(No Model.) 6 Sheets—Sheet 1.

O. C. REEVES.

AUTOGRAPHIC REGISTER.

No. 525,514. Patented Sept. 4, 1894.

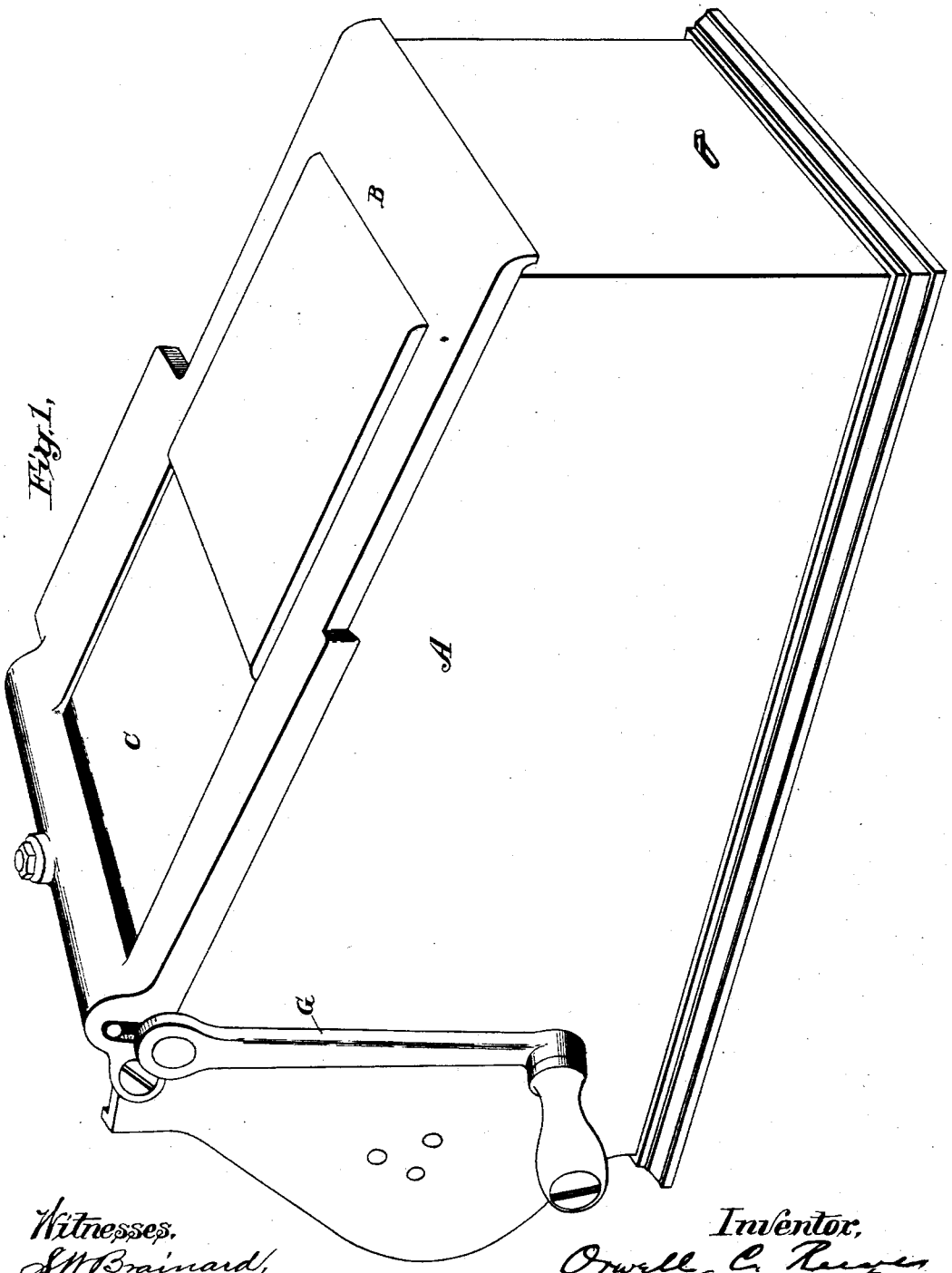


Fig. 1.

Witnesses.
S. W. Brainard,
Albert H. Meads

Inventor.
Orwell C. Reeves
by Edward Rector
his atty.

