A. F. STAPLES.

ACCOUNT REGISTER.

APPLICATION FILED MAY 6, 1912.

1,040,805.

Patented Oct. 8, 1912.

2 SHEETS—SHEET 1.

Fig. 1.

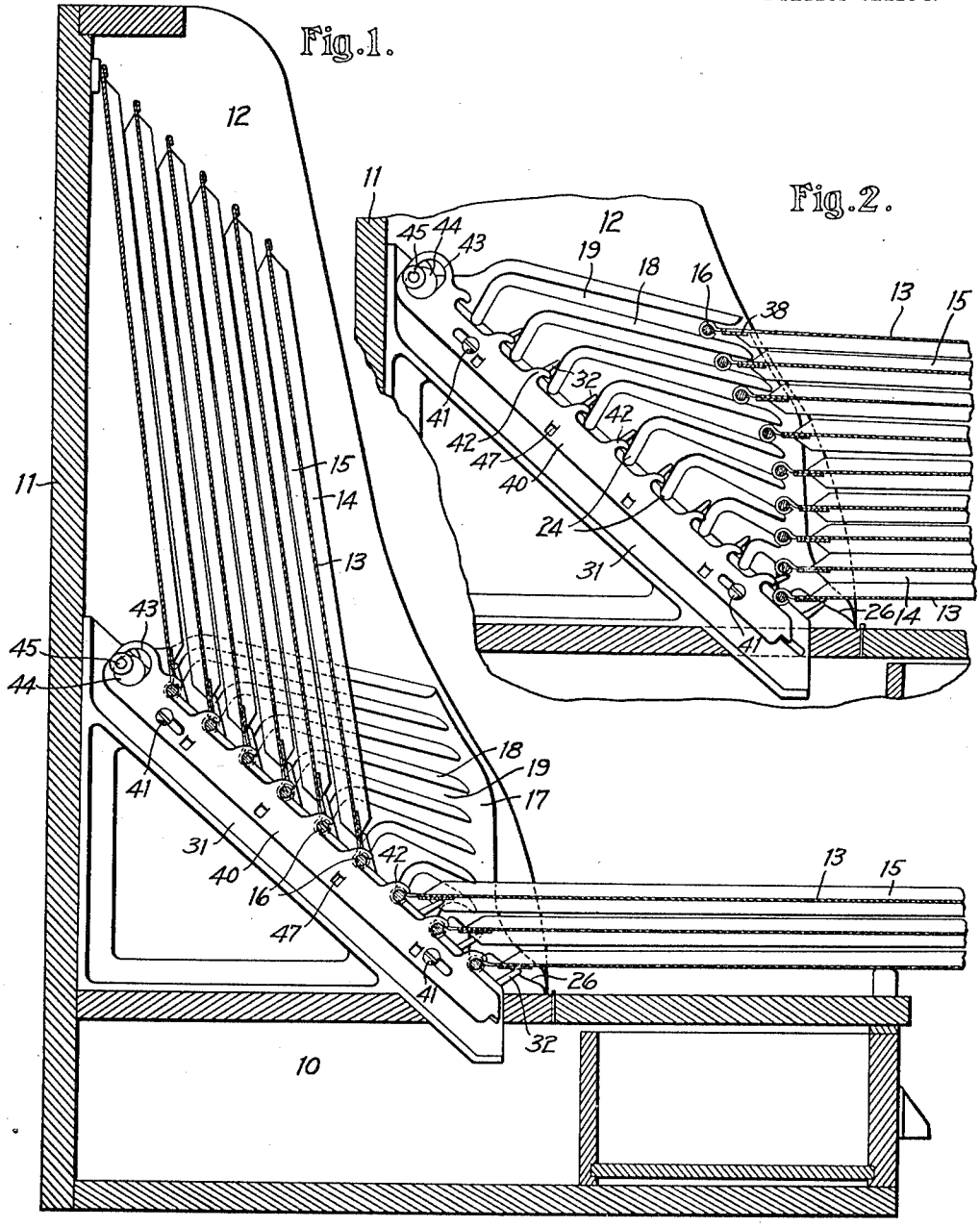

Fig. 2.

