal guide at right angles to said paper-supporting bars, a reciprocating slide riding on said guide, a gripper carried on the slide with the lower jaw beneath the plane of the paper, the upper jaw sustained normally in its open position, an arm attached to said slide, an electro magnet attached to said arm, an arm extending from the lower jaw, the armature attached to said arm, a normally open electric circuit, and a circuit closer carried with the slide and disposed in the path of the paper to be actuated thereby as set forth.

4. In combination with the longitudinal paper-supporting bars and end-gage, a horizontal guide at right angles to said paper-supporting bars, a reciprocating slide riding on said guide, a gripper mounted on said slide and sustained with its lower jaw beneath the plane of the paper, the upper jaw sustained

normally in its open position, an electro magnet carried on the slide, the armature connected to the upper jaw, a normally open electric circuit, a circuit closer carried on the slide and having one of the poles in the path of the paper to be actuated thereby, and the other pole sustained yieldingly opposed to the companion pole, and a stop opposed to the retrograde movement of the slide and throwing the aforesaid poles out of contact as set forth.

5. In combination with the longitudinal paper-supporting bars and end-gage, a horizontal guide at right angles to said conveyers, a reciprocating slide riding on said guide, a gripper carried on said slide with the lower jaw beneath the plane of the paper, the upper jaw sustained normally in its open position, an electro magnet carried on the slide, the armature connected to the upper jaw, a normally open electric circuit, a circuit closer carried on the slide and having one of the poles in the path of the paper to be actuated thereby, the other pole sustained yieldingly opposed to the companion pole, a yielding push-bar carried on the slide and supporting the aforesaid opposed pole in its normal position, and a stop in the path of said push-bar to arrest the movement thereof and thereby by throwing said pole out of its normal position and breaking the circuit as set forth.

6. In combination with the longitudinal paper-supporting bars and end-gage, a horizontal guide at right angles to said conveyers, a reciprocating slide mounted on said guide, a gripper carried on the slide with the lower jaw beneath the plane of the paper, the upper jaw sustained normally in its open position, an electro magnet carried on the slide, the armature connected to the upper jaw and closing the same when attracted by the magnet, a normally open electric circuit, a circuit

closer carried on the slide and having both poles sustained yieldingly and normally out of contact, one of said poles being in the path of the paper to be actuated thereby, a longitudinally movable bar carried with the slide and sustaining the other pole in its aforesaid position, a spring supporting said bar in its normal position, and a stop in the path of the bar arresting the movement thereof during the retrograde movement of the slide and thereby separating the poles as set forth.

7. In combination with the horizontal guide and slide mounted thereon, the gripper having its lower jaw fixed to said slide and formed with an upwardly projecting arm, the magnet attached to said arm and extending rearward therefrom, the upper jaw hinged to the lower jaw and provided with an upwardly projecting arm, the armature attached to the latter arm, a normally open electric circuit, a circuit closer having its poles pivoted to the slide and sustained normally apart and with one pole in the path of the paper to be actuated thereby, a longitudinally movable bar abutting with one end against the other pole beneath the pivot thereof, a hanger on the slide carrying one end of said bar, a bracket connected to the main frame adjustably in a direction parallel with the aforesaid bar and supporting the outer end thereof, collars adjustably connected to the bar at opposite sides of the aforesaid hanger, an expansive spring interposed between the rear collar and hanger, and a stop adjustably connected to the bar between the rear collar and the aforesaid bracket as set forth.

In testimony whereof I have hereunto signed my name this 6th day of July, 1894.

TALBOT C. DEXTER. [L. S.]

Witnesses:

J. J. LAASS,

C. L. BENDIXON.

It is hereby certified that in Letters Patent No. 550,950, granted December 10, 1895, upon the application of Talbot C. Dexter, of Pearl River, New York, for an improvement in "Paper-Registering Machines," an error appears in the printed specification requiring correction as follows, viz: In line 69, page 1, the word "panel" should read *plane*; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed, countersigned, and sealed this 31st day of December, A. D., 1895.

[SEAL.]

JNO. M. REYNOLDS,
Assistant Secretary of the Interior.

Countersigned:

JOHN S. SEYMOUR,
Commissioner of Patents.