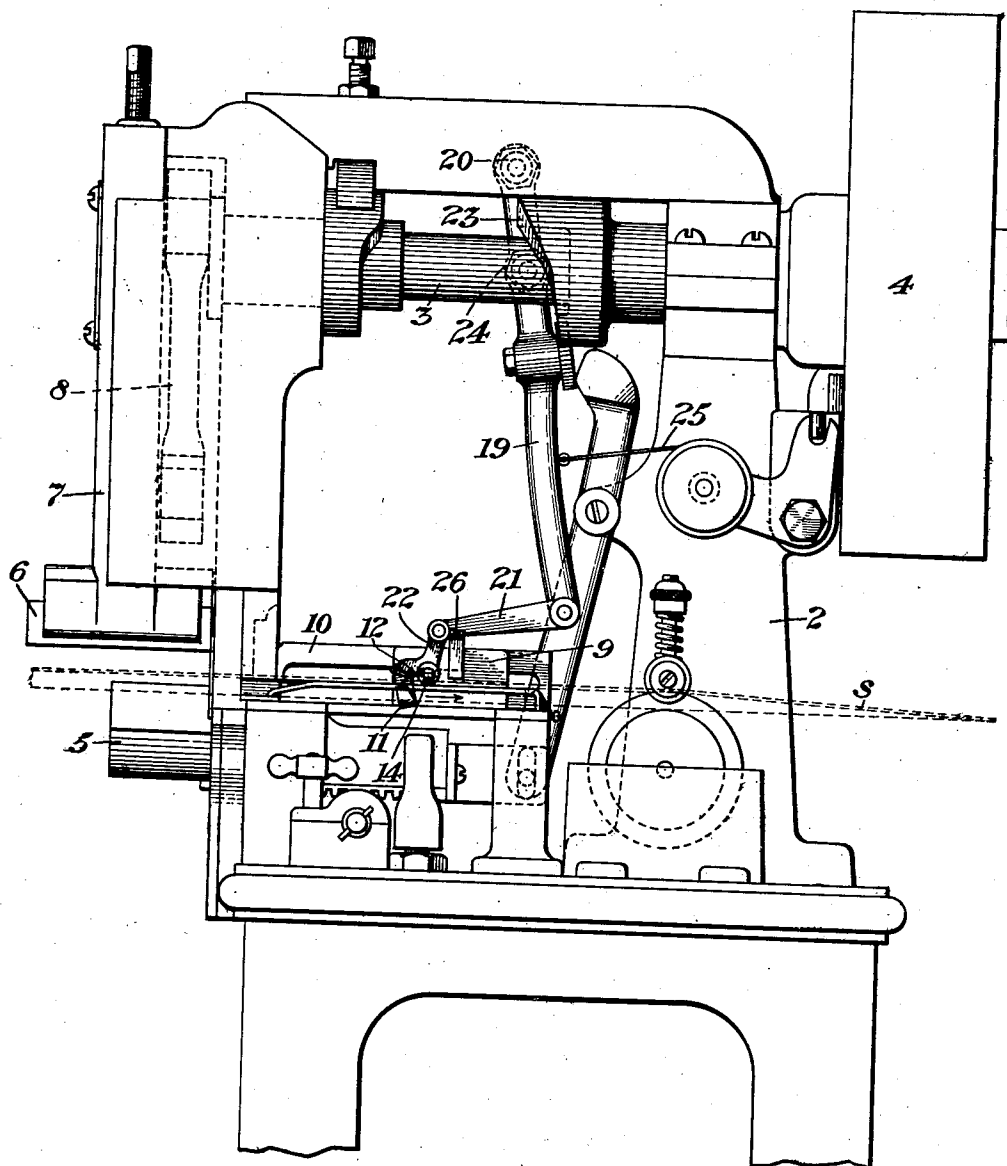


H. DE SMITH.
FEEDING DEVICE FOR STAY APPLYING MACHINES.
APPLICATION FILED JULY 24, 1916.

1,305,342.

Patented June 3, 1919.
2 SHEETS—SHEET 1.