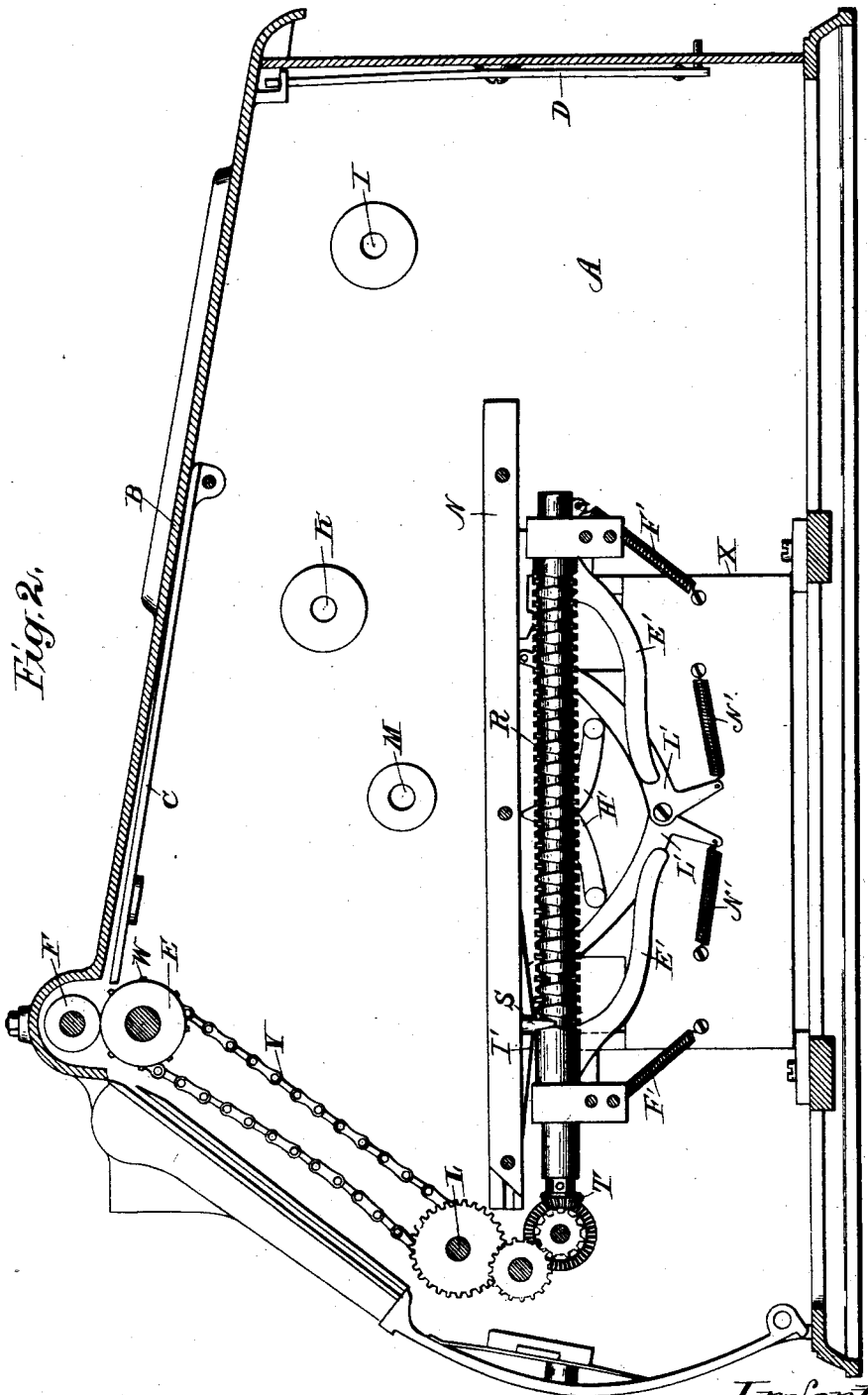
(No Model.) 6 Sheets—Sheet 2.

O. C. REEVES.

AUTOGRAPHIC REGISTER.

No. 525,514. Patented Sept. 4, 1894.

Fig. 2.



Witnesses,
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(No Model.) 6 Sheets—Sheet 3.

O. C. REEVES.

AUTOGRAPHIC REGISTER.

No. 525,514. Patented Sept. 4, 1894.

