

No. 716,485.

Patented Dec. 23, 1902.

F. SCHILZ.
PAPER FEEDING DEVICE.

(Application filed Oct. 5, 1901.)

(No Model.)

Fig. 1.

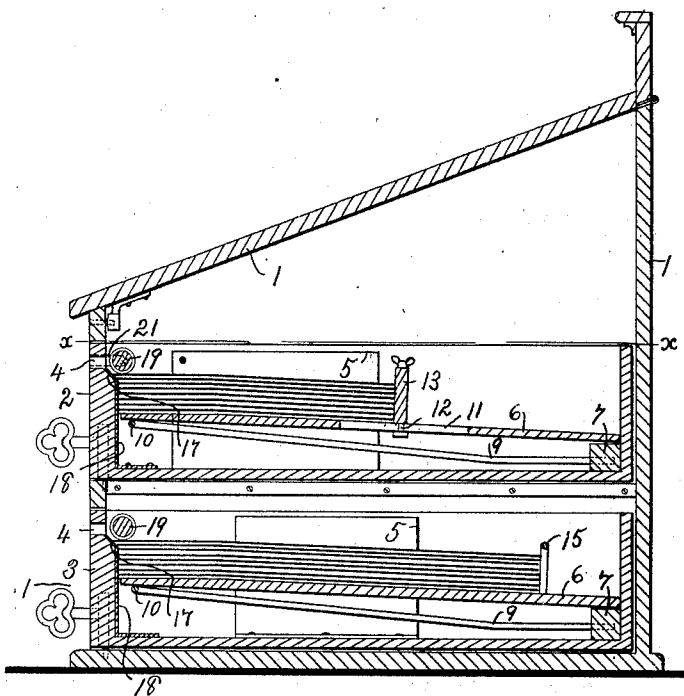
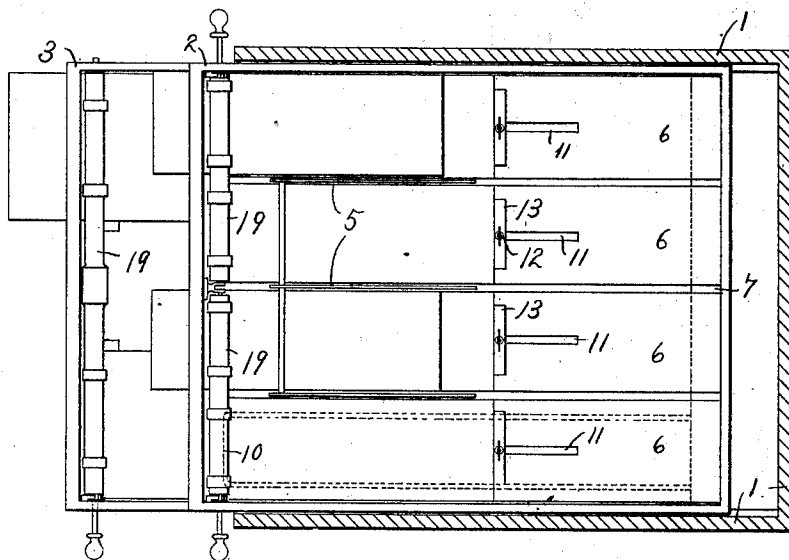


Fig. 2.



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PAPER-FEEDING DEVICE.

SPECIFICATION forming part of Letters Patent No. 716,485, dated December 23, 1902.

Application filed October 5, 1901. Serial No. 77,625. (No model.)

To all whom it may concern:

Be it known that I, FRANK SCHILZ, a citizen of the United States, residing at Milwaukee, county of Milwaukee, and State of Wisconsin, have invented new and useful Improvements in Paper-Feeding Devices, of which the following is a specification.

My invention relates to improvements in paper-feeding devices, with especial reference to that class of devices used for letter-sheets, envelopes, bill-heads, blanks, &c.

The object of my invention is to provide a more convenient and efficient cabinet and feeding mechanism therefor than those heretofore employed for similar purposes.

A special object is to provide a series of drawers in each of which complete feeding apparatus is located.

A further special object is to provide means whereby the withdrawal of one sheet, envelop, or other article will automatically start an article in an adjacent compartment and move the same to an exposed position where it can be readily grasped and removed.

