

No. 661,961.

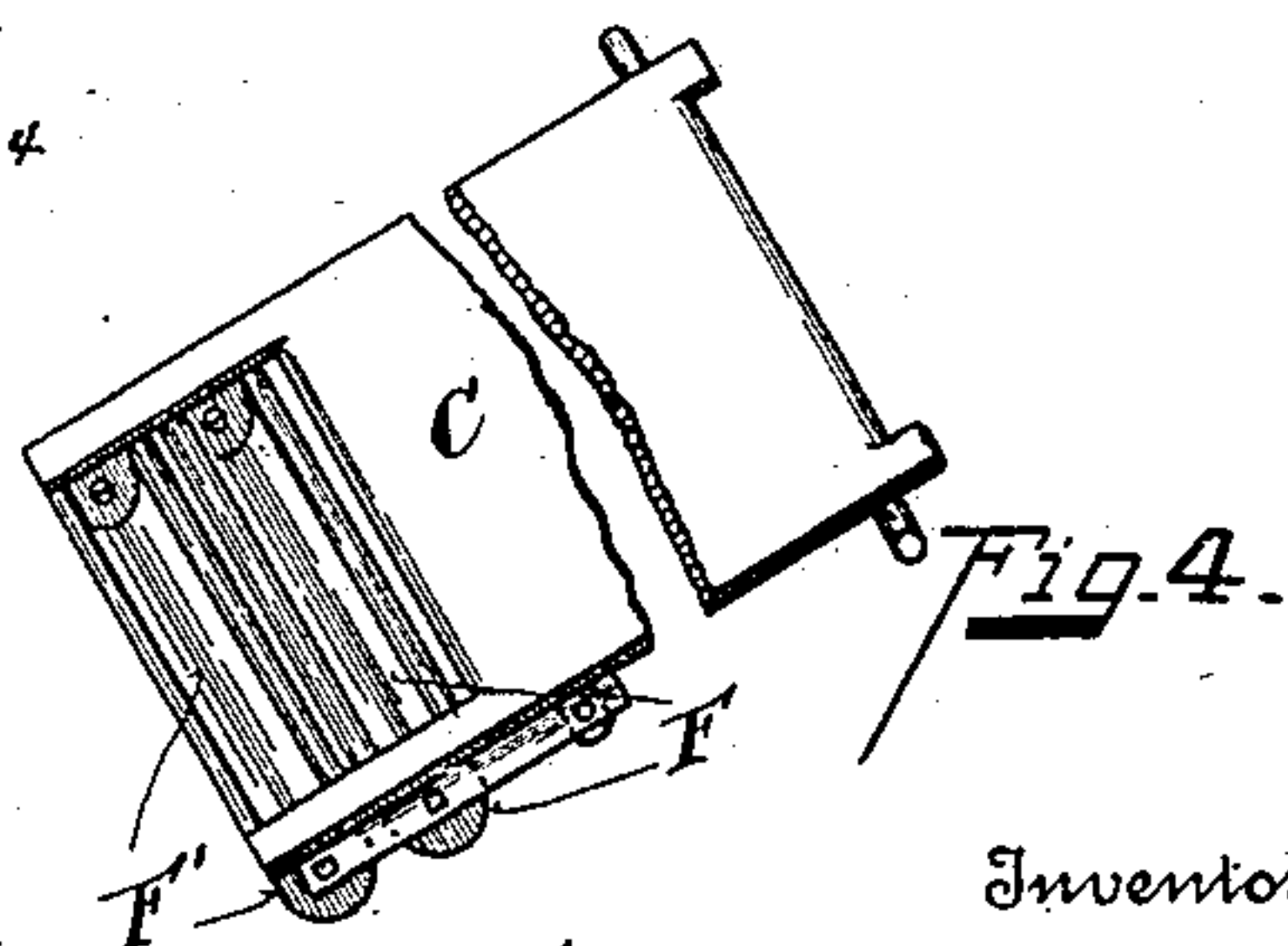