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2 SHEETS—SHEET 2.

Fig. 3.

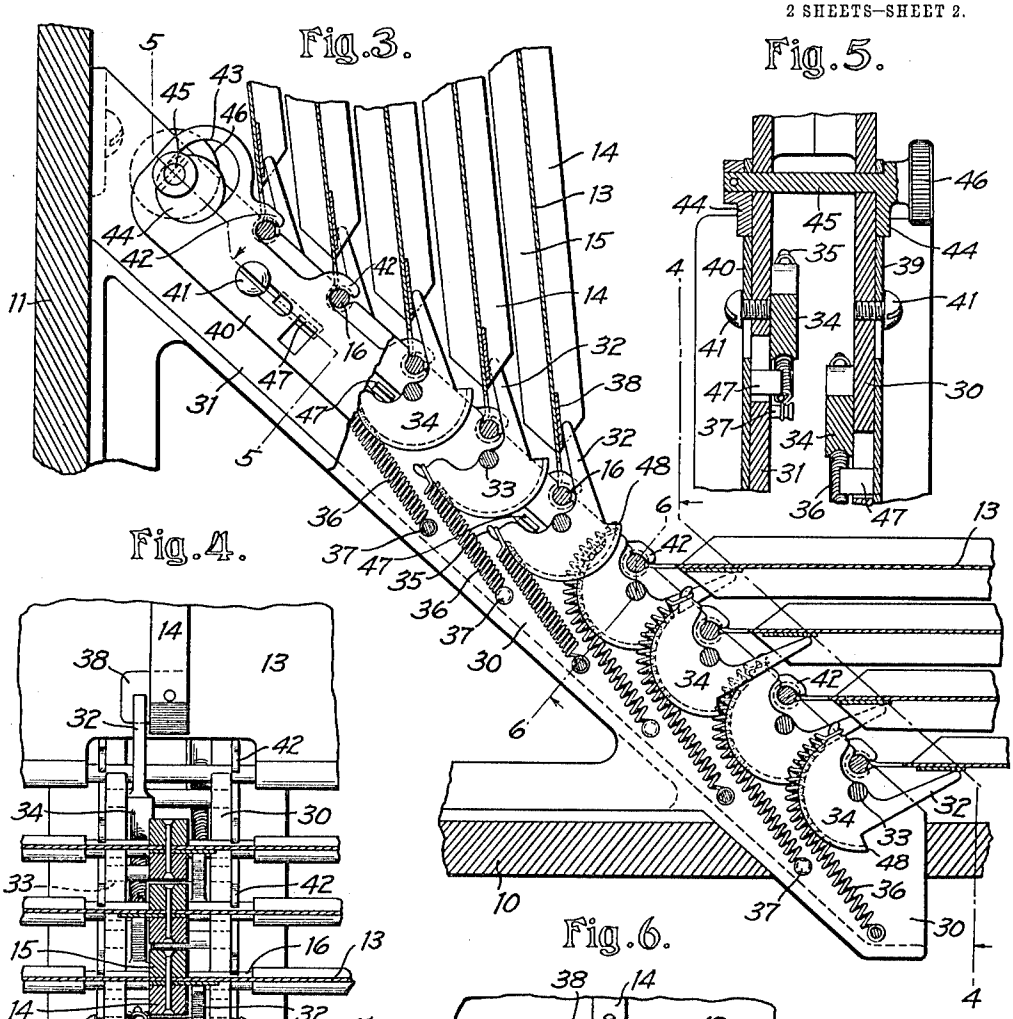


Fig. 5.

Fig. 4.