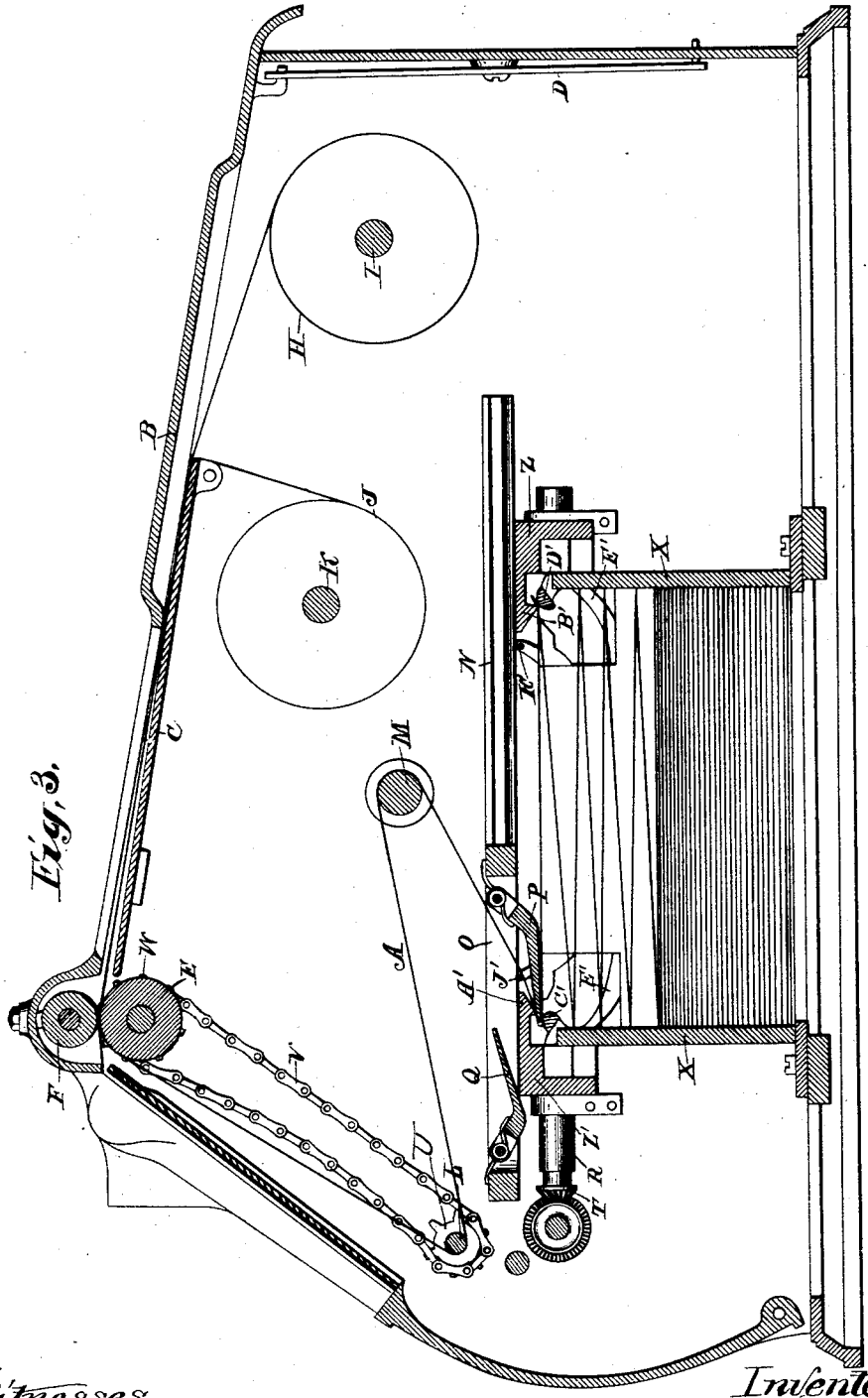

Fig. 3.

Witnesses.
A. M. Brainard.
Albert G. Meade

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(No Model.) 6 Sheets—Sheet 4.

O. C. REEVES.

AUTOGRAPHIC REGISTER.

No. 525,514. Patented Sept. 4, 1894.