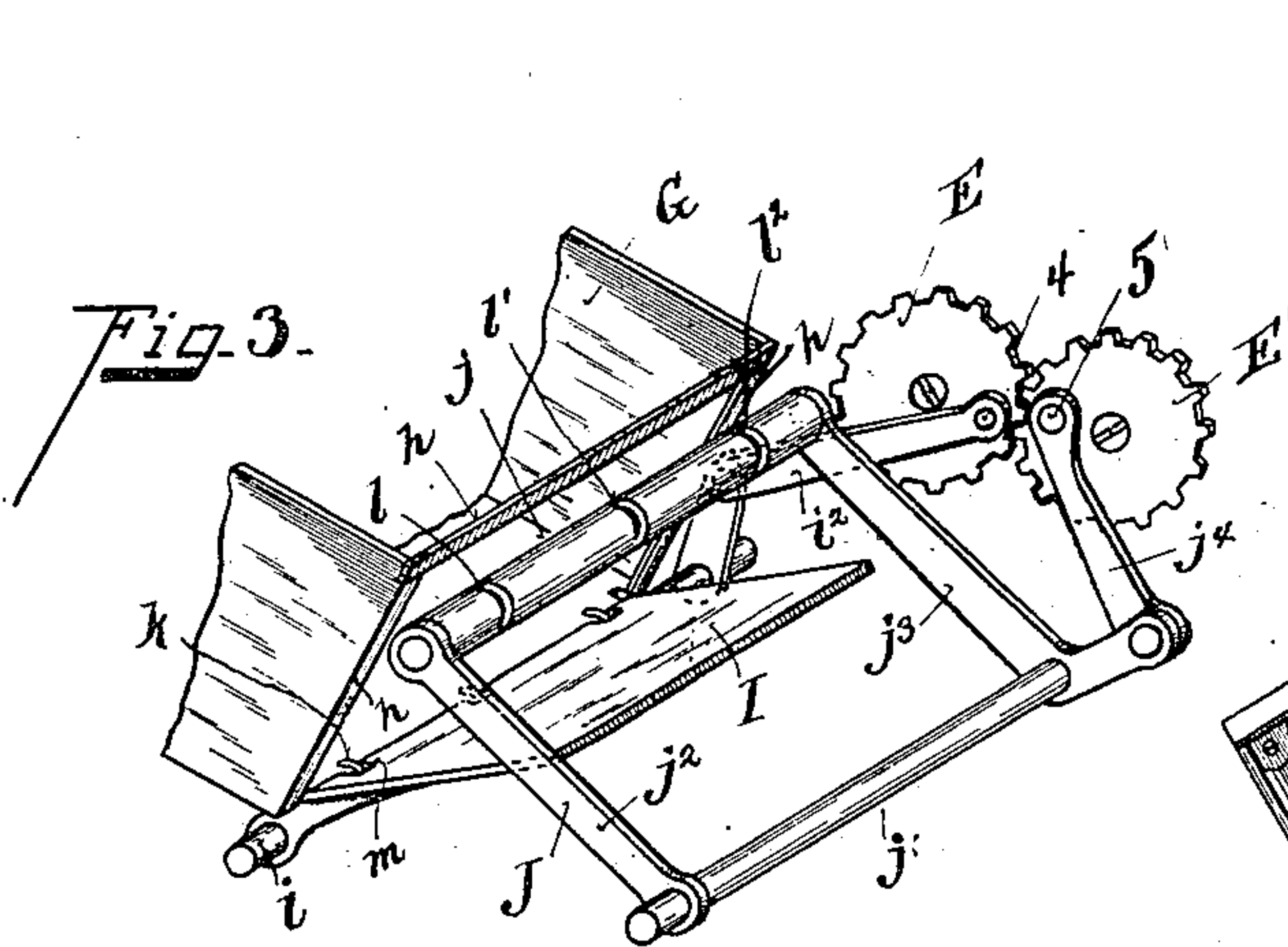
