A. F. STAPLES.

ACCOUNT REGISTER.

APPLICATION FILED APR. 28, 1911.

1,007,613.

Patented Oct. 31, 1911.

2 SHEETS—SHEET 1.

Fig. 1.

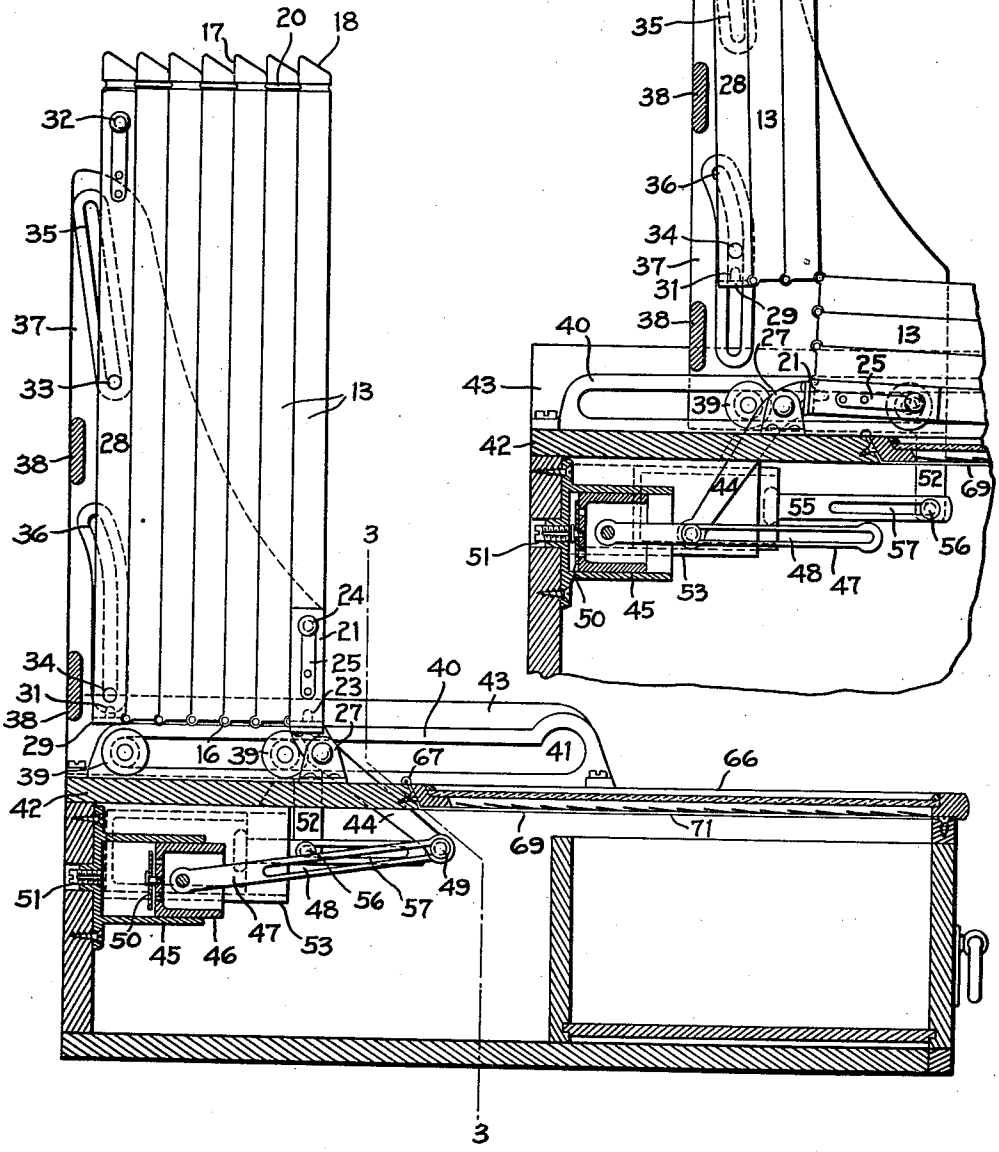

Fig. 2.