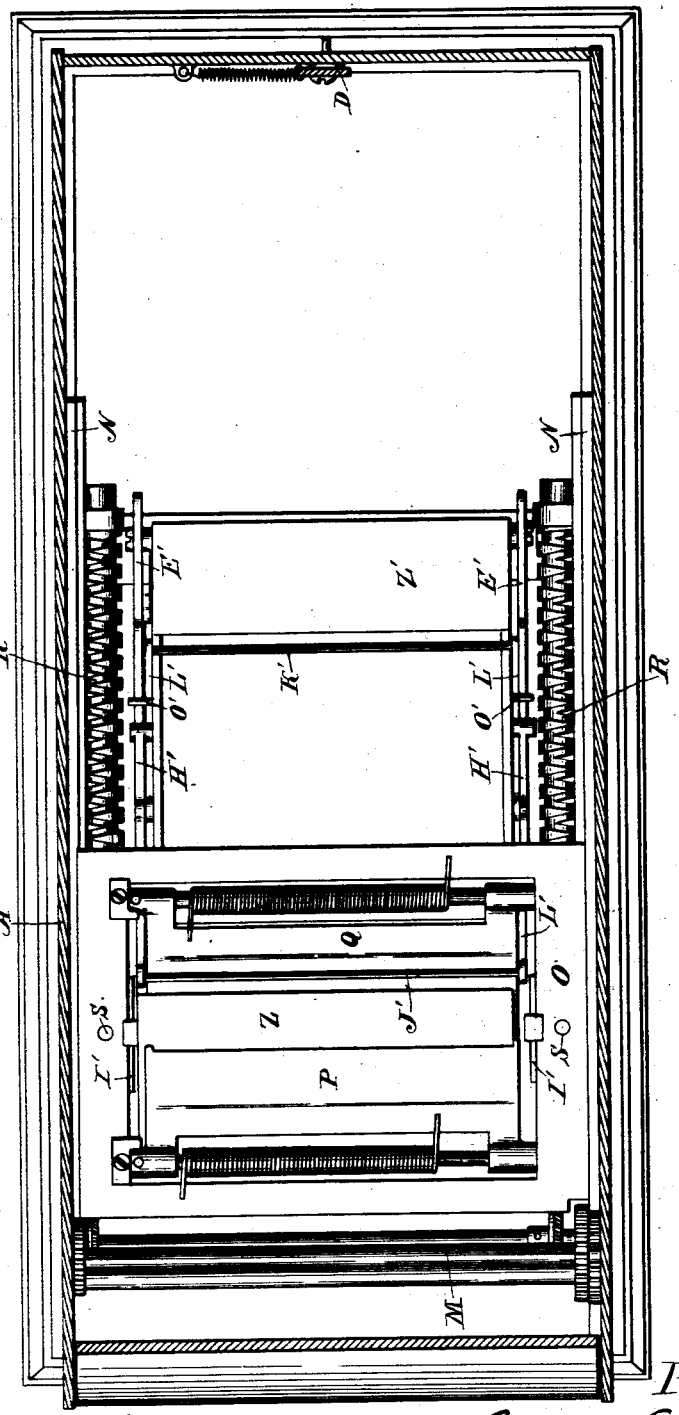

Fig. 4.

Witnesses.
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(No Model.) 6 Sheets—Sheet 5.

O. C. REEVES.

AUTOGRAPHIC REGISTER.

No. 525,514. Patented Sept. 4, 1894.

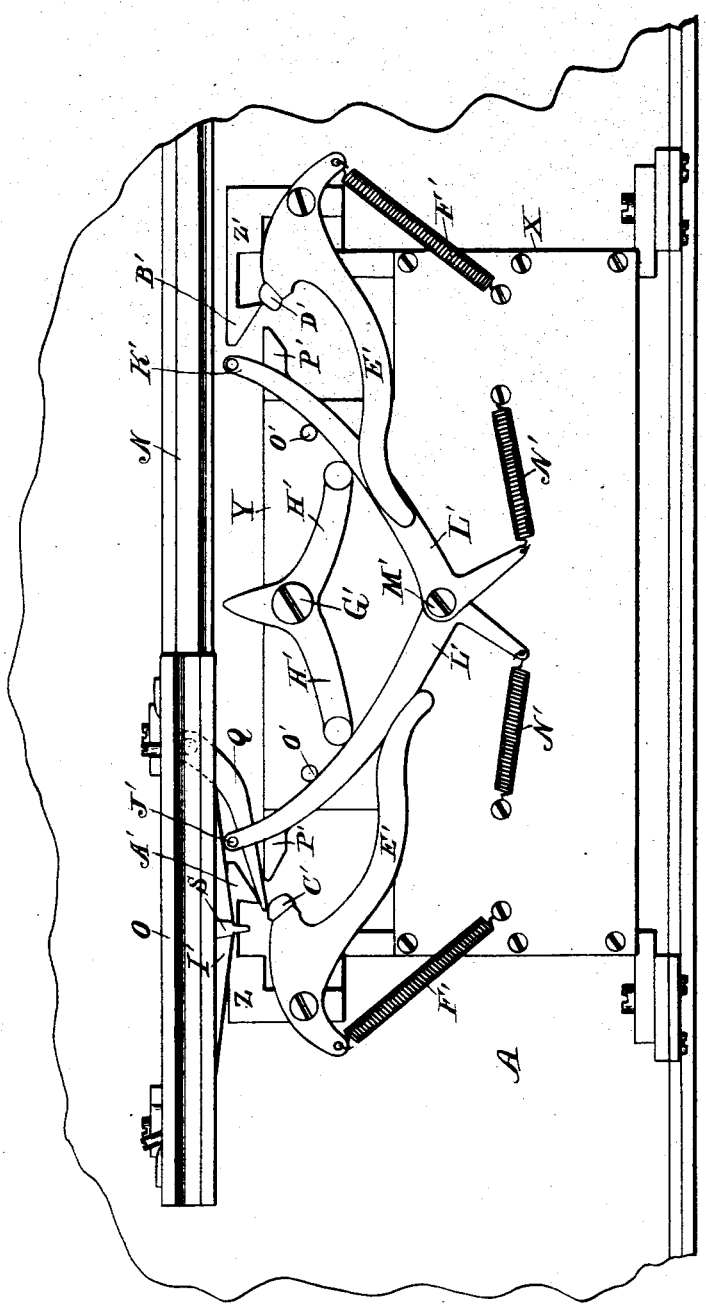

Fig. 5.