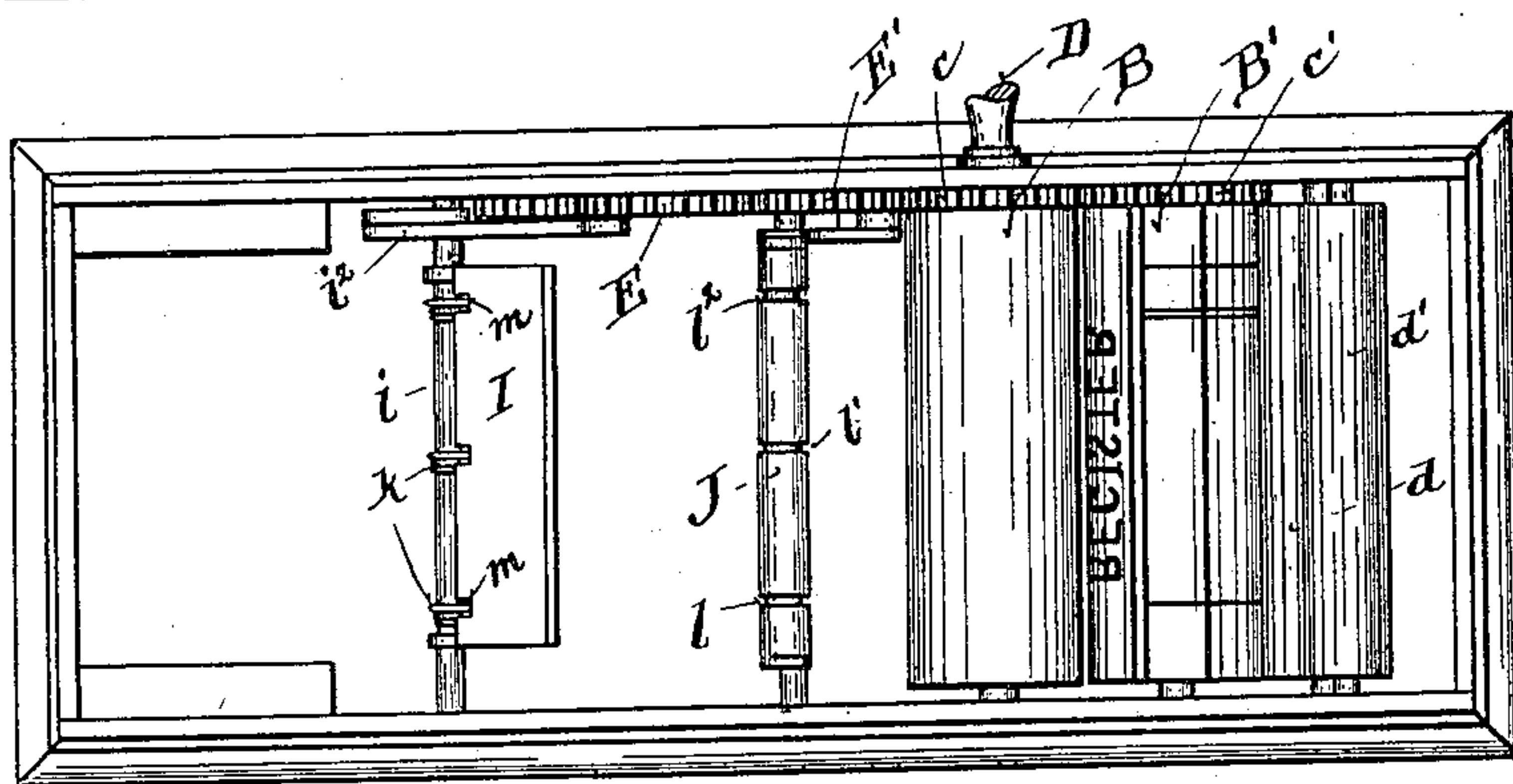