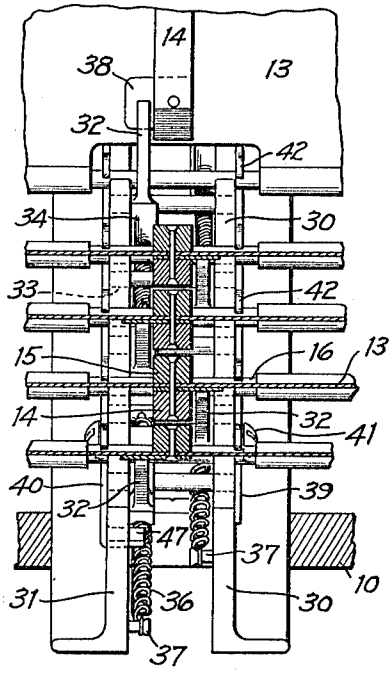
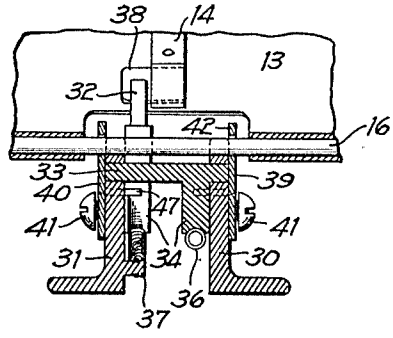


Fig. 6.



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UNITED STATES PATENT OFFICE.

ALBERT F. STAPLES, OF BUFFALO, NEW YORK.

ACCOUNT-REGISTER.

1,040,805. Specification of Letters Patent. Patented Oct. 8, 1912.

Application filed May 6, 1912. Serial No. 695,491.

To all whom it may concern:

Be it known that I, ALBERT F. STAPLES, a citizen of the United States, and resident of Buffalo, in the county of Erie 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 or filing-cabinets of the type in which a series of leaves or frames are mounted, in independent pivotal bearings, upon a support in such a manner that they may be swung into either horizontal or upright position, to afford access to their front and rear surfaces, these surfaces being provided with bill-clips, or other devices, for holding the papers to be filed.

In certain registers of the type in question the filing-frames are so connected with the support on which they stand when in use that they may be readily detached therefrom to permit the frames to be stored in a safe, or any other secure place, when not in use.

The present invention relates particularly to account-registers so constructed, and the object of the invention is to provide counterbalancing-mechanism of simple and effective form, this mechanism forming part of the means for supporting the frames when they are in use, and being so constructed as not to interfere with the application of the frames to, or their removal from, the supporting-means.

To the foregoing end the invention consists in the account-register hereinafter described, as it is defined in the succeeding claims.

In the drawings:—Figure 1 is a sectional side-elevation of an account-register embodying the present invention; Fig. 2 is similar to a portion of Fig. 1, except that the filing-frames are shown in a different position; Fig. 3 is a sectional side-elevation, on a larger scale, showing particularly the spring-controlled arms for counterbalancing the frames; Fig. 4 is a sectional front-elevation on the line 4—4 in Fig. 3; Fig. 5 is a section on the line 5—5 in Fig. 3, looking diagonally downward; and Fig. 6 is a section on the line 6—6 in Fig. 3, looking diagonally upward.

The invention is illustrated particularly as applied to an account-register of the form disclosed in Patent No. 1,023,889, granted to me April 23, 1912, although the invention is equally applicable to account-registers or filing devices of other forms, and the drawings, therefore, illustrate only so much of the construction of the account-register as is necessary for an understanding of the present invention. As in said patent, the present device comprises a cabinet consisting of a base-portion 10, a back 11, and side-members 12 within which the frames normally stand when in position for use. The filing-frames are of a well-known form, each frame comprising a flat sheet-metal body 13 upon which bill-clips, or similar devices, may be mounted, this body being stiffened, both at its lateral edges and at intermediate points, by ribs 14 and 15 secured to its front and rear surfaces. Each frame is provided, at its lower edge, with a transverse wire 16 locked in the sheet-metal, and constituting both a reinforcement and a pivotal support for the frame. The cabinet is illustrated as provided also with guiding- and supporting-members 17 similar to those disclosed in said patent, these members being provided with guide-ribs 18 forming between them slots 19 through which the ends of the pivot-wires 16 are guided to their respective bearings.

