

927,502.

Patented July 13, 1909.

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WITNESSES
Chas. Clagitt
M. E. Stanton
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UNITED STATES PATENT OFFICE.

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FOLDER FOR BOX-STAYING MACHINES.

No. 927,502.

Specification of Letters Patent.

Patented July 13, 1909.

Application filed November 23, 1906. Serial No. 344,781.

To all whom it may concern:

Be it known that I, HENRY DE SMITH, citizen of the United States, and resident of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Folders for Box-Staying Machines, of which the following is a specification.

In box-staying machines of the general type disclosed in Letters Patent No. 447,955, dated March 10, 1891, a stay-strip of paper or other suitable material is carried by a reel and is fed therefrom by feeding mechanism to a position between clamping dies which operate to press the stay-strip upon the corner of an interposed box; the stay-strip being rendered adhesive during its passage from the reel to the clamping dies in order that it may be caused to adhere to the box corners when pressed thereon.

In order to assure the stay-strip being evenly applied to the box corners by the clamping dies it is also acted upon during its passage from the reel to the clamping dies by a so-called "folder" which operates to fold and centrally crease the stay-strip so that it will take and maintain a substantially V-shape form when introduced between the clamping dies for location over the box corner.

Folders for acting on stay-strips in the manner referred to usually comprise a guide-plate having coöperating folders and creasers; the folders being in the form of oppositely located fixed walls arranged some distance apart at their rear ends and converging toward their front ends, whereby the longitudinal edges of the stay-strip fed therebetween will be gradually brought together and the stay-strip caused to assume a substantially inverted-U-shape form, and the creasers being also in the form of oppositely-located walls arranged adjacent to the front or converging ends of the folders to receive the folded stay-strip therefrom but being sufficiently close together to sharply crease said stay-strip at its longitudinal center. In the use of these folders several objectionable features have been

found to exist; one being that the creasers, when adjusted sufficiently close to make a sharp crease, offer such a resistance to the stay-strip as to interfere more or less with its easy and proper feeding by the feeding mechanism, and another being a lack of ease and readiness in effecting the adjustment of the creasers.

Having in mind the aforesaid objectionable features it has been the object of my present invention to provide an improved folder in which such features will be avoided and the folder otherwise rendered more efficient and desirable.

To this end the invention consists in the novel features of construction and combinations of parts as hereinafter set forth in detail and pointed out in the appended claims.

Referring now to the accompanying drawings forming part of this specification: Figure 1 is a plan view of a folder embodying my invention, with a piece of stay-strip extending through the same. Figure 2 is a side elevation of the same. Figure 3 is a front end elevation, and Figure 4 is a detail bottom plan.

As the folder is preferably adapted to be detachably connected to the box-staying machine on which it is used, it is shown in the present case as comprising an attaching bracket 1 on which the several other parts of the folder are carried. Attached to the top of said bracket 1 is a folder guide-plate 2 having at its rear end an upturned portion 3 provided with a guide-opening 4 through which the stay-strip *s* is adapted to be entered onto the guide-plate.

Located on the guide-plate in advance of the opening 4 are the two oppositely located folders 5, 5, which are shown as detachably and pivotally connected to the guide-plate by pivot-screws 6. These folders are arranged in the usual manner with their rear ends some distance apart and converging toward their front ends whereby, as hereinbefore mentioned, the longitudinal edges of the stay-strip fed therebetween will be gradually brought together and the stay-

strip caused to assume a substantially inverted-U-shape form as shown. Heretofore these folders have been made integral with the guide-plate and, being usually formed of brass, have become worn through by the continuous contact therewith of the sharp edges of the stay-strip in being fed or drawn through the folder, in which event the folder as a whole has been rendered useless. By making the folders separately, however, and detachably connecting them to the guide-plate, enables such parts to be readily replaced after becoming unduly worn and so permits the indefinite use of the folder.

Attached to the folders 5, 5, adjacent to their front or converging ends and in position opposite each other are two screw-studs 7, 7, having journaled thereon revoluble rollers 8, 8, which constitute the creasers for acting on the folded stay-strip and centrally creasing the same as it is fed forward from between the folders. These revoluble creasers, by reason of having a rolling contact with the stay-strip, obviously offer much less resistance to said strip than would stationary or non-revoluble creasers, and also operate to effect a sharper crease of the strip and with less liability of damage thereto.