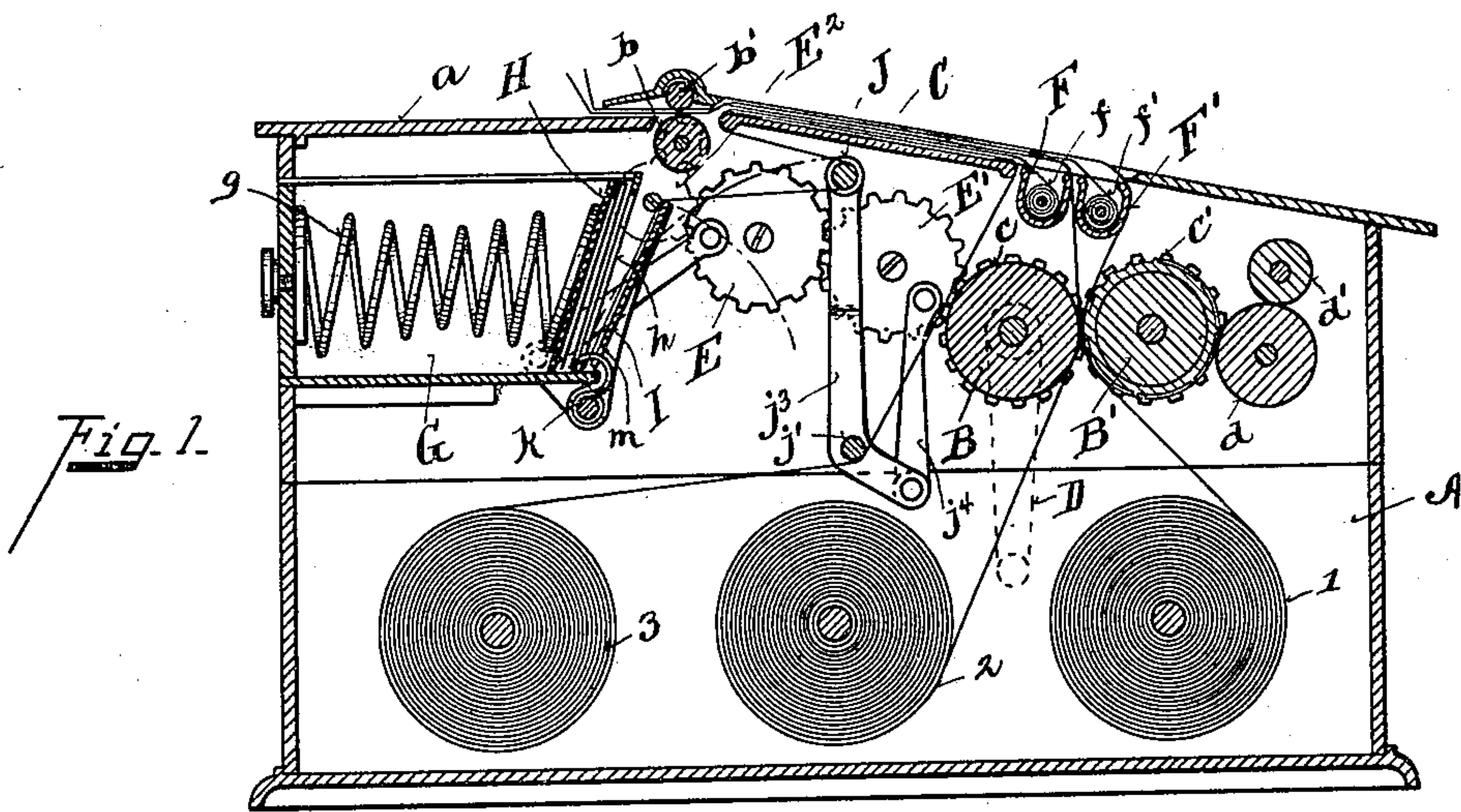
Patented Nov. 20, 1900.