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Inventor:

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by his attorneys

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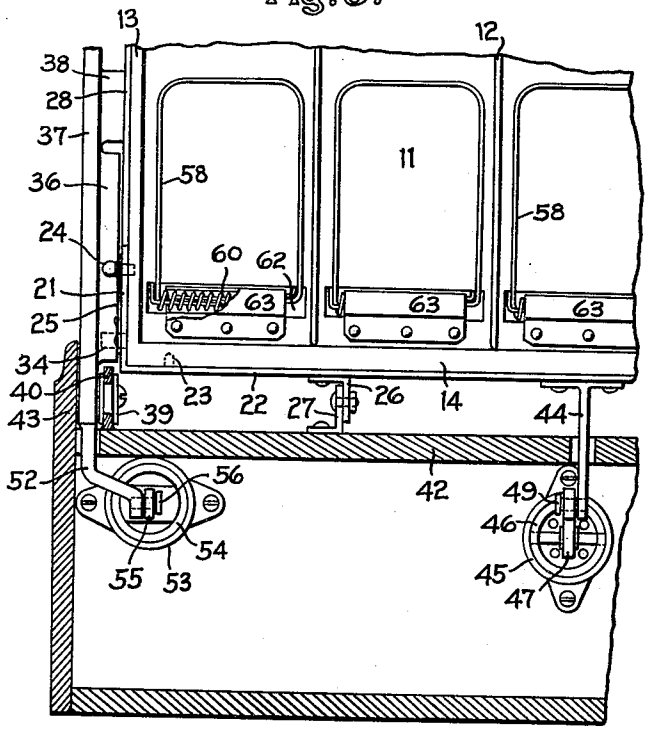
2 SHEETS—SHEET 2.

Fig. 3.



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UNITED STATES PATENT OFFICE.

ALBERT F. STAPLES, OF CANISTEO, NEW YORK, ASSIGNOR TO SUPERIOR REGISTER COMPANY, OF CANISTEO, NEW YORK, A CORPORATION OF NEW YORK.

ACCOUNT-REGISTER.

1,007,613. Specification of Letters Patent. Patented Oct. 31, 1911.

Application filed April 28, 1911. Serial No. 623,988.

To all whom it may concern:

Be it known that I, ALBERT F. STAPLES, a citizen of the United States, and resident of Canisteo, in the county of Steuben and State of New York, have invented certain new and useful Improvements in Account-Registers, of which the following is a specification.

This invention relates to account-registers of the type in which bill-holders are mounted on a series of frames, these frames being pivotally mounted so as to be turned like the leaves of a book.

One object of the invention is to produce a device of the kind in question in which simple and effective means are provided for holding the rearmost bill-holder frames upright and moving them forward as the foremost frames are swung forwardly and downwardly about their pivots, and to this end I employ mechanism actuated by the movement of the foremost frame or frames and preferably comprising a forwardly-movable carrier by which the rearmost frame is maintained in upright position.

Another object of the invention is to provide simple and effective means for resisting the pivotal movement of the bill-holder frames so as to prevent slamming when they are carelessly handled, and to this end I employ mechanism which will be more particularly described hereinafter.

Other objects and features of the invention will be set forth in connection with the following description of the illustrated embodiment of the invention.

In the accompanying drawings: Figure 1 is a side-elevation of an account-register embodying the present invention, the supporting and guiding devices for the bill-holder frames being shown in vertical section; Fig. 2 is similar to the lower left-hand portion of Fig. 1, except that it shows the parts in a different position; and Fig. 3 is a front-elevation, in section on the line 3—3 in Fig. 1, of the lower left-hand portion of the machine.

The illustrated embodiment of the invention comprises seven bill-holder frames, which may be of any ordinary or suitable construction. Each frame has a flat body-portion 11 provided with oppositely-disposed flanges 12 constituting vertical divisions in the frames, and in these vertical divisions the bill-holding clips are arranged one above another, so that a large number of clips is carried on each face of each frame, with the exception of the rear face of the rearmost frame. The side-edges 13 of the frames are stiffened and thickened so as to engage each other while spacing the body portion apart. The bottom-edge of each frame is provided with hinge-members connected by pivot-wires 16 so as to pivotally connect the adjacent frames together, as shown in Figs. 1 and 2, the frames being thus permanently connected. The upper edge 17 of each frame is formed with an inclined upper surface 18 which is adapted to receive letters or numerals, or other identifying marks. To render the closure more complete against the ingress of dust falling upon the tops of the frames, and also to cushion the frames against jar when they are forcibly swung together, the members 17 are formed with impressed grooves in their front and rear faces, and in these grooves are mounted strips 20 of rubber, or other resilient material. These strips are conveniently formed as endless rubber bands passing around the lateral edges of the frames, as shown in Fig. 1, being thus secured in position without the use of specific means for this purpose. These bands are placed only upon alternate frames, and when the frames are swung together each band seats itself in the corresponding groove in the next adjacent frame, thus acting as a buffer between the frames and also providing a dust-tight closure between the tops of the frames.

