F. H. HOBERG.

SHEET STARTING APPARATUS.

APPLICATION FILED MAY 31, 1916.

1,200,837. Patented Oct. 10, 1916.

Fig. 1.

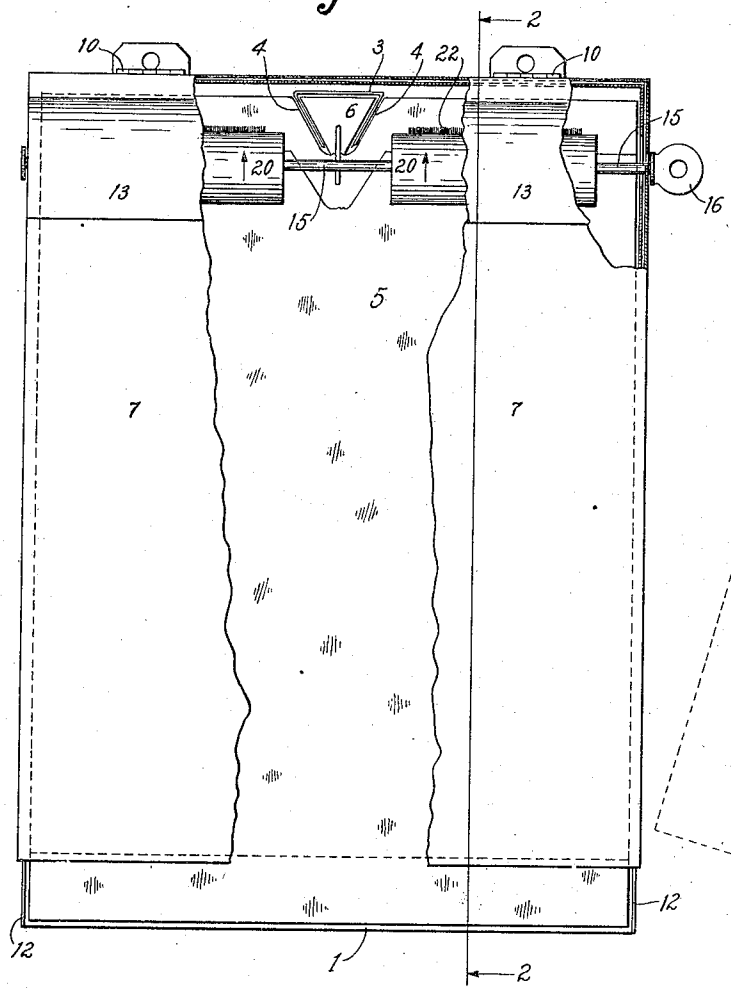
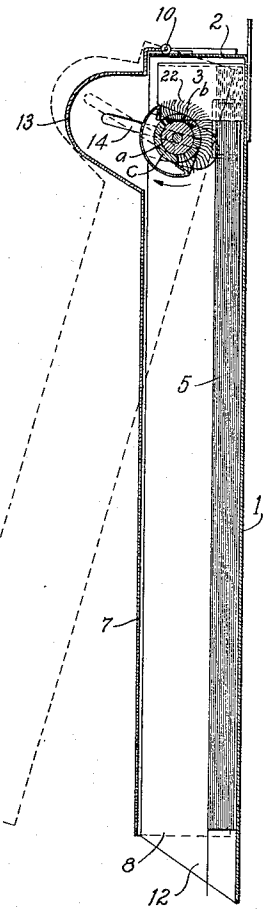


Fig. 2.



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SHEET-STARTING APPARATUS.

1,200,837. Specification of Letters Patent. Patented Oct. 10, 1916.

Application filed May 31, 1916. Serial No. 100,922.

To all whom it may concern:

Be it known that I, FRANK H. HOBERG, a citizen of the United States, residing at Green Bay, county of Brown, and State of Wisconsin, have invented new and useful Improvements in Sheet-Starting Apparatus, of which the following is a specification.

My invention relates to improvements in sheet starting apparatus.

In a companion application bearing even date herewith, for Letters Patent for improvements in paper feeding cabinets, I have disclosed a cabinet having a lever operated reciprocatory brush which is moved along the surface of a paper package to effect the discharge of the sheets successively through an opening in the lower end of the cabinet.

The object of the present invention is to provide means whereby a brush having similar characteristics may be rotatively actuated into and out of contact with the surface of the package to effect the discharge of the sheets without any rubbing contact upon the surface of the sheet. Also to provide a less expensive cabinet than that shown in the companion application and one which is peculiarly adapted for private use.

In the drawings—Figure 1 is a front elevation of a paper feeding cabinet embodying my invention, portions of the front wall being broken away to show the interior. Fig. 2 is a sectional view drawn on line 2—2 of Fig. 1 and showing a paper package within the cabinet with dotted lines indicating the cover section of the cabinet swung to a partially open position.

Like parts are identified by the same reference characters throughout both views.

A wall plate 1 having a cap flange 2 is provided with a package supporting bracket 3 under the cap flange. The bracket 3 is provided with converging sides adapted to engage in slots 4 formed in a paper package 5, whereby the bracket embraces a dovetailed stub 6 partially severed from the package by said slots 4. A cover 7, provided with side flanges 8, is hinged to the cap flange 2 at 10 and the wall plate 1 is preferably provided with side flanges 12 over which the flanges carried by the cover are adapted to fit when the cover is in closed position. The wall of the cover near its upper end is arched outwardly, as shown at 13, and the side flanges 8 are provided with diagonal slots 14 through which an operating shaft 15 projects. One end of the shade is provided with a knob 16, whereby the shaft may be rotated. The slots 14 are inclined downwardly in the direction of the back plate 1, so that the shaft 15 tends to slide toward the back plate.