Witnesses,
S. W. Brainard.
Albert H. Meads

Inventor.
Orville C. Reeves
by Edward Rector
his attorney.

(No Model.) 6 Sheets—Sheet 6.

O. C. REEVES.

AUTOGRAPHIC REGISTER.

No. 525,514. Patented Sept. 4, 1894.

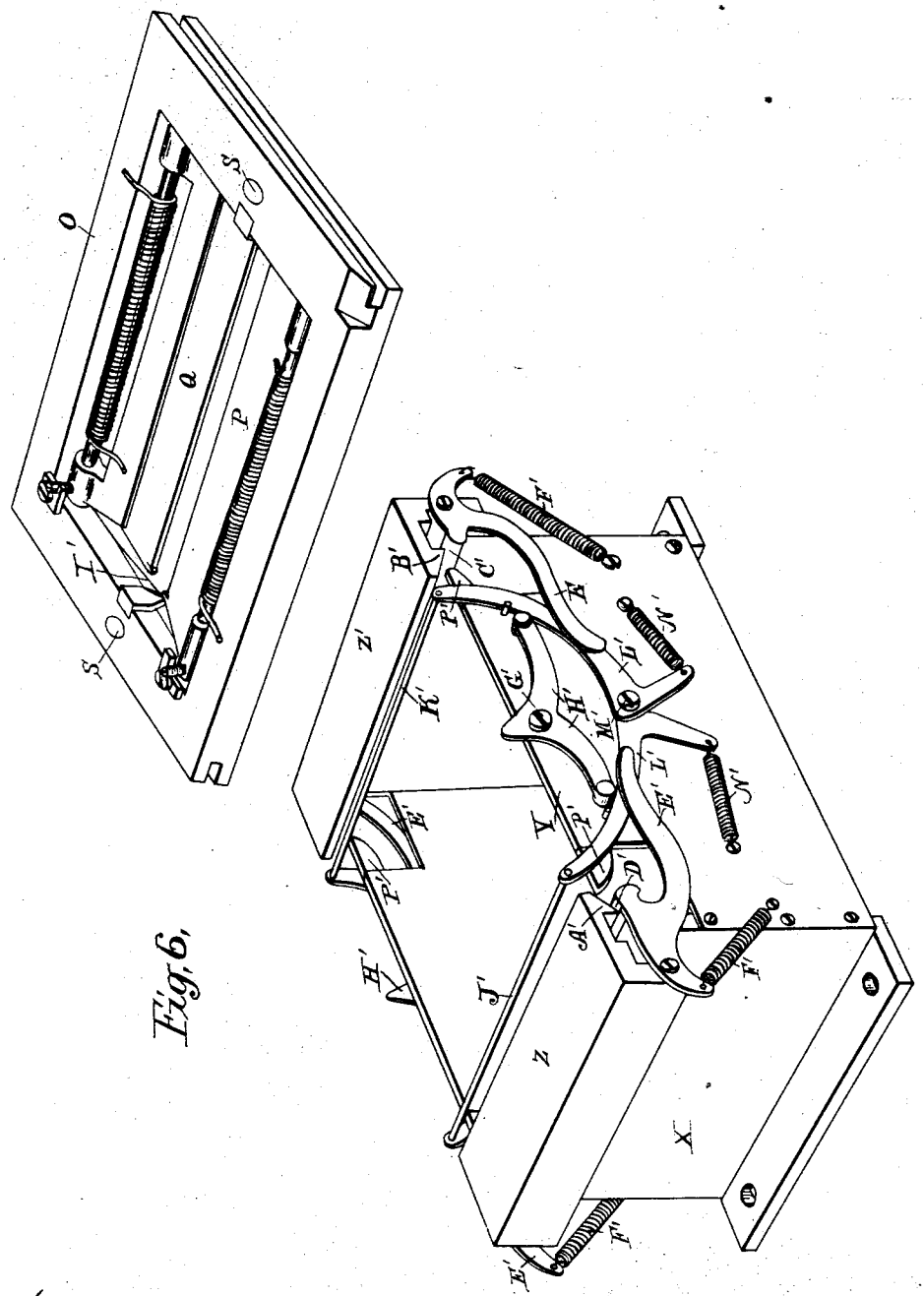

Fig. 6.