Fig. 1



WITNESS
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Fig. 2

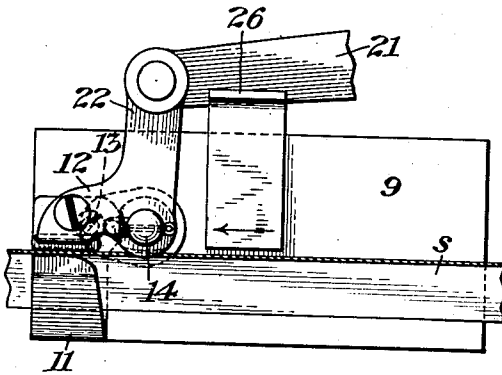


Fig. 3

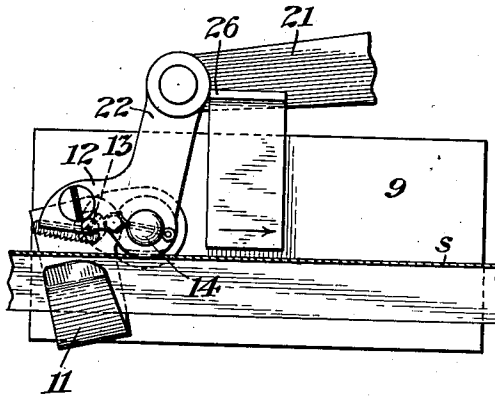


Fig. 6

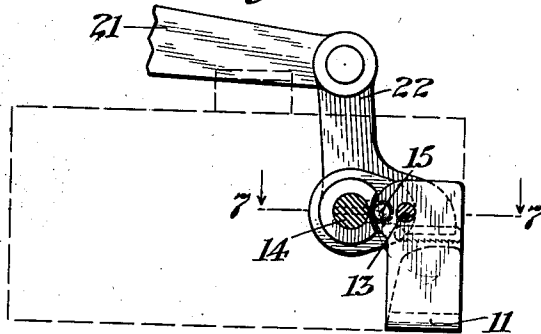


Fig. 4

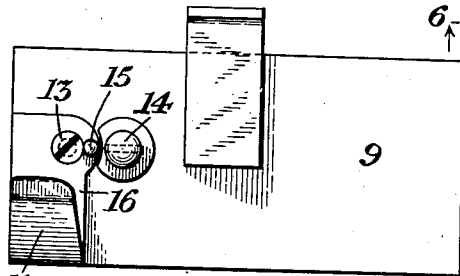


Fig. 7

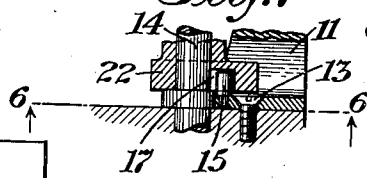
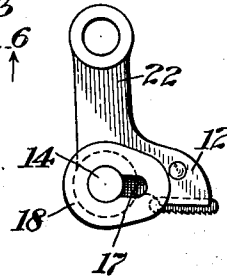


Fig. 5



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UNITED STATES PATENT OFFICE.

HENRY DE SMITH, OF ROCHESTER, NEW YORK, ASSIGNOR TO M. D. KNOWLTON COMPANY, OF ROCHESTER, NEW YORK, A CORPORATION OF NEW YORK.

FEEDING DEVICE FOR STAY-APPLYING MACHINES.

1,305,342.

Specification of Letters Patent.

Patented June 3, 1919.

Application filed July 24, 1916. Serial No. 110,934.

To all whom it may concern:

Be it known that I, HENRY DE SMITH, a 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 Feeding Devices for Stay-Appling Machines, of which the following is a specification.

My invention relates to that class of machines adapted for applying stays or reinforcing strips to the corner joints of boxes made of paperboard or like material, in which are embodied stay-strip applying means and stay-strip feeding means; the said feeding means being operative to feed a stay-strip from a supply roll to said applying means to be operated upon thereby in usual and well known manner.

The feeding means in most common use in this class of machines comprise a reciprocating strip-engaging device and means for operating the same in a manner whereby it will be caused on its forward feeding stroke to engage and carry forward the strip, and then become released from said strip at the limit of its forward stroke so as to move backwardly without producing any corresponding backward movement of the strip. Such feeding device comprises a carrier having mounted thereon two cooperating gripping members arranged to permit of the passage of the stay-strip therebetween, one of which members is stationary with respect to the carrier and the other pivoted for movement to and from a gripping position relative to said stationary member. Connected with this movable gripping member is an actuating means which, in the operation of the machine, first rocks said member into gripping engagement with the strip, and then, by a continued movement, imparts a forward stroke to the complete feed device. Such forward stroke of the feed device determines the forward feeding of the stay-strip. As the movement of the pivoted gripping member relative to the lower cooperating member is relatively slight, however, it sometimes happens in the rapid operation of the machine that said pivoted member does not become entirely released from the strip at the commencement of its backward stroke, in which event it pulls the strip backwardly with it a greater or less distance. This of course means short and irregular feeding. Because of this, it has been the object of my

invention to provide means for assuring the complete release of the gripping members from the strip at the end of the forward or feed stroke of the same. This object I accomplish by means of my improved feed device as illustrated in the accompanying drawings, in which:—

Figure 1 is a side elevation of part of a stay-applyng machine provided with my invention.

Fig. 2 is an enlarged view of the feed device removed from its connection with the machine and showing the gripping members in closed strip-engaging position.

Fig. 3 is a similar view showing the gripping members in open strip-releasing position.

Fig. 4 is a view corresponding to Fig. 2, with the upper gripping member removed from its connection with the feed carrier plate.

Fig. 5 is a view of the removed upper gripping member, looking at that side thereof opposite that shown in Fig. 2.

