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ENVELOPE STACKING ATTACHMENT FOR PRINTING PRESSES

Filed Feb. 16, 1924

Fig. 1

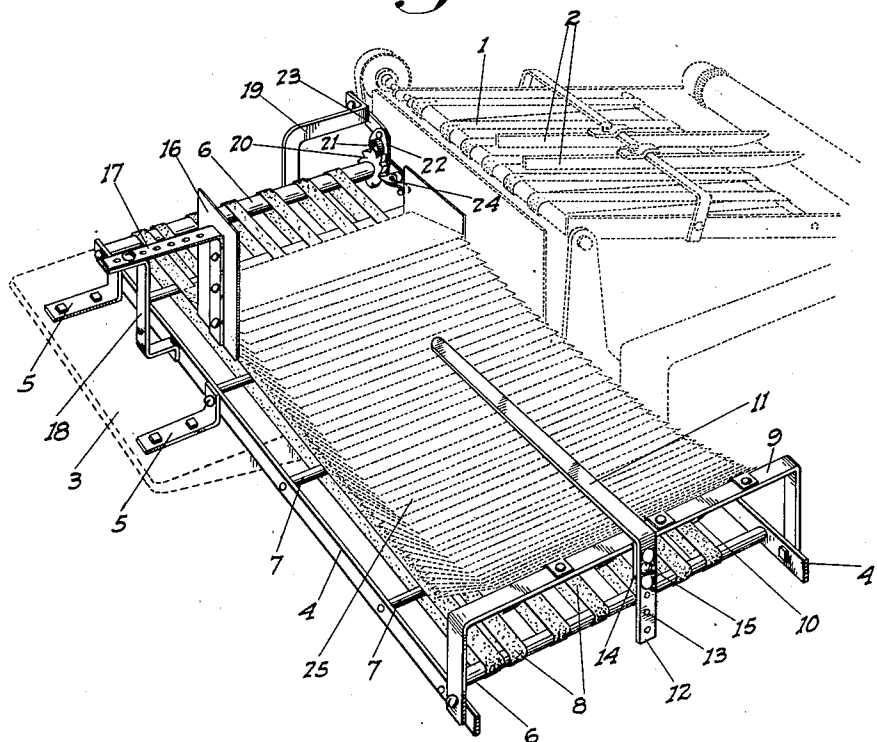
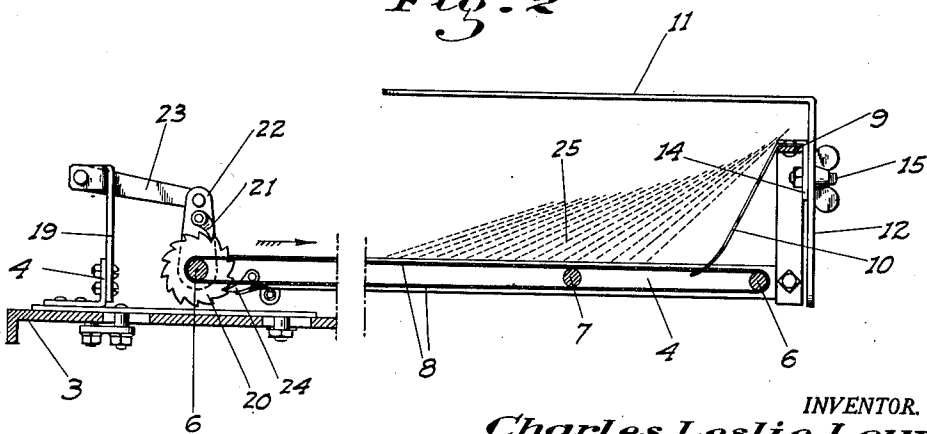


Fig. 2



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ENVELOPE-STACKING ATTACHMENT FOR PRINTING PRESSES.

Application filed February 16, 1924. Serial No. 693,242.

To all whom it may concern:

Be it known that I, CHARLES L. Low, a citizen of the United States, residing at Fresno, county of Fresno, State of California, have invented certain new and useful Improvements in Envelope-Stacking Attachments for Printing Presses; and I do declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form a part of this application.

This invention relates to improvements in printing press equipment, and particularly to a device in the form of an attachment which may be removably applied to the jogger frame or table of a printing press, for stacking envelopes and similar articles as they come from the press.