Witnesses.
S. H. Brainard.
Albert H. Meads

Inventor.
Orville C. Reeves
by Edward Rector
his atty.

UNITED STATES PATENT OFFICE.

ORWELL C. REEVES, OF DAYTON, OHIO, ASSIGNOR TO THE NATIONAL CASH REGISTER COMPANY, OF SAME PLACE.

AUTOGRAPHIC REGISTER.

SPECIFICATION forming part of Letters Patent No. 525,514, dated September 4, 1894.

Application filed January 19, 1894. Serial No. 497,413. (No model.)

To all whom it may concern:

Be it known that I, ORWELL C. REEVES, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented a certain new and useful Improvement in Autographic Registers, of which the following is a description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to that class of autographic registers in which the record-strip is folded back and forth into bellows form and filed in the storage-compartment, instead of being wound upon a roll, and it consists of a novel mechanism for folding said strip.

In the accompanying drawings Figure 1 is a perspective view of an autographic register of common shape; Fig. 2 a vertical section of the same just within the left hand side of the casing; Fig. 3 a middle vertical section looking toward the right of the machine; Fig. 4 a horizontal section above the folding mechanism; Fig. 5 an enlarged detail side elevation of the folding mechanism; and Fig. 6 a perspective view of the fixed and reciprocating frames of the folding mechanism, and the screw-shafts, the reciprocating frame being shown detached from the fixed frame.

The same letters of reference are used to indicate identical parts in all the figures.

The working parts of the machine are inclosed within the usual casing A having a hinged lid B provided with a rectangular opening above the writing tablet C, and held down at its free end by a latch D pivoted to the front wall of the casing and engaging a hook upon its under side. The writing tablet C consists of a flat metal plate hinged at its forward edge to the side-walls of the casing and resting at its rear end upon lugs upon said walls. At the rear end of said tablet is located the lower one of a pair of feed-rollers E F, the upper roller being journaled in a housing in the lid. The spindle of the roller E projects at its left hand end through the side wall of the casing and has fast upon it a handle G, Fig. 1. As illustrated in the drawings the machine employs two paper strips, the check-strip H being carried in a roll upon a spindle I and led thence over the writing tablet C and between the feed-rollers E F, and thence out of the machine, and the record-strip J being carried in a roll upon a spindle K and led thence over the writing tablet and between the feed-rollers, thence downward and rearward beneath a glass-covered window in the rear end of the casing, thence over a shaft or roller L, and thence forward over a roller M, to the folding mechanism to be now described.

Mounted to reciprocate longitudinally of the machine upon guideways M N upon the inner sides of the casing is a frame O, Fig. 6, having pivoted in it two spring-pressed folding-blades P Q. Mounted in bearings upon the casing below and parallel with the guideways M N are two right-and-left-hand screw shafts R R engaged by yoke-pieces S S swiveled in the frame O to cause the rotation of said shafts to reciprocate the frame. At their rear ends the shafts R have fast upon them beveled pinions T by which and suitable intermediate pinions they are geared to the rotary shaft L before referred to, Figs. 2 and 3. This shaft has fast upon its right hand end a sprocket-wheel U over which passes a sprocket-chain V which extends around a second sprocket-wheel W fast upon the lower feed-roller E. In this manner said roller is geared to the shafts R R so that when the roller is turned by its handle D, to advance the paper strips, the shafts will be rotated and the frame A reciprocated back and forth.

Secured within the casing below the screw-shafts R R and reciprocating frame O is a rectangular box or framework X upon which is mounted the mechanism which co-operates with the blades P Q of the frame O to crease and fold the paper strip. The coiled springs surrounding the pivotal shafts of the folding-blades P Q press said blades downward below the plane of the frame O and cause them to rest upon the upper edges of the side walls Y Y of the box X, Figs. 3 and 5, and in the reciprocating movements of the frame O the blades slide back and forth upon the edges of said walls.

Secured at the upper edges of the opposite end walls of the box X are two angle bars or plates Z Z′ whose horizontal portions project over the open top of the box a short distance. The inner edges of these plates are beveled

