(No Model.)

3 Sheets—Sheet 1.

T. F. SCHIRMER.

AUTOGRAPHIC REGISTER.

No. 588,359. Patented Aug. 17, 1897.

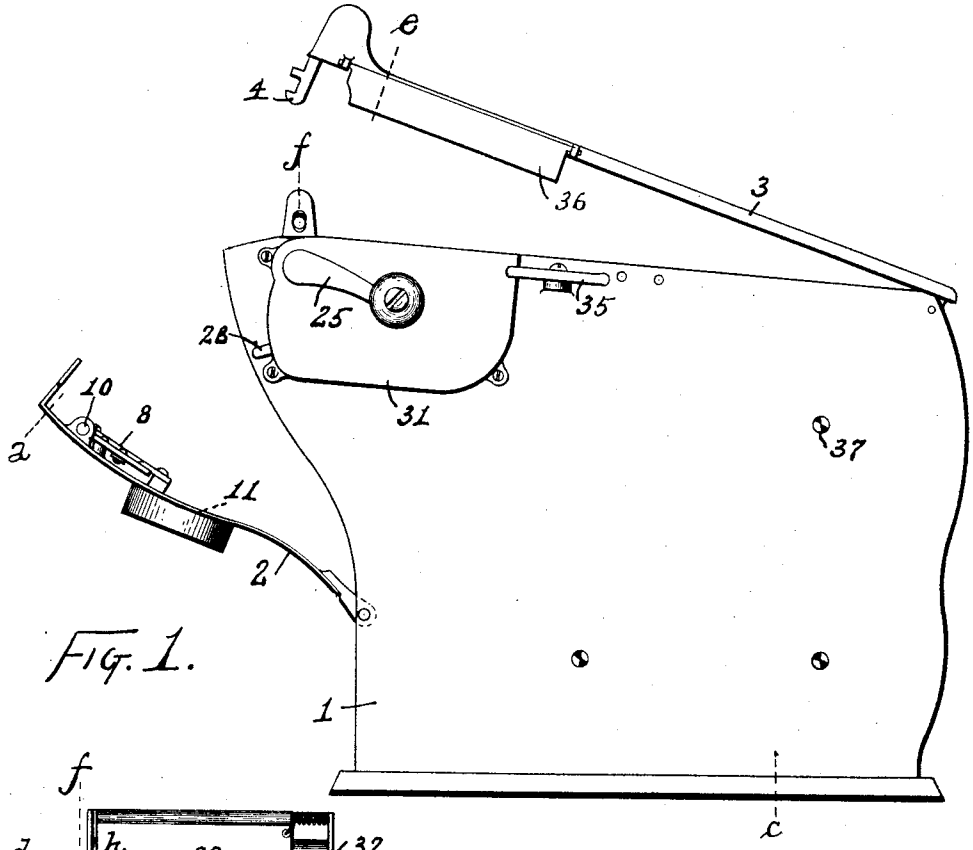


FIG. 1.