The principal object of my invention is to provide a device of this character so constructed that a goodly number of envelopes will be automatically stacked in neat order in a horizontal row, with the envelopes disposed in substantially vertical alinement.

Comparatively few envelopes will stand being placed in a vertical pile, as they are when allowed to stack up on the ordinary jogger frame, without tipping over, as is well known to anyone who has had to handle envelopes.

Consequently, the press must be stopped every time a relatively few envelopes have been run through, to remove the stacked envelopes from the jogger frame before the pile topples over and becomes a disorganized mass.

The use of my improved attachment obviates the above troubles, and may be easily made to handle and stack probably ten times the number of envelopes than can be left to pile up of themselves on the jogger frame, without any attention on the part of the operator being necessary during the stacking operation.

Another object is to arrange for an automatic jogging movement being imparted to the envelopes on the stacker, and to construct the mechanism causing such movement so that it may readily be connected to the standard jogging mechanism of the press.

A further object of the invention is to produce a simple and inexpensive device and

yet one which will be exceedingly effective for the purpose for which it is designed.

These objects I accomplish by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claims.

In the drawings similar characters of reference indicate corresponding parts in the several views:

Fig. 1 is a perspective view of my improved stacker, showing the same installed in connection with a printing press.

Fig. 2 is a longitudinal section of the device, fore-shortened.

Referring now more particularly to the characters of reference on the drawings, the numeral 1 denotes the conveyor of a printing press, onto which the printed envelopes pass from the press, in longitudinal alinement and single file, being guided between fingers 2 mounted in connection with the conveyor.

Beyond and somewhat below the conveyor is the jogger frame or table 3 of the press, having a jogger arm 4 projecting thereabove and arranged for intermittent reciprocatory movement in a plane at right angles to the longitudinal plane of the conveyor. Such movement is imparted to said arm by any suitable jogging mechanism, which forms no part of my invention and which is found in one form or another on all printing presses of this general character.

My envelope stacking attachment is mounted on the frame 3, and is constructed as follows:

Rigid and horizontally spaced and extending bars 4 form the frame of my attachment, these bars extending beyond the frame 3 on one side and lying in a plane transversely of the longitudinal plane of the conveyor 1. This frame 4 is removably mounted on the frame 3 by means of brackets 5 which are removably secured onto the frame 3 by bolts or other suitable means.

In the frame members 4 adjacent the ends thereof and extending therebetween are rollers 6, with intermediate rollers 7 at suitable intervals between said end rollers.

A plurality of endless and transversely spaced belts 8 pass about the rollers 6, with the intermediate rollers 7 between the upper and lower runs of the belts, to prevent un-

due sag of the upper runs with any weight thereon.

This construction so far is similar to that of the conveyor 1, and forms in fact a conveyor, extending in a horizontal plane at right angles to the conveyor 1.

At the outer or head end of the stacker conveyor (which is that end beyond or outwardly of the frame 3) is a cross bar 9, secured on the members 4 but lying a certain distance above the same and the conveyor-belts.

Secured on said bar and extending downwardly and at a forward angle are guide fingers 10, suitably spaced apart and located so as to pass between certain of the belts 8, the fingers projecting below the upper runs of the belts a short distance.

A horizontal arm or bar 11 extends forwardly of the cross bar 9 above the same and centrally of the length thereof. Said bar is made vertically adjustable by means of a vertical arm 12 provided therewith depending to the rear of the bar 9, and having a plurality of spaced orifices 13. This arm abuts against a lug or similar member 14 depending from the bar 9, said lug having a bolt or screw 15 passable through any of the holes 13.

On the opposite side of the stacker-conveyor from the conveyor 1 and in alinement with the guide fingers 2 is a vertical plate 16, facing said conveyor 1. This plate is mounted for movement to and from the latter in a horizontal plane by means of a horizontal arm 17 projecting from the back thereof and adjustably fixed on a bracket 18 projecting up from the adjacent frame-bar 4.

Suitable connections are provided between the jogger arm 4 and the roller 6 adjacent thereto to intermittently rotate said roller in a direction to cause the upper runs of the belts to travel toward the other roller 6 at the outer end of the stacker-conveyor.

In the present case to accomplish this I show an arm 19 rigidly secured to and projecting up from the jogger arm 4 which lies beyond the adjacent end of the stacker conveyor.