The frames are supported at the front by means pivotally connecting the bottom of the foremost frame with the base or cabinet of the machine. To this end a front-support is employed, comprising upwardly-extending side-members 21 connected by a horizontal bottom-member 22. The foremost frame is seated within this support, having openings in its lower edge seated upon pins 23 projecting upwardly from the bottom-member 22. The side-members 21 are removably secured to the side-edges of the frame by means of pins 24 engaging corresponding openings in the frame, and removably held in operative position by means of springs 25 upon which the pins are mounted. The pins are provided with knobs, as shown in Fig. 3, by which they may be conveniently retracted from their

sockets when the frames are to be removed from the cabinet. The front-support is provided with depending lugs 26, pivotally connected with lugs 27 which are mounted on the top 42 of a cabinet constituting the base of the machine. This arrangement permits the foremost frame, together with any number of the succeeding frames, to be swung forwardly and downwardly, like the leaves of a book, to afford access to any of the bill-holding surfaces of the frames.

The rearmost bill-holder frame is mounted in a rear-support, comprising side-members 28 and a bottom-member 29 within which the frame is seated. The bottom-member 29 is provided with pins 31 engaging corresponding openings in the lower edge of the frame, while spring-pressed pins 32, similar to the pins 24, connect the side-members with the side-edges of the frame. The rear-support does not sustain the weight of the frames, as this function is performed by the front-support, but the rear-support acts to maintain the rearmost frame in upright position and to guide this frame in substantially vertical movements as the other frames are swung about their pivotal connections. Accordingly, the rear-support is maintained in upright position and guided by means of upper and lower pins 33 and 34, respectively, projecting from each side-member 28 of the support. These pins engage guide-ways 35 and 36 which are formed in two uprights 37, constituting a portion of what is hereinafter designated as the "carrier". As the forward frames are swung forwardly and downwardly they act, through the pivotal connections between the frames, to raise those frames which remain in upright position, and this upward movement is permitted by the pin-and-slot connections just described. As shown in Figs. 1 and 2, the guide-ways are slightly inclined, so that although the frames, in normal position, stand vertical, the upward movement of the rearmost frame causes the rear-support and the frames remaining upright to be inclined slightly to the rear. This feature conduces to the convenient use of the device, but it is not claimed herein as I have disclosed and claimed a similar arrangement in a copending application filed of even date herewith.

It will be apparent that when one or more of the frames are swung downwardly the remaining frames are not only raised, but must also move forwardly, and accordingly the uprights 37 must move forward. To this end these uprights are connected by bars 38 so as to form a rigid frame-work constituting the carrier, and at their lower ends the uprights are provided with rollers 39. These rollers travel in slotted guides 40 mounted upon the top 42 of the casing at either side, and the rollers are flanged, as shown in Fig. 3, to prevent lateral displacement of the parts. This arrangement is such that the carrier may move forwardly and backwardly freely with the frames, while maintaining the rear-support and the rearmost frame constantly in upright position. At their forward ends the guides 40 are provided with enlarged openings 41 through which the rollers 39 may be inserted or removed when necessary in assembling or repairing the parts. The sides 43 of the casing are extended upwardly above the guides 40 so as to mask the latter and produce a neat appearance.

To prevent slamming of the frames when they are swung downwardly or upwardly, I employ air-checks which are connected with the frames in a novel and effective manner. Fixed to the middle of the bottom-member 22 of the front-support is an arm 44 which projects downward through a slot in the top 42 of the casing. A cylinder 45 is fixed to the back of the casing, and in this cylinder a piston 46 moves. The piston is connected, by a rod 47, with a pin 49 on the lower end of the arm 44, and this pin moves in a slot 48 in the rod, so as to have a certain amount of lost motion. Openings in the piston-head, controlled by a check-valve 50, permit the piston to move forward freely in the cylinder so as to fill the latter with air when the frames are swung upwardly to normal position. When the frames are swung downwardly the pin 49 moves freely in the slot 48 during the first part of the movement of the frames, but after the pin reaches the end of the slot its further movement, corresponding to the last part of the downward movement of the frames, acts to force the piston into the cylinder, thereby compressing the air in the cylinder and resiliently checking the downward movement of the frames. To adjust this checking effect an air-vent is provided in the rear-end of the cylinder, controlled by a slotted screw 51.