The structure peculiar to the present invention is arranged between the bearing-members 17, and preferably at the middle of the frames. Two flat bars 30 and 31 are supported parallel to each other and in inclined positions at the middle of the cabinet, and these bars are notched to receive the pivot-wires 16, as shown particularly in Fig. 3, the sheet-metal of each frame being cut away at this point as shown in Figs. 4 and 6.

The counterbalancing-mechanism comprises a series of short arms 32, each of which is integral with a transverse shaft 33 of which the ends are journaled in the bars 30 and 31, as shown in Fig. 6, each shaft being journaled directly beneath one of the pivot wires 16, so that the arm may engage the front of the corresponding filing-frame. Each arm is also integral with a grooved segment 34 provided, at one extremity of its curved surface, with a hook 35 which engages one end of a coiled spring 36. The other end of the spring is attached to a pin 37 on one of the bars 30 and 31.

To avoid interference between the several segments the adjacent segments and arms are offset from each other so as alternately to engage the frames at opposite sides of the rib 14, as shown particularly in Fig. 4, and the pins 37 accordingly project alternately from the opposite bars.

Owing to the tension of the springs they act constantly to force the arms 32 against the filing-frames so as to partially counterbalance the weight of the frames when they are in horizontal position, as shown in Fig. 3 in the case of the lowest four frames, the springs under these conditions being fully stretched and partially wound upon the segments 34. As the frames are raised from horizontal to upright position the tension of the springs decreases in proportion to the approximation of the frames to upright position. In case it is necessary to replace any one of the springs this may be readily done by unhooking it from the hook 35 and the pin 37, and the springs may thus also be adjusted to the weight of the material carried by the frames in any particular filing-cabinet. To reinforce the thin sheet-metal of the frames against the pressure of the arms 21, chafe-plates 38 are clamped between the ribs 14 and the body-portions 13 of the frames.

Since the upward pressure of the arms 32 tends to raise the lower edges of the frames so as to disengage the pivot-wires from their bearings, means are provided for locking the wires down when the frames are in use. To this end slide-plates 39 and 40 are mounted on the outer surfaces of the bars 30 and 31, being held in position by screws 41 passing through slots in the plates and into the bars. Each of the slide-plates is provided with a series of hooks 42 so located that, when the bars are in their lower position, the hooks engage the several pivot-wires 16, as shown in the drawing. To hold the slide-plates normally in this position, and also to provide for moving them upwardly when it is necessary to release the pivot-wires, each plate is provided, at its upper end, with an elongated opening 43 engaged by an eccentric 44, and these eccentrics are fixed to a transverse shaft 45 provided, at the right-hand end, with a knurled head 46, as shown in Fig. 5, by which a half-rotation may be given to the eccentrics. In removing the frames from the cabinet, and replacing them therein, it is necessary to hold the counterbalancing-arms 32 out of operative position in order that they may not interfere with the movements of the pivot-wires in the slots 19. This is accomplished by causing the slide-plates 39 and 40 to lock the arms in a partially depressed position when the slide-plates are in their upper position. Each slide-plate is provided with a series of lugs 47 which are illustrated as cut and bent from the sheet-metal of the plates, these lugs projecting inwardly through slots in the bars 30 and 31, and each segment 34 is provided with a shoulder 48 adapted to be engaged by one of the lugs 47. When it is necessary to remove the frames from the cabinet the frames are first all brought down to horizontal position, thus swinging the segments 34 to a position in which the shoulders 48 are in their lowermost position. The head 46 is then turned so as to raise the slide-plates 39 and 40, thus bringing the lugs 47 into position directly above the shoulders 48, while at the same time disengaging the hooks 42 from the pivot-wires. The frames are then swung into an inclined position in which their upper edges lie approximately in line with each other, that is, in a plane normal to the planes of the frames, and during this movement the arms 32 return through a short distance sufficient to cause them to swing clear of the guide-slots 19, as shown in Fig. 2, and are then arrested in this position by the engagement of the shoulders 48 and the lugs 47 and are thus locked in this position while the frames are out of the cabinet and until they have been replaced therein and the slide-plates have been again moved downwardly to lock the pivot-wires in their bearings.