Fixed in connection with the adjacent roller 6 is a ratchet wheel 20 engaged by a pawl 21 mounted on an arm 22 turnably mounted axially of said roller, a link 23 connecting the upper ends of arms 22 and 19.

To prevent any possible back movement of the roller 6 taking place while the pawl 21 is being retracted, an additional pawl 24 may if necessary be provided to engage the ratchet wheel 20, said last named pawl being mounted on the adjacent frame member 4.

In operation the envelopes 25 are moved along by the conveyor 1 one by one and deposited on the stacker conveyor in aline-

ment with the guide fingers 2 and plate 16, the function of which is to act as a stop for the adjacent edges of the envelopes and insure that all such edges are in common alinement.

As each envelope is deposited on the stacker, the jogger mechanism operates to rotate the roller 6 a certain amount and cause the belts to travel a corresponding distance, so that the next envelope deposited on the stacker will fall on top of the first one but will only overlap the same part way, so that each envelope actually rests on the belts along one edge.

The envelopes, as the stacker fills up, will maintain their relative positions until the foremost envelope reaches the lower ends of the fingers 10 at the outer end of the stacker.

Then, since the friction of contact of the edge of the envelope with the smooth surface of the fingers is less than the friction of contact of the other edge of the envelope with the belts, said envelope will be forced with the recurring jogging movements, to climb up the fingers 10 until it lies there-against for its entire depth, or in a substantially vertical position.

Each subsequent envelope will in turn assume the same position relative to the envelope ahead, until the stacker is filled to capacity, when the stacked envelopes may be easily removed.

The overhanging bar 12 prevents any envelopes from being possibly squeezed upwardly and out of place by the pressure of the envelopes therebehind, said bar being set at a level such that when the envelopes are in their raised positions the bar will just clear the upper edges of the envelopes.

From the foregoing description it will be readily seen that I have produced such a device as substantially fulfills the objects of the invention as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations from such detail may be resorted to as do not form a departure from the spirit of the invention, as defined by the appended claims.

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

1. An envelope stacker for printing presses including an intermittently driven conveyor positioned to receive the envelopes from the press-conveyor in single file, and fixed fingers sloping upwardly and forwardly from the conveyor adjacent the head end thereof, and a vertically adjustable and horizontal bar projecting over and above the stacker conveyor longitudinally thereof.

2. An envelope stacker for printing presses including an intermittently driven

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conveyor positioned at right angles to the press-conveyor and arranged to receive the envelopes in single file therefrom, means included with the stacker for causing the envelopes as they are fed thereon from press conveyor to form a horizontal stack with the envelopes in a substantially upright position, and a stop plate on the stacker in opposite alinement with said press conveyor and adjustable to and from the same whereby to enable envelopes of different lengths being stacked and insuring that their edges will lie in common alinement.

3. An envelope stacker for printing presses including an intermittently driven conveyor positioned to receive the envelopes from the press-conveyor flat and in a single file, means at the head end of the stacker conveyor for causing the envelopes as they approach said end to assume a substantially upright position one against the other, and means on the stacker acting to prevent the envelopes at the head of the stacker from being forced upwardly from the stacker with the pressure of the envelopes to the rear.

4. An envelope stacker for printing presses including an intermittently driven conveyor positioned to receive the envelopes from the press-conveyor flat and in single file, means at the head end of the stacker conveyor for causing the envelopes as they

approach said end to assume a substantially upright position one against the other, and a horizontal member overhanging the stacker conveyor from the head end thereof and located a certain distance thereabove.

5. An envelope stacker for a printing press having a conveyor for the printed envelopes and a vertical jogger arm beyond the conveyor and movable transversely of the same, comprising a conveyor mounted on the press beyond the conveyor thereof and at right angles thereto, a roller over which one end of said stacker conveyor passes, a ratchet wheel on said roller, a vertical arm turnably mounted axially of the wheel, a pawl on said arm engaging the wheel, and a connection between said arm and the jogger arm.

6. An envelope stacker for a printing press having a conveyor for the printed envelopes and a vertical jogger arm beyond the conveyor and movable transversely of the same, comprising a conveyor mounted on the press beyond the conveyor thereof and at right angles thereto, a roller over which one end of said stacker conveyor passes, and means between the jogger arm and roller for causing the latter to be intermittently rotated with the jogging of the arm.

In testimony whereof I affix my signature.

CHARLES L. LOW.