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AUTOGRAPHIC REGISTER.

(Application filed Apr. 18, 1900.)

(No Model.)



Witnesses

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UNITED STATES PATENT OFFICE.

JOHN G. DINKELBIHLER, JR., AND CLYDE C. CRANE, OF CINCINNATI, OHIO.

AUTOGRAPHIC REGISTER.

SPECIFICATION forming part of Letters Patent No. 661,961, dated November 20, 1900.

Application filed April 18, 1900. Serial No. 13,296. (No model.)

To all whom it may concern:

Be it known that we, JOHN G. DINKELBIHLER, Jr., and CLYDE C. CRANE, citizens of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Autographic Registers, of which the following is a specification.

Our invention relates to that class of autographic registers in which a copy is folded and filed.

One of the objects of our invention is to produce a simple and effective folding mechanism for the strip of paper to be filed.

Another object of our invention is to simultaneously print, deliver, and fold the respective strips in definite slip lengths.

Other features and details of our invention will be more fully set forth in the description of the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a central vertical section of our device. Fig. 2 is a top plan view of Fig. 1 with the top plate and carbon-table removed. Fig. 3 is a perspective view of the carrier and folding devices detached. Fig. 4 is a perspective view of the carbon-table.

A represents the register-box, and *a* the top plate thereon.

1 2 3 represent rolls of paper for the original and two copies of the work.

B B' represent the feeding-rolls, between which two strips—the original and first copy—are delivered to the carbon table C and thence between the final delivering-rolls *b b'* and thence onto the top plate *a*. The rolls B B' have the gear-wheels *c c'* at their ends intermeshing, and one of the rolls is provided with a crank-handle D. It will be observed that the extremities of the gear-teeth of the roll *b* are shown flush with the face of said roll and that the teeth of the gears of rolls B B' are projected from the surface of said rolls, the result of which is that the final delivering-rolls have a faster surface speed than the feed-rolls, so that the slack is taken up between said pairs of rolls and the paper is always held taut over the writing-table. Various methods of conducting these strips to the delivering-point may be arranged as desired. The roll *b* is geared to the rolls B B' through the gear-wheels E E' E², the fur-

ther functions of which latter rolls will be hereinafter described. The top roll *b'* is in frictional contact with its cooperating roll *b*, as shown in Fig. 1. One of the rolls—say B'—is a printing-roll receiving ink from the rolls *d d'*.

F F' represent pockets in the top part of the plate, in which are located, respectively, the carbon rolls *f f'*, the free ends of which project out over the writing-table C. One of the strips of paper—say 2—passes between the pockets and the carbon, and the other strip—say 1—passes over the front edge of the first carbon under the writing-table.

G represents a filing-compartment for receiving and packing the folded strips. It is preferably provided with a coil-spring *g*, adapted to be compressed within itself. At the receiving end of the compartment the spring is secured to a yielding abutment, which is shown as a platen H, movable longitudinally in the compartment G and bearing normally against the retaining-flanges *h* around the end of compartment G. Many mechanical equivalent means might be devised which would have the retaining function of the flanges above described, and we do not wish to limit the means to the particular form, except in so far as it may be expressly incorporated in the claims. When the paper is folded therein, the said platen H compresses the paper against the flanges *h* to hold the paper within the compartment. At the bottom end of this compartment is pivoted a folding member I, having the pivotal movement to and from the open end of the compartment and against the platen H, with which it completely registers when closed. The carrier member J is pivoted to the frame of the register between the end of the compartment G and the rolls B B'. In the preferred form this carrier consists of the looping-bar *j*, pivot-bar *j'*, and connecting side pieces *j² j³*, to one of which, *j³*, is pivoted a crank-arm *j⁴*. The folding member I turns on its pivot member *i* and has a crank-arm *i²*. These crank-arms *i²* and *j⁴* are pivoted to the pins 4 5, respectively, on the gears E E'. The carrier member J moves in a quarter-circle to and from the bottom of the open end of compartment G, passing over the folding member I. The pivot-bar *i* of the folder I carries

upon it coil-springs k . The springs have hookends bearing normally toward the platen H, engaging through orifices m in the said folder against the platen H. The spring-hooks engage over the looping-bar in its lowermost position and pass the said bar by means of notches $l' l'^2$, provided in the looping-bar for this purpose.