I am aware that air-checks have been previously applied to account-registers of the type in question as shown, for example, in patents previously granted to me, but the present application of this device is novel in that the connections between the air-check and the frames operate in a positive manner. That is to say, it is impossible for any of the frames to swing downward to horizontal position without operating the air-check to the full extent. In this manner the frames are effectually prevented from falling serially, as sometimes occurs where the check is applied, as in previous devices, at the end of a series of frames opposite from that at which the frames are pivotally supported.

The construction just described operates only when the frames are swung downwardly. To prevent slamming when the

frames are swung upwardly to normal position I employ air-checks in connection with the horizontally-movable carrier. To this end each of the uprights 37 is provided with an arm 52 depending through a slot into the interior of the casing, as shown in Fig. 3. Two cylinders 53 are fixed to the back of the casing and provided with pistons 54. From each piston a rod 55 projects forwardly, this rod being provided with a slot engaged by a pin 56 in the lower end of the corresponding arm 52. When the frames are swung upwardly from horizontal position, and the carrier moves backwardly, the pins 56 first traverse idly the slots 7, but during the last part of the backward movement, after the pins have engaged the ends of the slots, the pistons 54 are forced into the cylinders, and the resulting compression of air resiliently retards the rearward movement of the carrier and thus absorbs the momentum of the frames.

As shown in Fig. 3, each clip-spring comprises a loop-shaped member 58 continuous with an intermediate coiled portion 60. Each clip-spring is arranged with the coiled portion in an elongated opening 62 in the body 11 of the frame and a sleeve 63 incloses the coiled portion of each spring, this sleeve being formed by a piece of sheet-metal bent in such a manner as to provide two depending margins which are secured to the body of the bill-holder frame below the opening 62 by means of rivets.

The index 71 is mounted in the usual manner on the top of the casing, and it is provided with the usual glazed cover 66 mounted on hinges 67, so that it may be swung upwardly to afford access to the index.

My invention is not limited to the embodiment thereof hereinbefore described and illustrated in the accompanying drawings, but may be embodied in various other forms, within the nature of the invention as it is defined in the following claims.

I claim:—

1. An account-register having, in combination, a series of bill-holder frames pivotally connected at the bottom, a pivotal support for the foremost frame, and means for maintaining the rearmost frame in upright position, said means being movable forwardly and rearwardly as the frames are swung downwardly and upwardly and having sliding connections to permit the rearmost frame to rise and fall.

2. An account-register having, in combination, a series of bill-holder frames pivotally connected at the bottom, and a movement-checking device connected with the foremost frame and operating, during the latter part only of the downward movement thereof, to resist such movement yieldingly and prevent slamming of the frames.

3. An account-register having, in combination, a series of bill-holder frames pivotally connected at the bottom, a pivotal support for the foremost frame, a support detachably connected with the rearmost frame, a carrier upon which said support is mounted, the support and carrier being connected by means whereby the carrier is maintained in upright position while free to move substantially vertically, and guides for said carrier whereby the carrier is maintained in upright position and guided in substantially horizontal forward and rearward movements.

4. An account-register having, in combination, a series of bill-holder frames hinged directly together at the bottom, means for maintaining the frames normally in upright position, a pivotally-mounted U-shaped support for the frames adapted for interlocking engagement with the foremost frame, an arm projecting rigidly and downwardly from said support, and a movement-checking device connected with said arm and arranged to resist rearward movement thereof.

5. An account-register having, in combination, a series of bill-holder frames hinged directly together at the bottom, a pivotal support for the foremost frame, a carrier movable horizontally and having sliding connections with the rearmost frame whereby said frame is maintained in upright position while free to move vertically, an arm projecting rigidly and downwardly from the foremost frame, and movement-resisting devices connected with said arm and the carrier for resisting rearward movement of both of said parts.

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Witnesses:

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