The frames are removed from the cabinet in the same manner as in my said patent; that is, when in the inclined position just described, their upper edges are held against relative sliding movement by the user, and are then swung back to horizontal position, thus causing the pivot-wires to slide upwardly and forwardly in the guide-slots and bringing the frames to horizontal, directly superposed position upon the base 10. The frames may then be strapped, or otherwise fastened together, and removed entirely from the cabinet. They are replaced in the cabinet also as described in said patent, being laid in horizontal position upon the base and then thrust rearwardly so as to cause the pivot-wires to engage the guide-slots, as shown in Fig. 2, this movement being continued until all of the wires are in their respective bearings.

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, means for supporting a plurality of bill-holder frames pivotally at their lower edges, said means including counterbalancing devices tending to raise the frames to upright position; a set of bill-holder frames normally supported by said means but readily removable therefrom, and means for

holding the counterbalancing devices out of operation while the frames are being placed upon the supporting-means.

2. An account-register having, in combination, means for supporting a plurality of bill-holder frames pivotally at their lower edges, said means including counterbalancing devices tending to raise the frames to upright position; a set of bill-holder frames normally supported by said means but readily removable therefrom, and means for holding the counterbalancing devices out of operation while the frames are being placed upon and removed from the supporting-means.

3. An account-register having, in combination, means for supporting a plurality of bill-holder frames pivotally at their lower edges; a set of bill-holder frames normally supported by said means but readily removable therefrom, a plurality of counterbalancing devices adapted to engage the frames severally and tending to raise them to upright position, and manually-operable means for holding the counterbalancing devices simultaneously out of operative engagement with the frames while the frames are placed upon the supporting-means.

4. An account-register having, in combination, means for supporting a plurality of bill-holder frames pivotally at their lower edges; a set of bill-holder frames normally supported by said means but readily removable therefrom, a plurality of counterbalancing devices adapted to engage the frames severally and tending to raise them to upright position, and a slide having abutments adapted to coöperate simultaneously with the several counterbalancing devices to hold them out of operation, the slide being movable to release said devices during the normal operation of the account-register.

5. An account-register having, in combination, a set of upwardly-opening bearings arranged in an inclined plane, a set of bill-holder frames having pivot-members at their lower edges by which they may be supported on said bearings, a series of counterbalancing devices each comprising a resilient arm pivoted below the pivotal axis of the respective frame and adapted to engage the front of the frame above said axis, and means for locking the pivot-members in the bearings.

6. An account-register having, in combination, a set of upwardly-opening bearings arranged in an inclined plane, a set of bill-holder frames having pivot-members at their lower edges by which they may be supported on said bearings, a series of counterbalancing devices each comprising a resilient arm pivoted below the pivotal axis of the respective frame and adapted to engage the front of the frame above said axis, means for locking the pivot-members normally in the bearings, and means for holding the resilient arms out of operative position when the locking-means are out of operation.

7. An account-register having, in combination, a plurality of bill-holder frames pivotally movable about their lower edges, a support, and counterbalancing devices tending to raise the frames to upright position, each of said devices comprising a member pivoted upon the support adjacent the lower edge of the corresponding frame and provided with an arm to engage the frame, and a coiled tension-spring partially wrapped about said member and secured, at one end, to said member, and, at the other end, to the support.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."