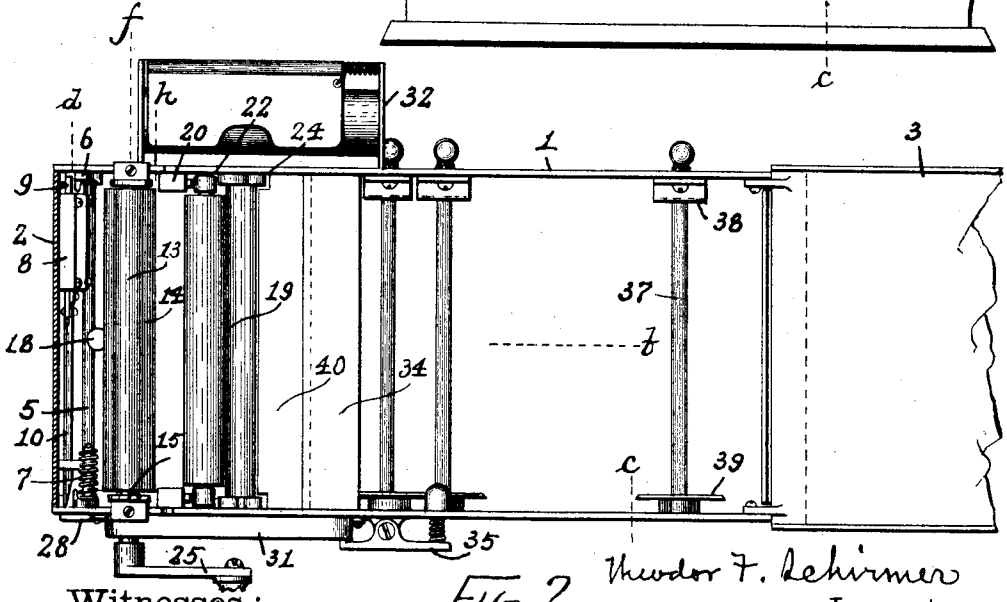


FIG. 2.

Witnesses:
E. R. Shipley.
M. S. Belden.

Theodor F. Schirmer
Inventor
by James W. See
Attorney

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.) 3 Sheets—Sheet 2.

T. F. SCHIRMER.

AUTOGRAPHIC REGISTER.

No. 588,359. Patented Aug. 17, 1897.

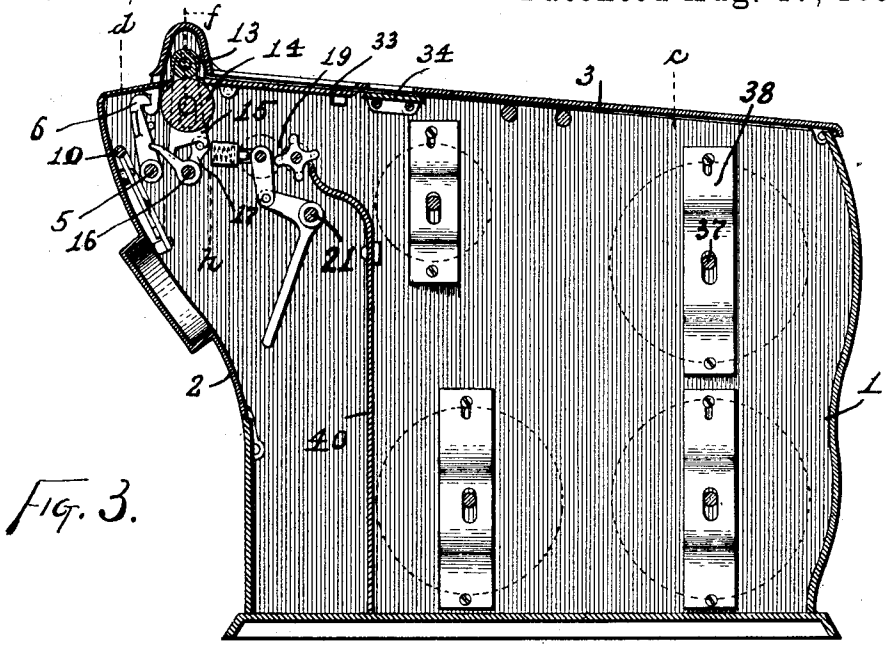


FIG. 3.

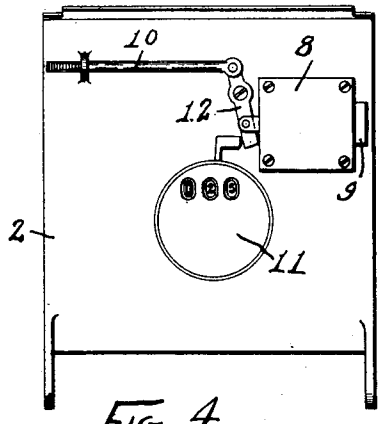


FIG. 4.

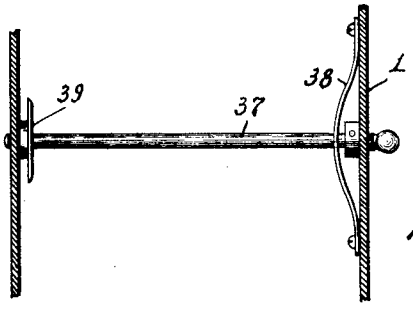


FIG. 6.