Cylindrical members 20 are mounted upon the shaft 15 on opposite sides of the bracket 3 and a portion of the periphery of each of the members 20 is provided with a multiple series of projecting wire filaments or bristles 22 which cover a segmental portion of the cylinder and constitute a brush. Stiff bristles may be employed, but I preferably form the brush of short strands of wire, the inner ends of which are embedded in the material composing the cylinder 20, while the outer ends are adapted to bear against the front sheet of the paper package 5, as clearly shown in Fig. 2. By rotating the shaft 15 and cylinders 20 in the direction indicated by the arrows in Fig. 2, the front sheet will be torn away from the stub 6 and discharged through the lower open end of the cabinet. The projecting ends of each wire will preferably be bent in the direction of rotation, whereby when the shaft 15 and cylinders 20 are rotated in the direction indicated by the arrows, the wire filaments or bristles will be forced against the front sheet of the package with increasing pressure as the wires tend to straighten to positions of radial projection.

After the sheet has been torn from the stub, it will be moved downwardly by the brush until its lower end projects through the open lower end of the cabinet, whereupon it may be grasped and pulled out from the cabinet by the user. The brush is located at a sufficient distance from the top of the cabinet and covers a sufficient portion of the surfaces of the cylinders 20 to fully remove the front sheet from the stub and cause its exposure at the lower end

of the cabinet, after which the brush passes out of contact with the paper so that a further rotation of the shaft and cylinders will not actuate the second sheet until a complete rotation has been performed, whereupon the brush will again be brought into contact with the package with the bristles bearing upon the second sheet, the latter being discharged in case the rotation of the brush continues.

I preferably form the cylinders with a center core piece *a*, to which a brush back *b* containing the bristles may be secured on one side. The smooth surfaced portion *c* may be permanently secured to the core *a* or detachably connected therewith, as desired. This construction enables me to remove and replace the brush without removing or replacing the members *a* and *c*.

Owing to the inclination of the projecting ends of the bristles in the direction of normal cylinder rotation, whereby each bristle is inclined at an intermediate angle diverging both from a tangential line and a radial line projected from the point where the bristle enters the cylinder, it is obvious that the brush is adapted to actuate the paper in one direction only. In case the cylinders are rotated in the reverse direction, the bristles or filaments will slide freely over the surface of the paper without actuating it, for they will be drawn with a trailing movement along the contacting surface, whereas when the cylinders are rotated in the proper direction to feed the sheet downwardly, the points of the wire will, as above stated, tend to force into the front sheet and will therefore grip it securely.

I have found by experiments that whereas ordinary rollers provided with rubber surfaces or surfaces of other frictional material will in the course of time become too slippery to operate successfully for the discharge of the sheets, a brush composed of wire filaments or bristles will maintain its efficiency indefinitely and will invariably grip and start the front sheet of paper from the package. I have also found that by leaving a portion of the periphery of each cylinder smooth surfaced, so that the sheet starting operation will take place intermittingly when the shaft 15 is rotated, I am able to largely prevent the withdrawal of an unnecessary number of sheets from the package. Users of paper towels are apt to waste the paper if the sheet starter can be operated to continuously discharge the sheets, but by providing a form of construction in which only one sheet can be started with each complete rotation of the operating knob 16, the successive discharge of the contents is too slow to tempt the user to discharge an unnecessary quantity.

By employing a brush having inclined bristles as above described, whereby a rotation in the wrong direction will be ineffective, it becomes unnecessary to provide pawl and ratchet or equivalent mechanism to prevent backward rotation. Also by providing the shaft supporting member with inclined slotted bearings for the shaft, I am able to dispense with springs by allowing the shaft 15 to slide downwardly and rearwardly in said slotted bearings until the cylinders 20 or the brushes thereon are brought into contact with the front sheet of the package. For this reason, the package may be allowed to rest against the back plate, since it is not necessary to press it forwardly against the sheet starter. My improved cabinet is therefore extremely simple and inexpensive. It is peculiarly adapted for private use whereas the cabinet described and claimed in the companion application is better adapted for use in public places, such as hotels, etc.

I claim—

1. Sheet starting apparatus, comprising a package support, a rotary shaft, supporting members for the respective ends of the shaft, having inclined slotted bearings for said shaft adapted to permit the shaft to slide toward a package of paper suspended from the package support, a cylindrical member carried by said shaft, and a segmental brush mounted upon the periphery of the cylindrical member.

2. Sheet starting apparatus, comprising a package inclosing cabinet having slotted side walls near its upper end, said slots being inclined downwardly in the direction of the rear wall of the cabinet, a shaft extending across the interior portion of the cabinet and projecting through said slots, and a set of brushes having cylindrical curved backs supported on said shaft within the cabinet in positions to bear against a package of paper therein, said brush having flexible projecting filaments inclined from the surface of the back in the direction of normal shaft rotation.

3. Sheet starting apparatus including the combination with a paper feeding cabinet having its side walls provided near their upper ends with downwardly and rearwardly inclined slots, a shaft extending through said slots and across the interior portion of the cabinet, a set of cylindrical members mounted upon said shaft, and a set of segmental brushes carried by said cylinders.

4. Sheet starting apparatus including the combination with a paper feeding cabinet having its side walls provided near their upper ends with downwardly and rearwardly inclined slots, a shaft extending

through said slots and across the interior portion of the cabinet, a set of cylindrical members mounted upon said shaft, and a set of segmental brushes carried by said cylinders, each of said brushes having wire bristles inclined in the direction of normal rotation, and said shaft and cylinders being adapted for rotation in contact with a package of paper inclosed by the cabinet on the downwardly moving side of the cylinder.

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

FRANK H. HOBERG.

Witnesses:
WARD E. BLACK,
HENRY GOETHE.

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