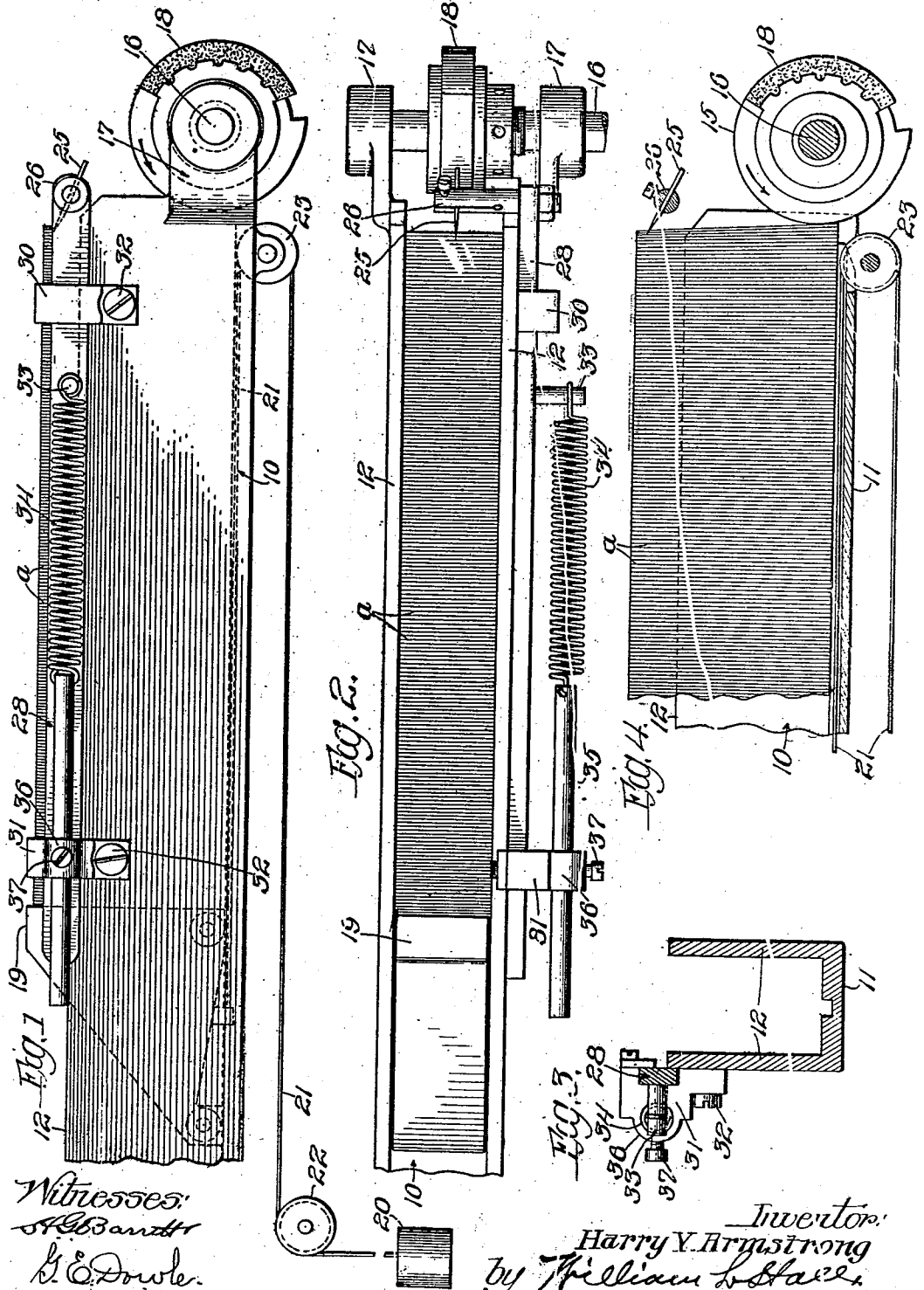


H. Y. ARMSTRONG.
SHEET FEEDING DEVICE.
APPLICATION FILED JAN. 8, 1912.

1,061,584.

Patented May 13, 1913.



Witnesses:
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UNITED STATES PATENT OFFICE.

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SHEET-FEEDING DEVICE.

1,061,584.

Specification of Letters Patent.

Patented May 13, 1913.

Application filed January 2, 1912. Serial No. 669,935.

To all whom it may concern:

Be it known that I, HARRY Y. ARMSTRONG, a citizen of the United States, and a resident of Elgin, in the county of Kane and State of Illinois, have invented certain new and useful Improvements in Sheet-Feeding Devices; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in sheet delivery devices of that class designed to strip or deliver individual sheets, one at a time, from a bundle of sheets, and the invention consists in the matters hereinafter set forth and more particularly pointed out in the appended claims.

The invention is more specifically adapted to separately deliver thin wrappers from a magazine which supports said wrappers in a compact group to the wrapping mechanism of a wrapping machine, as a gum wrapping machine, but is capable of other like adaptations where it is desired to consecutively deliver individual sheets from a bundle of sheets.

In the drawings;—Figure 1 is a side elevation of a sheet delivery device embodying my invention. Fig. 2 is a plan view thereof. Fig. 3 is a cross section of the magazine. Fig. 4 is a partial longitudinal section of the magazine with the sheets or wrappers grouped therein.