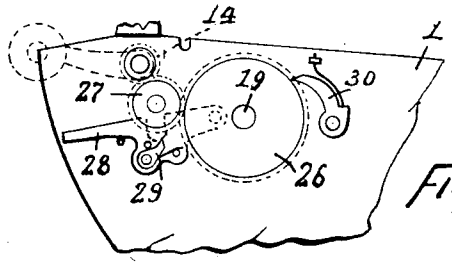


FIG. 5.

Witnesses:
E. R. Shipley.
M. S. Belden

Theodor F. Schirmer
Inventor
by James W. See
Attorney

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.) 3 Sheets—Sheet 3.

T. F. SCHIRMER.

AUTOGRAPHIC REGISTER.

No. 588,359. Patented Aug. 17, 1897.

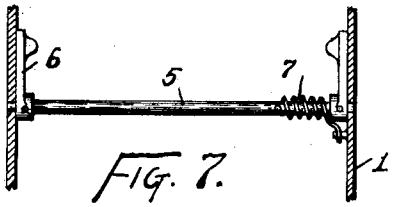


FIG. 7.

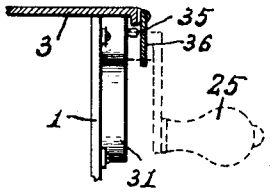


FIG. 8.

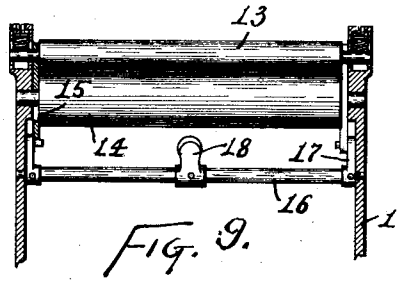


FIG. 9.

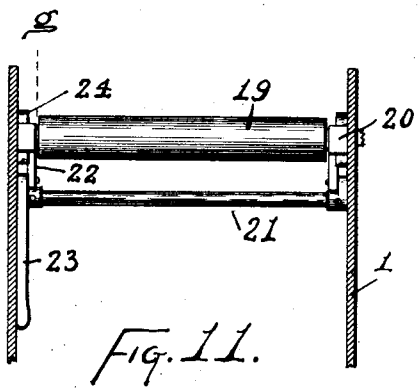


FIG. 11.

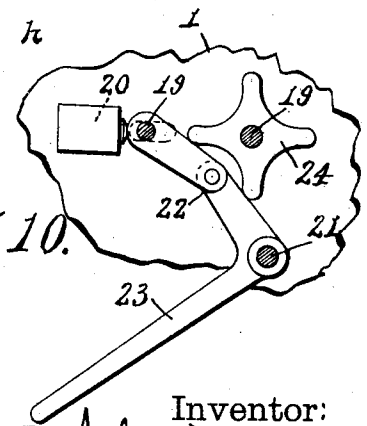


FIG. 10.

Witnesses:
E. R. Shipley,
M. S. Belden

Inventor:
Theodor F. Schirmer
by James W. See Attorney

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

THEODOR F. SCHIRMER, OF DAYTON, OHIO.

AUTOGRAPHIC REGISTER.

SPECIFICATION forming part of Letters Patent No. 588,359, dated August 17, 1897.

Application filed March 31, 1897. Serial No. 630,031. (No model.)

To all whom it may concern:

Be it known that I, THEODOR F. SCHIRMER, of Dayton, Montgomery county, Ohio, have invented certain new and useful Improvements in Autographic Registers, of which the following is a specification.

This invention pertains to that class of autographic registers in which several rolls of supply-paper are mounted in a casing and pass over tablets where the papers are provided with interposed transfer-paper, the papers going through feed-rolls by means of which some of them are projected out of the machine to be torn off as written bills, while one of the papers, having less feed than the others and containing the summary entry, is fed into a storage-compartment within the casing.