In the following description reference is had to the accompanying drawings, in which—

Figure 1 is a vertical sectional view of my invention; and Fig. 2 is a plan view of the same, with the upper portion of the cabinet removed, on line *xx* of Fig. 1 and with the drawers partially open.

Like parts are identified by the same reference-figures in both views.

1 is the inclosing cabinet. 2 and 3 are the drawers therefor. The front wall of each drawer is provided with one or more slots 4, through which the paper sheets, envelops, and other articles are discharged. The drawers are divided into compartments by partitions 5, and each compartment is provided with a movable bottom 6, supported at its rear end on a block 7 and at its front end by a spring-loop, preferably formed of wire, with its ends secured in the block 7, the wire being bent at an intermediate point 9, so that the loop 10 will press forcibly against the under surface of the movable bottom 6 at or near its front end, as clearly shown in Fig. 1. The movable bottom 6 is also provided with a slot 11, in which the adjusting-bolt 12 of a stop 13 engages, the paper or other articles being

placed upon the bottom between the stop 13 and the front of the cabinet. Where it is not desired to use the device for sheets of different lengths, however, a fixed stop 15 may be used, as shown in the lower drawer in Fig. 1. The front wall 3 of the drawer is preferably formed with a downwardly and inwardly extending bevel 17, leading from the inner edge of the slot 4 to the vertical facing 18, against which the edges of the paper rest when the latter is in position. A frictional discharge-roller 19 is supported in suitable bearings in the drawer in a position parallel with the discharge-slot 4 and with its axis nearly opposite the longitudinal center of the slot and the lower edge of the roller extending slightly below the slot.

In use a paper is adjusted between the stop 13 (or 15) and the facing 18, with the front edges in frictional contact with said facing, the movable bottom 6 being depressed against the tension of the spring 8 to permit the insertion of the paper. As soon as the manual pressure is removed after the insertion of the paper the bottom 6 is lifted until the paper bears near one edge against the friction-roller 19, the upper sheets then occupying a position with their front edges in registry with the diagonal face 17. If the roller 19 be then actuated to advance the sheet, it will pass upwardly along the diagonal face 17 to the discharge-slot 4 and out through the latter. A single roller extends transversely across a plurality of compartments. It is therefore obvious that if the sheets in one compartment be retained while a sheet in one of the other compartments is partially withdrawn and the retaining force then removed a complete withdrawal of the sheet which has been started will actuate the roller to start a sheet in the adjacent compartment, the roller being therefore actuated by means of the sheet alone and the withdrawal of a sheet in one compartment serving to start a sheet in an adjacent compartment through the friction of the withdrawn sheet upon the roller to actuate the latter and the friction of the latter upon the sheet in the next compartment.

In Fig. 2 I have shown the upper drawer divided into four compartments, and two roll-

ers are used, each extending across two of the compartments. A single roller may, if desired, be used in place of the two rollers shown. In the lower drawer a single roller is shown extending from one side of the drawer to the other. The side walls of the cabinet are provided with slots 21 for the reception of the roller-shafts, the slots being open to the front, so that when the drawers are open for the insertion of paper or for any other reason the roller-shafts are permitted to move with the drawers.

I attach considerable importance, first, to the location of the roller with its axis nearly opposite the longitudinal center of the discharge-slot, and, second, to the provision of the diagonal face 17 and of means for maintaining the edges of the paper in frictional contact with the vertical facing 18. The upper sheet becomes slightly individualized by springing away from the lower sheet as soon as it reaches the diagonal part 17, and is thus released from frictional contact with the vertical part 18. By locating the roller 19 in the described position I am enabled to provide a slot of such transverse diameter as to freely permit the discharge of envelopes and other comparatively thick articles, and yet prevent the simultaneous discharge of more than one. Great importance is also attached to the fact that the rollers of different compartments are connected, the simplest form of such action being that shown in the drawings, where the rollers of adjacent compartments are formed integrally as a single roller.