The folders 5, 5, being pivoted to the guide-plate are capable of a lateral movement at their front or creaser-carrying ends for the purpose of permitting a like movement or adjustment of the creasers, which adjustment is desirable for the purpose of effecting the ready and convenient initial insertion of the stay-strip therebetween and also for the purpose of causing the cooperating creasers to act with the desired creasing pressure upon the interposed stay-strip.

A spring 9 attached to the under side of the guide-plate 2 and having two arms 9', 9', engaging studs 10, 10, at the under side of the creaser-carrying ends of the folders 5, 5, operates to yieldingly hold the folders and supported creasers in their normal operative positions; and as a simple, effective, and readily operated means for separating or moving apart the creasers for the purpose of varying the space therebetween, I have provided an adjusting cam-lever 11 which is pivotally mounted on one of the creaser pivot-studs 7 for engagement with the pivot stud of the opposing creaser; the change in position of the creasers as effected by this adjusting lever being indicated by the full and dotted lines in Fig. 1. The cam surface 12 of the adjusting lever may have any desired form for engagement with the cooperating pivot stud, but preferably and as shown in the drawings, it is formed with a series of notches in order to assure a more positive holding of the engaged parts in adjusted position under the action of the spring 9.

Arranged transversely above the folders and adjacent to the creasers is a guide 14 which is adapted to engage the upper or folded edge of the stay-strip to prevent its rising or working upward from between the said folder and creaser devices. This guide is also preferably a revoluble one made in the form of a roller mounted on a stud 15 projecting from a head or block 16 which is adjustably mounted on a spindle 17 rising from the bracket 1 and adapted to be yieldingly held in adjusted operative position by means of the usual adjusting-nut 18 and interposed coiled spring 19.

What I claim is:

1. A device of the character described comprising a guide-plate, and two laterally-adjustable convergingly-arranged cooperating folders on said guide-plate carrying two cooperating creasers adjacent to their point of convergence.

2. A device of the character described comprising a guide-plate, and two laterally-adjustable convergingly-arranged cooperating folders on said guide-plate carrying two revoluble cooperating creasers adjacent to their point of convergence.

3. A device of the character described comprising a guide-plate, and two laterally-adjustable convergingly-arranged cooperating folders pivoted to said guide-plate and carrying two cooperating creasers adjacent to their point of convergence.

4. A device of the character described comprising a guide-plate, two laterally-movable convergingly-arranged cooperating folders on said guide-plate carrying two cooperating creasers adjacent to their point of convergence, means yieldingly forcing the creaser-carrying ends of the folders toward each other, and adjusting means for separating or moving apart said creaser-carrying ends of the folders.

5. A device of the character described comprising a guide-plate, two convergingly-arranged cooperating folders pivoted to said guide-plate and carrying two revoluble cooperating creasers adjacent to their point of convergence, means yieldingly forcing the creaser-carrying ends of the folders toward each other, and an adjusting lever for separating or moving apart said creaser-carrying ends of the folders.

6. A device of the character described comprising a guide-plate, two laterally-adjustable convergingly-arranged cooperating folders on said guide-plate carrying two cooperating creasers adjacent to their point of convergence, and a guide arranged transversely above said folders adjacent to the creasers.

7. A device of the character described comprising a guide-plate, two laterally-adjustable convergingly-arranged cooperating

5 folders on said guide-plate carrying two revoluble coöperating creasers adjacent to their point of convergence, and a revoluble guide arranged transversely above said folders adjacent to the creasers.

8. A device of the character described comprising a guide-plate, and two laterally-adjustable convergingly-arranged coöperating folders detachably connected to said guide-

plate and carrying two coöperating creasers 10 adjacent to their point of convergence.

Signed at Rochester, in the county of Monroe and State of New York, this 9th day of November, A. D. 1906.

HENRY DE SMITH.

Witnesses:

F. K. KNOWLTON,
N. P. SANFORD.