My invention has special reference to improvements in the mechanical details of registers of this class; and the improvements will be readily understood from the following description, taken in connection with the accompanying drawings, in which—

Figure 1 is a side elevation of an autographic register embodying my improvements, the end door and the lid being shown as partly open; Fig. 2, a plan of the same with the lid open, the main tablet removed, and the end door shown in horizontal section in the plane of line *a* of Fig. 1; Fig. 3, a vertical longitudinal section in the plane of line *b* of Fig. 2; Fig. 4, an inside face view of the door with its locking-bolts shown in locked position; Fig. 5, a side elevation of a portion of the casing, showing the gearing connecting the two pairs of feed-rolls, the guard or cover of this gearing being removed; Fig. 6, a vertical transverse section of a portion of the casing in the plane of line *c* of Figs. 1, 2, and 3; Fig. 7, a similar section in the plane of line *d* of Figs. 2 and 3; Fig. 8, an end elevation of a portion of the casing, showing the guard or cover for the gearing and showing the lid in vertical transverse section in the plane of line *e* of Fig. 1; Fig. 9, a vertical transverse section of a portion of the casing in the plane of line *f* of Figs. 1, 2, and 3; Fig. 10, a view of a portion of the interior surface of one of the side walls of the casing, certain accessory parts appearing in vertical section in the plane of line *g* of Fig. 11; and Fig. 11 a vertical transverse section of a portion of the casing in the plane of line *h* of Figs. 2, 3, and 10.

In the drawings, referring for the present only to Figs. 1, 2, 3, and 7, 1 indicates the usual casing of the autographic register; 2, the usual end door thereof; 3, the usual hinged lid of the casing; 4, beveled latch-hooks projecting downwardly from the front free end of lid 3 and adapted, as the lid is closed, to take position within the casing near or against the side walls thereof; 5, a shaft journaled in the casing below the position occupied by hooks 4 when lid 3 is closed; 6, a pair of arms projecting upwardly from shaft 5 in the vertical planes of hooks 4 and having at their upper ends beveled hooks adapted to engage over hooks 4, arms 6, having finger-pieces projecting inwardly from them, as seen in Fig. 7, so that the shaft may be rocked to move hooks 6 forwardly out of engagement with hooks 4, and 7 a spring upon shaft 5, tending to hold hook 6 in rearward position in engagement with hooks 4.

When door 2 is open, so as to give access to the finger-pieces on arms 6, the arms may be rocked forward by manipulating either finger-piece, thus unlatching lid 3 and permitting it to be opened, and when lid 3 is to be closed its hooks 4 engage the hooks of arms 6 and rock the arms forward against the resistance of spring 7, the spring thus latching the lid after it has been closed. The lid may be closed regardless of whether end door 2 is open or closed, but the lid can only be opened when the end door is open to give access to the finger-pieces. In starting the machine into operation the end door may thus be closed and locked and the papers manipulated preliminarily, after which the lid may be closed and latched without the necessity for opening the end door, such latching of the lid then, of course, coming under the domination of the lock upon the end door.

Proceeding with the drawings, and referring particularly to Fig. 4, with incidental reference to Figs. 1, 2, and 3, 8 indicates the usual key-lock, attached to the end door 2; 9, the bolt of this lock, which bolt, when thrown, engages behind a latch on the side wall of the casing, as seen in Fig. 2, this bolt having a tail projecting from the opposite end of the

lock-case; 10, a second shooting-bolt mounted in a guide on the end door and shooting outwardly from that edge of the door opposite bolt 9, this second bolt 10 engaging behind a ledge on the appropriate side wall of the casing, as seen in Fig. 2, bolt 10 being connected with the tail projection of bolt 9, so that both bolts move outwardly and inwardly in unison, Fig. 4 showing the two bolts in outward or locking position; 11, a counting-register secured to the end door and connected with the boltwork of the lock, so that the counting-register will indicate the number of times the bolts have been thrown, and 12 a lever pivoted to the end door and having one end connected with the tail projection of bolt 9 and having its other end connected with bolt 10, so that bolts 9 and 10 move in unison, but in opposite directions, a portion of this lever engaging the actuating-piece of counting-register 11.