I am aware that stamp-cabinets have heretofore been provided having drawers in each of which a single sheet of stamps is inserted between a pair of holding-plates and fed through a slot by means of a pair of rollers engaging the front edge of the sheet; but I believe I am the first to provide a cabinet with a series of drawers each containing sheet-individualizing mechanism, the same being so arranged with reference to economy of space and convenience in separately withdrawing the sheets that a complete set, or even several coöperative parallel sets, may be located in a single drawer. I have therefore constructed the carrier and actuating mechanism with reference to great economy of space, the spring-wire loop 10 being not only capable of considerable upward movement, but occupying almost no space at the front if pressed downwardly to the bottom of the cabinet. To greatly facilitate the individualization of the sheets, I have located the roller 19 in such a position that it partially overlaps the inclined surface 17, the center of the roller being nearly in the plane of the vertical facing 18. With this arrangement the pressure of the roller is exerted so near to the front edge of those sheets abutting the facing 18 as to have but little effect, while the upper sheets are shifted forwardly on the incline 17 by withdrawal of the preceding sheets, and are thus in a position for effective

frictional contact with the roller. The cabinet is organized for holding the paper in unbound condition, so that the upper sheets are free to shift forwardly upon the inclined surface 17, as shown. The stops 13 and 15 or equivalent means for preventing a backward movement are therefore of great importance, as they hold the package in a position to be acted upon by the roller, the latter being so located that but little backward movement of the package would be required to take it out of contact.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a device of the described class, the combination of a receptacle, having a slot in one of its walls; a paper-supporting carrier; a facing substantially perpendicular to the carrier; a device on the carrier for holding sheets of paper with their front edges in contact with said facing; an inclined surface extending from said facing to the slot; and a frictional discharge-roller located to partially overlap said inclined surface in a position to bear forcibly upon the front edges of the paper abutting the facing, and also upon portions of the sheets advanced upon said inclined surface; said inclined surface being formed to extend below the plane of the upper sheet, when the latter is in contact with the roller.

2. In a device of the described class, the combination of a receptacle having a slot in one of its walls; a paper-supporting carrier; a facing substantially perpendicular to the carrier; a device on the carrier for holding sheets of paper with their front edges in contact with said facing; an inclined surface extending from said facing to the slot; and a frictional discharge-roller located in a position to bear centrally upon the edges of such sheets as contact with the facing, and in the rear of the front edges of such sheets as are shifted forwardly upon said inclined surface; the sheets being unbound and the roller being located in a position to permit the elevation of the upper sheets above the lower portion of the inclined surface.

3. In a device of the described class, the combination of a receptacle having a slot in one of its walls; a paper-supporting carrier; a facing substantially perpendicular to the carrier; an adjustable device on the carrier for holding sheets of paper with their front edges in contact with said facing; an inclined surface extending from said facing to the slot; and a frictional discharge-roller located to partially overlap said inclined surface in a position to bear forcibly upon the front edges of the paper abutting the facing, and also upon portions of the sheets advanced upon said inclined surface; the sheets being unbound and the roller being located in a position to permit the elevation of the upper sheets above the lower portion of the inclined surface.

4. In a paper-holding cabinet organized for holding packages of unbound sheets of paper and paper articles, the combination of a paper-supporting carrier located within the cabinet; a frictional discharge-roller located above one edge of the carrier and adjacent to a slot in one of the walls of the cabinet; a facing substantially perpendicular to the carrier; an inclined surface extending from the facing to the slot; and means for holding the paper on the carrier, with edges in contact with the facing and inclined surface, said roller being located to permit the upper sheets to shift forwardly on said inclined surface, and arranged to bear upon the paper directly above the edges of such sheets as are in contact with the facing.

5. In a paper-holding cabinet, organized for holding packages of unbound sheets of paper and paper articles, the combination of a series of paper-supporting carriers; partitions extending between the carrier; a facing substantially perpendicular to the carriers, and an inclined surface extending therefrom to a slot in the wall of the cabinet; a frictional discharge-roller located to partially overlap said

inclined surface, and having a central bearing upon the paper carried by the carriers on a line substantially in the plane of the facing, and in front of the partitions. 30

6. In a paper-holding cabinet, organized for holding packages of unbound sheets of paper and paper articles, the combination of a series of paper-supporting carriers; partitions extending between the carrier; a facing substantially perpendicular to the carriers, and an inclined surface extending therefrom to a slot in the wall of the cabinet; a frictional discharge-roller located to partially overlap said inclined surface, and having a central bearing upon the paper carried by the carriers on a line substantially in the plane of the facing, and in front of the partitions; together with means, coöperative with the partitions, for holding the paper with edges in contact with the facing. 45

In testimony whereof I affix my signature in the presence of two witnesses.

FRANK SCHILZ.

Witnesses:

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