Fig. 6 is a sectional elevation showing the gripping members from that side thereof opposite that shown in Fig. 2, the section being taken on the line 6—6 of Fig. 7, and

Fig. 7 is a horizontal section taken on the line 7—7 of Fig. 6, showing the operative connection between the two gripping members.

Similar reference characters indicate like parts in the several figures of the drawings.

The machine here shown as provided with my invention is a "stayer" of well known construction and operation, and therefore will be only briefly described herein with reference to those parts other than the feed device.

The several parts constituting the machine are mounted upon a suitable supporting frame, indicated generally by the reference numeral 2. In the upper part of this frame is journaled a drive shaft 3 having at its rear end a clutch-controlled drive pulley 4.

At the front end of the machine is the stay-applyng means, comprising two cooperating presser dies, the lower of which, indicated at 5, is normally stationary and adapted to support a box-corner, while the upper one, indicated at 6, is vertically movable and adapted to press a stay-strip upon the box-corner on said lower die. The mov-

able die 6 is mounted in a sliding head 7 which is actuated from a crank-pin on the drive shaft 3 through the medium of a pitman 8, in usual manner.

5 In the operation of the machine, the stay-strip, indicated at *s*, is adapted to be fed from a supply reel (not shown) to a position between said presser dies, by a suitable feed device. This feed device comprises a
10 reciprocatory carrier plate 9 slidably connected with a stationary guide plate 10 and having connected therewith two coöperating gripping members, 11 and 12. Heretofore one of these members—the lower one—has
15 been stationary with respect to the carrier, and the other has been pivoted for movement to and from a gripping position relative to said stationary one. In accordance with my present invention, both members
20 are pivoted to the carrier and are operated for simultaneous movement, first, in a direction toward each other at the commencement of the feeding stroke to engage the interposed strip, as shown in Fig. 2, and
25 next, in a direction away from each other at the completion of the feeding stroke to release the strip, as shown in Fig. 3. In this way the gripping members will be effectively released from the strip at the end
30 of each feed stroke.

The gripping members may be adapted for operation in this described manner in any suitable way. As here shown, the lower
35 and upper members are mounted on pivots 13 and 14 respectively, attached to the carrier 9, and are operatively connected by means of a crank-pin 15 on the shank 16 of the lower member engaging within a slot 17 in the hub 18 of the upper member, where-
40 by movement of one member will effect a corresponding movement of the other member in a direction toward and from each other.

These gripping members may be operated
45 in the manner described by any suitable means. As here shown, they are operated by means of a lever 19 which is pivoted at its upper end to the frame at 20, and at its lower end is connected through a link 21
50 with a lever arm 22 of the upper member 12. This lever 19 is given its forward throw by a cam 23 on the shaft 2 engaging a roll 24 thereon, and is given its return throw by a connecting spring 25. Upon the forward
55 throw of the lever 19, the connecting gripping members are first brought into gripping engagement with the interposed strip, after which the continued movement of the lever effects an advance of the feed
60 device and engaged strip. After the lever

has swung forward a predetermined distance, it is then retracted, thereby operating to first separate the gripping members from gripping engagement with the strip by a simultaneous movement of the same in a
65 direction away from each other, as shown in Fig. 3, following which and after the lever arm 22 of the upper member has been brought into contact with the stop projection 26 on the carrier 9, the continued back-
70 ward or return swing of the lever 19 will return the feed device to its starting position.

What I claim is:—

1. In a machine of the character specified,
75 the combination with stay-strip applying means, of feeding means for feeding predetermined lengths of a continuous stay-strip to said applying means, comprising a reciprocating carrier movable in a direction
80 lengthwise of the strip, an upper gripping member pivoted to the carrier, a lower gripping member pivoted to the carrier in advance of the pivot of the first mentioned member, the gripping portion of the lower
85 gripping member being in advance of the pivot point of said member and a pin connection between said gripping members, said connection being to the rear of the pivot of the lower gripping member, where-
90 by movement imparted to one of the gripping members will cause the movement of the other.

2. In a machine of the character specified,
95 the combination with stay-strip applying means, of feeding means for feeding predetermined lengths of a continuous stay-strip to said applying means, comprising a reciprocating carrier, a pair of gripping
100 members pivoted to said carrier, one of said gripping members having a slot therein remote from its pivot point and the other of said gripping members having a pin thereon remote from its pivot point and engaged in the slot of the first mentioned
105 member, whereby movement imparted to one of said members will cause the movement of the other, and means on the carrier for limiting the separating movement of the gripping members to relieve the pin and slot connection between the two from strain during
110 the retrograde movement of the carrier.

Signed at Rochester, in the county of Monroe, and State of New York, this 10th day of July, A. D. 1916.

HENRY DE SMITH.

Witnesses:

THOS. D. PATTON,
HUBERT J. MARTIN.