When door 2 is closed and bolt 9 thrown by the action of the key of the lock, then bolt 10 is simultaneously thrown at the opposite edge of the door, the door thus being securely locked at each of its edges and preventing the prying open of the door at one edge, so as to permit the temporary withdrawal of the record-paper. Each time the end door is unlocked the counting-register will be actuated. A record may be kept of the reading of the counting-register, and from this it may be determined if the end door has been opened without authority, it being apparent that the end door is liable to be illegitimately opened, either by the use of a false key or by the unauthorized use of the proper key.

Continuing with the drawings, giving special consideration to Figs. 3 and 9, with incidental reference to Figs. 1 and 2, 13 indicates the usual upper roll of the main feed-rolls, the journals of this roll being mounted as usual in vertically-slotted bearings, so as to be capable of rising and falling, springs pressing the roll downwardly to its pinching work; 14, the lower one of the main feed-rolls, journaled in the casing and coöperating with roll 13; 15, a plate, one at each end of the pair of main feed-rolls, the upper portion of this plate encircling the journal of the upper feed-roll 13, the lower end of the plate coming below the lower feed-roll, and the intermediate portion of the plate being slotted to engage the journal of the lower feed-roll, so that that journal forms a guide for the vertical movement of the plate; 16, a rock-shaft journaled in the casing below roll 14; 17, arms fast on each end of this rock-shaft and having pins engaging under the lower ends of plates 15, the lower ends of the plates being cam-shaped, so that the forward movement of the pins in arms 17 tend to elevate the plates; and 18, a finger-piece on shaft 16.

Normally arms 17 occupy their rearward position and are inert, the upper feed-roll being pressed to its fellow roll by the usual action of its springs. If, now, while the end door is open, finger-piece 18 be manipulated, arms 17 will be moved forward and their pins, acting on the lower ends of plates 15, will elevate those plates and thus raise the upper feed-roll 13 free of its fellow roll and permit of the papers being freely adjusted between the rolls. The pins of arms 17, in moving forward, pass beyond the vertical plane of shaft 16, and thus tend to remain in forward position until restored by again manipulating finger-piece 18, which latter manipulation restores arms 17 to rearward position and permits the reclosure of the main feed-rolls.

Continuing with the drawings, and giving consideration particularly to Fig. 3, with incidental reference to Figs. 2, 10, and 11, 19 indicates the usual pair of summary rolls for feeding forward the lowermost strip of paper, the forward one of these rolls having its journals in slots in the casing, so as to be capable of moving to and from its fellow roll; 20, the usual springs urging the forward one of the summary rolls toward its fellow roll to produce the necessary feeding-grip of the summary rolls upon the summary paper; 21, a rock-shaft journaled in the casing below the summary rolls; 22, a pair of toggle-links, one pair being at each end of rock-shaft 21, one link of the pair being fast on shaft 21 and articulated to the other link of the pair, which in turn has its forward extremity encircling the journal of the forward or movable one of the summary rolls; 23, a finger-piece projecting from rock-shaft 21 in position to be manipulated when the end door of the casing is open; and 24, a star-wheel fast on each end of the rear one of the summary rolls, these wheels lying in the planes of the toggles 22, and the teeth of the star-wheels being adapted to engage the middle joint of the toggles when the toggles are rearwardly flexed.

Referring to Fig. 3, in which the summary rolls 19 appear in dotted lines, normally the toggles are flexed forwardly and are inert, the springs pressing the forward summary roll rearwardly into pinching engagement with the rear roll. If now the finger-piece be manipulated so as to rock the shaft 21, the toggle will be straightened up and somewhat flexed rearwardly, as seen in Fig. 10, thus moving the front summary roll forward against the resistance of its springs and opening the summary rolls to permit of the free manipulation of the paper between them. By rocking the toggle forward the summary rolls become again restored to pinching relationship. If, however, the casing be closed up before such restoring manipulation shall have been made, then the turning of the summary rolls will have the early effect of throwing the toggles to normal idle position by the action of the teeth of the star-wheels on the toggles.