off on their under sides, as shown, and recessed behind the beveled surfaces, to form fixed gripping jaws A′ B′, which act in conjunction with movable gripper-bars or jaws C′ D′ extending from side to side of the box immediately beneath and parallel with such fixed jaws. Each gripper-bar is carried by two levers E′ pivoted upon opposite sides of the box, the side walls thereof being cut away at each of their upper corners to accommodate the bar and permit it to move up and down when its supporting levers are rocked. Coiled springs F′ connected to the outer ends of the levers yieldingly press the bars C′ D′ against the fixed jaws A′ B′, while the long inner ends of the levers extend toward the middle of the side walls of the box. Upon depressing the inner ends of these levers the bars C′ D′ will be moved downward away from the jaws A′ B′ and upon releasing them the springs F′ will restore them to normal position. Pivoted at G′ upon the opposite sides of the box are two three-armed levers H′, the outer ends of whose lower divergent arms are adapted to engage the inner ends of the levers E′ which carry the gripper-bars C′ D′ and alternately depress them as the levers H′ are rocked upon their pivots. The vertical arms of the levers H′ project above the upper edges of the side walls of the box in position to be engaged by cams I′ upon the under surfaces of the opposite edges of the reciprocating frame O, Figs. 2, 5 and 6. When the frame O is slid to the right, Fig. 5, the levers H′ will be rocked in that direction by the cams I′ and the gripper-bar D′ depressed, and when it is slid to the left the levers H′ will be rocked in that direction to depress the bar C′.

The operation of this much of the folding mechanism is as follows: The free end of the record-strip J is led from the roller M downward between the adjacent edges of the folding blades P Q, Figs. 2 and 3, through the open frame O and allowed to depend into the box X. Upon then sliding the frame O rearward to its limit of movement the blade P will carry the paper strip between the fixed gripper-jaw B′ and gripper-bar D′, Fig. 3, the bar yielding to permit the entrance of the edge of the blade. When the frame O is moved in the opposite direction and the blade withdrawn the bar D′ will grip the strip between itself and the jaw B′ and hold it. During the rearward movement of the frame O just described the blade Q will have ridden over the end plate Z′ of the box and been lifted out of the way of the blade P, as seen in Fig. 3. Upon now sliding the frame O to the left to its limit of movement the blade Q will be thrown downward by its spring as soon as it clears the plate Z′ and it will then rest and travel upon the upper edges of the side walls of the box, its edge bearing against the paper strip and pressing it down and passing over it. When the blade P contacts with the end plate Z of the box it will be lifted out of the way of the blade Q and the latter will press the strip between the jaw A′ and gripper-bar C′. At the next rearward movement of the frame O the blade P will carry the strip to the rear gripping point, the blade Q being thrown upward out of the way, as before explained; and so on, back and forth, folding the strip into reverse folds, as seen in Fig. 3.

For the purpose of disengaging the folded strip from the gripping surfaces there are provided the two rods J′ K′ extending across the box immediately adjacent and parallel with the respective gripping devices, and each carried by the upper ends of two bent levers L′, the two levers at each side of the box being pivoted at a common point, M′, Figs. 5 and 6. Coiled springs N′ connected to the lower ends of the levers tend to throw the rods J′ K′ upward and yieldingly hold them in normal position with the upper arms of the levers resting against stops O′ upon the sides of the box. The outer ends of the divergent lower arms of the three-armed levers H′ are wide enough to overlie both the levers E′ carrying the gripper-bars and the levers L′ carrying the releasing rods J′ K′, so that the rocking of said levers H′ will serve to simultaneously depress the gripper-bar and rod at one end or the other of the box according to the direction in which the levers H′ are moved, and thus the gripping jaws will be opened to release the strip and the rod will press it downward and disengage it from them to make room for the next fold of the strip. The levers H′ are rocked by the cams I′ upon the under side of the frame O, as before explained. When the frame is slid toward one end of the box the cams I′, as the frame passes middle position, will rock the levers H′ and depress the gripper jaw and rod at that end of the box, thereby releasing the fold of the strip and pressing it downward, and as the cams clear the levers H′ the rod and bar will be returned to normal position by their springs, ready to receive the next fold of the strip as the frame reaches the end of its stroke, the folding blade passing beneath the rod and forcing the strip between the gripping jaws in the manner described.

The levers L′ carry near their upper ends small plates P′, which, when the levers are in normal position, form continuations of the upper edges of the side walls, the folding blades resting and traveling upon them as they press the strip into the gripping jaws, Fig. 5.

The general mode of using the machine is the same as that of other prior machines. The salesman enters the items of the sale upon the check-strip as it rests upon the writing tablet, the items being duplicated upon the record-strip beneath by the usual interposed carbon sheet. He then turns the handle G, causing the feed-rollers to draw between them the portions of the two strips which had been resting upon the tablet, the

check-strip passing from the rollers through an opening in the casing of the machine, against the upper edge of which it may be torn off, to form detached checks, and the record-strip passing downward and rearward behind the inclined glass-covered window in the rear side of the machine, and thence around the shaft L and roller M to the folding mechanism. The strip is folded in lengths corresponding to the length of a check and piled in the box X, which constitutes the storage-compartment of the machine. It may be removed therefrom as often as desired and the record of any particular transaction can be readily examined by turning the folds as the leaves of a book until the record is found.