Mode of operation: The strip to be filed from roll 3 is passed over the bar j' of the carrier J and over the front and rear end of the tablet C, thence downwardly over the upper face of the looping-bar j , and thence through the carrier over the folding member I into the compartment G. When the crank D is revolved, it turns the gears E E', which actuate the crank-bars i^2 and j^4 in time movements as follows: The folder I begins to move downward a little in advance of the downward movement of the carrier J, which passes over the end of the folder I, carrying with it the strip down between the end of the compartment G and the folder I. As the folder begins to return the carrier moves upwardly out of the way over the rising end of the folder I. Meanwhile the folder I folds the paper inward against the platen H, which yields to the pressure of the folder, allowing the paper strip to be forced into the compartment G, collapsing at its edges sufficient to pass the retaining-flanges h , and then the platen being immediately compressed by its spring forces the paper in its proper shape back against the flanges which engage the edges of the paper, thus retaining the folded strip in place. It will be seen from Fig. 5 that when the folder has carried the fold into engagement with the retaining device in the end of the compartment G the paper will be stretched from the top of said compartment around the carrier in its uppermost position and thence over the end of the writing-table. As the carrier begins to move toward the receiving-compartment it presses upon the top of the paper strip, one end of which is held in the top of said compartment, and pushes said paper down between the end of said compartment and the opening folder. When the carrier has reached the limit of its stroke, it brings the crease of paper into engagement with the spring k , projecting through the orifice in the folder. These springs pass through the notches l' in the carrier-bar j and grasp the paper. As the folder moves toward the receiving-compartment these springs k are caught by the bottom of the compartment toward the end of the movement and the folder passes over the ends of the hooks, thus automatically releasing the paper at the moment it is carried by the folder into the receiving end of the compartment and engaged between the yielding abutment and the flanges of said compartment. It will also be seen that from the moment the folder puts the paper into the compartment the further rearward travel of the carrier-bar serves to unroll from the roll 3 a fresh supply of paper for the next

folding operation. Fig. 5 represents the device at the end of this movement and the amount of paper tolled off between the top of the said compartment and the adjoining top of the writing-table represents approximately the length of paper which will be consumed in the next folding operation. The rolls B B' are relatively proportioned to the length of the movement of the folder and carrier, so that the strips from the rolls 1 2 3 shall be of any corresponding relative length selected.

Various methods of receiving the folds formed by the parts I J other than the particular means herein shown, consisting of the spring-platen and the retaining-flanges h , might be devised, and we do not wish to be limited further than where such elements are specifically named in the claims.

The free ends of the carbons only being used, and as they are not unrolled with each operation, the same carbon section may be run out and the new sections from the two rolls placed intermediate of the strips for the rolls 1 2 3 in the usual manner. The carbon strips extend longitudinally in the line of travel of the paper over the writing-table, and so are not torn or displaced by the running off of said paper strips.

It is further obvious that the rolls B B' may be so arranged that they are measuring-rolls and print regularly and certainly. A single movement of the crank D serves to measure off the proper-sized strips, print the same always in the same relative positions, delivering the same, creasing, folding, and filing the triplicate sheets. These parts are simple, cheap, and efficient in operation, and the compartment G can be made to hold as much or as little as may be desired, and of course this compartment G may be detachable or in any convenient manner accessible, as desired.

Having described our invention, we claim—

1. In an autographic register, the combination of a compartment, a yielding abutment bearing normally toward the receiving end, a retaining device in said receiving end, a reciprocating folder, a reciprocating carrier-arm engaging over the folder, and means for moving the said folder and carrier to and from each other in time movements, substantially as specified.

2. In an autographic register, the combination of a compartment, a yielding abutment in the receiving end, a retaining device in said end toward which the abutment normally bears, a reciprocating folder moving to and from said retaining device, a reciprocating carrier engaging over said folder, during a part of its movement, and means for actuating said folder and carrier in time movements, substantially as specified.

3. In an autographic register, the combination of a compartment, a yielding abutment therein, a retaining device in the receiving end against which the abutment normally bears, a reciprocating folder movable into

and out of contact with said retaining device, a reciprocating carrier engaging over said folder during a portion of its movement, and means for actuating said folder and carrier in time movements, substantially as specified.

4. In an autographic register, the combination of a compartment, a yielding abutment therein, a retaining-flange at the receiving end toward which the abutment normally bears, a reciprocating folder movable to and from said flange, a reciprocating carrier movable over said folder during a part of its travel, and means for actuating said folder and carrier in time movements, substantially as specified.

5. In an autographic register, the combination of a compartment, a yielding abutment therein, a retaining-flange toward which the abutment normally bears, a folder movable into and out of the receiving end of said compartment past said flange, a carrier which passes over the paper strip, movable over said folder during a portion of its travel, and means for actuating said folder and carrier in time movements, substantially as specified.