Continuing with the drawings, and giving special attention to Fig. 5, with incidental reference to Figs. 1 and 2, 25 indicates the usual exterior hand-crank for giving motion to the feed-rolls, this crank in the present case be-

ing fast on the lower one 14 of the main feed-rolls; 26, a gear disposed outside the casing and fast on the rearmost one of the summary feed-rolls 19; 27, an intermediate gear in the plane of gear 26 and meshing with gear 26 and with a gear on the main feed-roll, along with crank 25, so that as the crank is turned both pairs of feed-rolls will be operated; 28, a finger-lever pivoted to the casing behind the gears just referred to; 29, a pawl carried by this lever and adapted, when the lever is lifted, to engage the teeth of gear 27 and prevent that gear being turned forward; 30, a spring stop-pawl engaging the teeth of gear 26 and preventing that gear from turning backward; and 31, a guard-cover secured against the side wall of the casing and covering the gearing, &c., just referred to, the finger-piece of lever 28 projecting outwardly from that guard-cover.

The turning of crank 25 in the proper direction gives to both sets of feed-rolls their forward feeding motion and at proper relative speeds, as usual, stop-pawl 30 preventing the backward turning of the crank. Normally the lever 28 is down in inactive position. By lifting lever 28 the pawl 29 engages a tooth of the gearing and prevents any forward rotation of the crank or feed-rolls until the lever is again depressed to inactive position. Lever 28 should be mounted in such manner as by being sufficiently tight upon its pivot as to prevent the lever falling to disengaged position by its own weight. It will thus be observed that by merely raising lever 28 the mechanism may be so locked as to be incapable of having the feed-rolls turned, the object of this locking being merely to prevent ignorant meddling. When the machine is to be used, a mere movement of the finger may depress lever 28 and put the mechanism in condition for proper use.

Continuing with the drawings, Figs. 1, 2, 3, and 8, 32 indicates the usual trough supported at one side of the casing for the support of the supply-rolls of transfer-paper; 33, the usual tablet over which all the papers are supported under the opening in the main lid through which the general writing is to be done upon the papers; 34, the usual summary tablet to the rear of the main tablet and under the narrow opening in lid 3, through which the summary entry is to be made upon the papers; 35, a pivoted spring-finger mounted on the casing near its upper edge and on that side of the casing opposite trough 32, the forward or gripping end of this finger being substantially in the vertical plane of the rear end of trough 32, and 36 a curtain hinged to the edge of lid 3 on the side opposite trough 32 and falling downward over guard-cover 31 and the forward end of spring-finger 35.

The various record-papers are led over the tablets and through the feed-rolls as usual, the transfer-papers crossing the record-papers as usual. The free ends of the transfer-papers, after crossing the casing, are brought downward in front of guard-cover 31 and gripped by spring-finger 35. Lid 3 is now to be closed, curtain 36 falling over and covering the free ends of the transfer-papers. Curtain 36 may at any time be raised and finger 35 released and the transfer-papers drawn forward for the purpose of freshness, the spring-finger 35 taking a new grip upon the transfer-papers, the surplus of those papers being torn off, so as to leave their fresh free ends covered by curtain 36.

Continuing with the drawings, and giving consideration particularly to Figs. 2, 3, and 6, 37 indicates spindles removably inserted across the rear portion of the casing in proper supporting-openings in the walls of the casing, these spindles being intended, as usual, to support the supply-rolls of paper, four of which are provided for in the exemplification; 38, curved spring-blades perforated at their centers for the spindles 37, one end of these blades being secured to the inner surface of a wall of the casing, while the opposite ends of the blades are so secured to the wall as to be capable of a slight endwise motion thereon; 39, friction-disks secured near the inner surface of that wall of the casing opposite the wall which bears springs 38, there being one of these disks 39 concentric with each of the spindles 37; and 40 the usual vertical partition within the casing and dividing the casing into two compartments, the rear one for the supply-rolls and the forward one for the stored summary paper.

Referring to Fig. 6 and assuming spindle 37 to be removed the roll of paper may be passed downward to position, spring 38 yielding outwardly to admit the roll and finally pressing the end of the roll toward disk 39, spindle 37 being then replaced, whereupon the roll of paper is supported upon the spindle and gripped endwise by the action of spring 38, whereby a proper tension is produced upon the roll.