I am aware that it is not broadly new to store the record-strip in this manner in this class of machines. I am also aware that the record-strip has in some instances been carried in a supply roll and led over the writing tablet and creased and folded and stored by the mechanism of the machine, so that the results accomplished by my invention are not wholly new; but I believe the mechanical combinations and modes of operation employed in my machine are broadly new, and my invention is therefore not restricted beyond the terms of my respective claims.

Having thus fully described my invention, I claim—

1. In an autographic register having a writing tablet over which the paper strips are led, the combination of a pair of feed rollers for drawing the strips over said tablet, two pairs of gripping jaws, a reciprocating frame actuated by one of the feed rollers, and a pair of folding-blades pivoted in said frame and co-operating with the respective jaws to carry the record strip from one to the other and force it between them, substantially as described.

2. In an autographic register, the combination of two pairs of gripping jaws, a reciprocating frame, a pair of blades carried by said frame and co-operating with the respective pairs of jaws, a pair of feed-rollers, and a right-and-left-hand screw geared to one of said rollers and co-operating with the frame to reciprocate the latter, substantially as and for the purpose described.

3. In an autographic register, the combination of two pairs of gripping jaws, a reciprocating frame, a pair of blades carried by said frame and co-operating with the respective pairs of jaws, the feed-rollers, the operating handle fast upon the spindle of one of said rollers, and a pair of right-and-left-hand screws geared to one of the feed-rollers and co-operating with the frame to reciprocate the latter, substantially as and for the purpose described.

4. In an autographic register having a writing tablet over which the paper strips are led, the combination of a pair of feed rollers for drawing the strips over said tablet, two pairs of gripping jaws, a reciprocating frame actuated by one of the feed rollers, a pair of folding-blades carried thereby and co-operating with the respective pairs of jaws, and means actuated by said frame for separating the jaws of each pair as the frame moves toward it, to release the previous fold of the strip, substantially as described.

5. In an autographic register, the combination of two pairs of gripping jaws, a pair of reciprocating folding-blades co-operating therewith, and means for withdrawing the previous fold of the strip from each pair of jaws as its co-operating blade moves toward it, substantially as described.

6. In an autographic register, the combination of two pairs of gripping jaws, a reciprocating frame carrying a pair of folding-blades, one co-operating with each pair of jaws, and means actuated by said frame for withdrawing the previous fold of the strip from each pair of jaws as the frame moves toward it, substantially as described.

7. In an autographic register, the combination of two pairs of gripping jaws, a reciprocating frame carrying a pair of folding-blades, one co-operating with each pair of jaws, a pair of releasing rods, one adjacent each pair of jaws and each carried by a pair of pivoted arms or levers and yieldingly held in normal position, said rods being actuated by the reciprocating frame to withdraw the previous fold of the strip from each pair of jaws as the frame moves toward it, substantially as described.

8. In an autographic register, the combination of two pairs of gripping jaws, a pair of reciprocating folding-blades co-operating therewith, means for separating the jaws of each pair as its co-operating blade moves toward it, to release the previous fold of the strip, and means for withdrawing such fold from the jaws when so released, substantially as described.

9. In an autographic register, the combination of two pairs of gripping jaws, a reciprocating frame carrying a pair of folding-blades co-operating with the respective pairs of jaws, means actuated by said frame to separate the jaws of each pair as the frame moves toward it, to release the previous fold of the strip, and means also actuated by said frame to withdraw such fold from the jaws when so released, substantially as described.

10. In an autographic register, the combination of the fixed jaws A′ B′, the movable jaws or gripper-bars C′ D′ carried by the pairs of levers E′ and spring-pressed against the fixed jaws A′ B′, the levers H′ co-operating with the levers E′, the reciprocating frame O, the folding blades P Q pivoted therein, and the cams I′ upon the frame co-operating with the lever H′, substantially as and for the purpose described.

11. In an autographic register, the combination of the fixed jaws A′ B′, the movable jaws or gripper-bars C′ D′ carried by the pairs of levers E′ and spring-pressed against the fixed

jaws A′ B′, the releasing rods K′ carried by the levers L′, the levers H′ co-operating with the levers E′ and L′, the reciprocating frame O having the cams I′ co-operating with the levers H′, and the folding-blades P Q, pivoted in the frame O, substantially as and for the purpose described.

12. In an autographic register, the combination of the fixed bars or plates Z Z′ beveled and recessed to form the jaws A′ B′, the movable jaws spring-pressed against the jaws A′ B′, the reciprocating frame O, and the folding blades P Q pivoted therein, said blades co-operating with the respective pairs of jaws and riding over the tops of the respective plates Z Z′ in the manner described.

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