6. In an autographic register, the combination of a compartment, a yielding abutment therein, a retaining-flange in the receiving end toward which the abutment normally bears, a reciprocating folder movable into and out of said receiving end of the compartment past the retaining-flange, a reciprocating carrier which passes over the paper strip, movable over said folder, during a portion of its movement, a paper-catch at one end of the said folder adapted to engage the loop formed by the carrier, and means for actuating said folder and carrier in time movements, substantially as specified.

7. In an autographic register, the combination of a compartment having an open receiving end, a retaining-flange at said end, a yielding abutment in said compartment bearing toward said flange, a reciprocating folder having a catch, a reciprocating carrier engaging over the strip of paper and adapted to carry a loop over said folder into engagement with said catch, the said folder being bodily movable into and out of said open end of said compartment past said flange, and means for actuating said folder and carrier in time movements, substantially as specified.

8. In an autographic register, the combination of an actuating feed-roll, a compartment having an open end, a retaining-flange in said end, a yielding abutment in said compartment bearing toward said flange, a reciprocating folder movable into and out of said open end, of the compartment, a paper-catch on said folder, a reciprocating carrier movable over said folder during part of its travel into engagement with said catch, means for disengaging said catch automatically when the folder approaches the said yielding abutment, and gear-and-link mechanisms between the feed-roll and the folding devices to actuate

the said carrier and folder in time movements, substantially as specified.

9. In an autographic register, the combination of a pair of paper-rolls, a pair of contacting feed-rolls, equal gears on the ends of same intermeshing, a writing-table over which the two strips are passed, a pair of contacting rolls at the delivering end of the table having gear connections with said first-named gears adapted to revolve them at a faster rate of speed than the first-named rolls, and an operating-crank, substantially as specified.

10. In an autographic register the combination of an actuating feed-roll, a compartment having a retaining-flange at its open end, a yielding abutment in said compartment bearing normally toward said flange, a reciprocating folder movable to and from said yielding abutment past said flange, a reciprocating carrier movable over said folder during a part of its travel, and gear-and-link connections between said folder and carrier and the feed-roll, adapted to actuate the said folder and carrier in time movements, substantially as specified.

11. In an autographic register, the combination of an actuating feed-roll, a compartment having an open end, a retaining-flange in said end, a yielding abutment in said compartment bearing normally toward said flange, a reciprocating folder adapted to move bodily into and out of said open end of the compartment, past said flange, a reciprocating carrier movable over said folder during a portion of its travel, and gear-and-link mechanism between said feed-roller and the folder and carrier, adapted to actuate said folder and carrier in time movements, substantially as specified.

12. In an autographic register, the combination of a filing-compartment, a yielding abutment in the receiving end thereof, a retaining-flange at said receiving end, a folder-blade pivoted at the bottom of the receiving end of said compartment, spring-hooks on the pivot of the folder engaging against the yielding abutment through orifices in the folder, a carrier pivoted to the frame and adapted to tuck the paper between the abutment and folder into the engagement with the hooks and means for actuating the folder, carrier and hooks in time movements whereby a continuous strip is folded and filed away in successive folds, substantially as specified.

13. In an autographic register, the combination of a compartment, a retaining device in the receiving end, a reciprocating folder pivoted to the frame of the machine, a reciprocating carrier pivoted to the frame of the machine and adapted to move over said folder and means for operating said folder and carrier in time movements to and from said receiving end of the said compartment, substantially as specified.

14. In an autographic register, the combination of a compartment, a retaining device in

the receiving end, a reciprocating folder pivoted to the frame of the machine, a reciprocating carrier pivoted to the frame of the machine, and adapted to move over said folder, 5 an automatic catch at the pivoted end of said folder adapted to engage the carrier in its movements, means for automatically releasing said catch and means for operating said folder and carrier to and from the receiving 10 end of the said compartment in time movements, substantially as specified.

15. In an autographic register, the combination of a pair of feed-rolls geared together, a

pair of paper-delivery rolls, and gear connections between said pairs of rolls adapted to 15 revolve the delivery-rolls at a greater surface speed than the first-named rolls, whereby the slack in the paper is automatically taken up, substantially as specified.

In testimony whereof we have hereunto set 20 our hands.

JOHN G. DINKELBIHLER, JR.

CLYDE C. CRANE.

Witnesses:

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