In the operation of the machine the main rolls carry the main papers forward, so that their projecting ends can be torn off, as usual, while the summary paper passes down between the summary feed-rolls into the compartment forward of partition 40.

I claim as my invention—

1. In an autographic register, the combination, substantially as set forth, of a casing, a lid thereto, an end door to the casing, a lock secured upon the end door and having a single bolt adapted to shoot sidewise into engagement with the casing-wall at one edge of the door, and having a tail projecting out of the lock-case from said bolt, a second independent bolt mounted on the door and adapted to shoot into engagement with the casing-wall at the opposite edge of the door, and a connection between said lock-bolt and independent bolt whereby they move outwardly and inwardly in unison.

2. In an autographic register, the combination, substantially as set forth, of a casing, a

lid hinged thereto and having latch-hooks at its free end within the casing, an end door to the casing in position to cover said latch-hooks, and a spring-latching device located entirely within the casing and adapted to be at all times automatically engaged by the latch-hooks of the lid when the lid is being closed, regardless of whether said end door be locked or unlocked.

3. In an autographic register, the combination, substantially as set forth, of a casing, an end door hinged thereto, a lid hinged to the casing and having latch-hooks at its free end, a rock-shaft journaled in said casing independent of said lid and door below said latch-hooks and having a finger-piece covered by said lid and door, hooked arms fast on said rock-shaft and adapted to engage said latch-hooks, and a spring acting on said rock-shaft and urging said arms to engaging position.

4. In an autographic register, the combination, substantially as set forth, of a casing, a holder for the supply of transfer-paper mounted at one side of the top of the casing, and a pivoted spring-finger mounted on a pivot upon the opposite side of the casing to one side of the path of the transfer-paper and projecting its finger portion into said path.

5. In an autographic register, the combination, substantially as set forth, of a casing, a holder for the supply of transfer-paper mounted upon one side of the top of the casing, a pivoted spring-finger mounted upon the opposite edge of the top of the casing on a pivot to one side of the path of the transfer-paper and projecting its finger portion into said path, a lid hinged to the casing, and a curtain pivoted to the lid and depending therefrom over the gripping end of said spring-finger.

6. In an autographic register, the combination, substantially as set forth, of a casing, a lower main feed-roll mounted in rigid bearings therein, an upper main feed-roll mounted therein and provided with springs to press it downwardly, plates engaging the journals of the upper feed-roll and having slotted engagement with the journal of the lower feed-roll, a rock-shaft mounted in the casing below said feed-rolls and provided with a finger-piece, and arms on said rock-shaft engaging the lower ends of said plates and serving, as the rock-shaft is rocked, to elevate said plates.

7. In an autographic register, the combination substantially as set forth, of a pair of feed-rolls having one of its rolls spring-pressed, star-wheels on the other one of said rolls, a rock-shaft parallel with said rolls and provided with a finger-piece, and toggles connecting said rock-shaft with said spring-pressed roll and serving to move said spring-pressed roll away from its fellow roll, said toggles being in position to be engaged by the teeth of said star-wheels when the toggle is in active position.

8. In an autographic register, the combination, substantially as set forth, of a casing, paper-holding and paper-moving mechanism inclosed thereby, a hinged door, a lock thereto, a counting-register, inclosed by said casing and door and connections between said lock and counting-register whereby the counting-register is operated by the key of said lock from the exterior of the casing.

9. In an autographic register, the combination, substantially as set forth, of a casing, feed-rolls mounted therein, a crank for turning said feed-rolls, a toothed gear connected with said feed-rolls, a stop-pawl to prevent the backward turning of said feed-rolls, and a finger-lever carrying a pawl adapted to engage said toothed gear and preventing the forward turning of said feed-rolls.

10. In an autographic register, the combination, substantially as set forth, of a casing, a spindle supported removably in openings in the walls thereof, a non-rotary disk-surface at the inner wall of said casing around said spindle, and engaged directly by a roll of paper on the spindle and a spring-blade having both its ends engaging the opposite wall of said casing and having a central perforation around said spindle.

THEODOR F. SCHIRMER.

Witnesses:
CARL L. BAUMANN,
GEORGE U. BRUNETTE.