As shown in the drawings 10 designates a generally horizontal magazine comprising the bottom wall 11 and side walls 12, adapted to receive and support a compact group of sheets or wrappers *a* arranged flatwise together and on edge in said magazine. Located at the inner or delivery end of the magazine is a rotative stripper roll 15 that is fixed to a shaft 16 that is rotatively mounted in bearing arms 17, 17 carried by the side walls 12 of the magazine. Said stripper roll 15 is formed with a partially smooth peripheral portion and with a segmental frictional peripheral portion, in a manner generally similar to the construction shown in my prior application for U. S. Letters Patent, Serial No. 521,834, filed on the 9th day of October, 1909, the arrangement being such that when the smooth por-

tion of the stripper roll is moving in contact with the sheets the said roll exerts no stripping action against said wrappers or sheets to draw them from the group or bundle, but said wrappers or sheets are stripped from the bundle when the frictional peripheral portion passes into engagement therewith. The bundle of wrappers in the magazine are pressed against the stripper roll by means of a follower 19 arranged at the rear end of the magazine, which is forced against the bundle of sheets by means of a weight 20, or equivalent device, that operates on said follower through a strap or belt 21 that is trained over the pulleys 22, 23 and is attached to said follower. The action of the follower is to force the group of sheets, as a whole, toward the stripper roll, to hold the forwardmost sheet or wrapper against the roll as the sheets are stripped, one by one, from the forward end of the group. In this respect the construction and operation of the present device is generally similar to that shown and described in my afore-said prior application for U. S. Letters Patent.

In addition to the mechanism described, I have provided means to prevent more than one sheet being stripped from the bundle at a time, the said means comprising a retarding device for the sheets inside the outermost sheet. As shown in my prior application, and as also shown herein, the said retarding device consists of a needle, the pointed end of which is pressed inwardly toward the sheets at the inner end of the group so that the pointed end of the needle penetrates the first few sheets at the inner end of the bundle, with the result of holding the sheet or sheets next innermost to that dragged or stripped from the bundle from being stripped with the forwardmost sheet. In accordance with my present invention the retarding device or needle, designated by 25, is carried by a member 26 arranged transversely in front of the group of sheets and is placed under the action or influence of a spring or like yielding element so that said needle is held yieldingly against the sheets, so as to thereby follow the contour of the inner ends of the group of sheets. As herein shown the said transverse needle carrying member 26 is carried by or fixed to the forward end of a sliding bar 28

that lies outside one wall 12 of the magazine and is guidingly supported in guides 30, 31 attached by the screws 32, 32 to the said wall. Said sliding bar 28 is provided with a laterally extending lug 33 to which one end of a spring 34 is attached, the other end of the spring being attached to a spring adjusting rod 35 that is mounted in and has sliding adjusting engagement with an apertured lug 36 of the guide 31, as herein shown, and is adapted to be locked thereto by means of the set screw 37. The spring 33 serves to yieldingly hold the needle 25 pressed toward and penetrate the few outermost sheets. The follower 19 presses the group of sheets against the stripper roll and retarding needle so as to hold the outermost sheets constantly engaged therewith.

The advantage of employing a yieldable retarding device, such as described, is that the printing on the sheets (when said sheets are used as labeled wrappers) may be disposed principally at or near the upper or lower edges of said sheets. The printing is of such appreciable thickness and the sheets are so thin that if the printing occurs principally or largely at one side of the center of the wrappers or sheets, such additional thickness will manifest itself in forcing the general outline of the front end of the group of wrappers, at either its top or its bottom side, ahead of the other side. This is indicated in a general way in Fig. 4, in which it may be assumed that the additional thickness given to the sheets, due to the printing, is at or near the lower sides thereof. When the retarding device or needle is located on a fixed part of the device the said needle does not and cannot adapt itself to the irregularities of thickness mentioned, so that if it be assumed that the condition generally indicated in Fig. 4, be exaggerated beyond that shown therein, the needle would not engage the sheets and would not perform its intended function. With my present device the yielding mounting of the needle permits it to follow accurately the outline of the inner end of the group of sheets, regardless of whether the upper or lower edges of the sheets are advanced beyond the other side,

due to the additional thickness on account of the printed labels.

It will be understood that my improvements are capable of varied structural variations and of other adaptations, and I do not wish to be limited to such details except as hereinafter made the subject of specific claims.

I claim as my invention:—

1. The combination with a magazine to receive a group of sheets, a rotative stripper device mounted at one end of the magazine to rotate on an axis fixed relatively to said magazine for stripping the sheets one at a time from said group, means to feed the sheets toward the stripper device, a needle adapted to penetrate the sheets at the outer end of the magazine, a support for the needle embracing a sliding bar having guiding support on the wall of the magazine, and a spring stretched between the magazine wall and said sliding bar.

2. The combination with means for guiding a bundle of sheets having relatively thicker and thinner portions with the sheets standing on edge, stripping means unyieldingly engaging the delivery end of the bundle near one margin of the sheets, retarding means movable in a fixed path of travel and engaging the delivering end at a point remote from the point of engagement thereof by said stripping means, means engaging that end of the bundle remote from the delivery end for bodily moving the bundle and simultaneously advancing all portions of the sheets of the bundle toward said retarding and stripping means, and a device for moving said retarding means toward the delivery end of the bundle to compensate for varying degrees of inclination of the delivery end of the bundle with respect to the plane of the opposite end thereof.

In testimony, that I claim the foregoing as my invention I affix my signature in the presence of two witnesses, this 2nd day of 95 January A. D. 1912.

HARRY YARRINGTON ARMSTRONG.

Witnesses:

WILLIAM L. HALL,
G. E. DOWLE.