May 3, 1927. 1,627,333

F. E. JAMISON

ATTACHMENT FOR PAPER FOLDING MACHINES

Filed March 8, 1926 2 Sheets-Sheet 1

Fig. 1

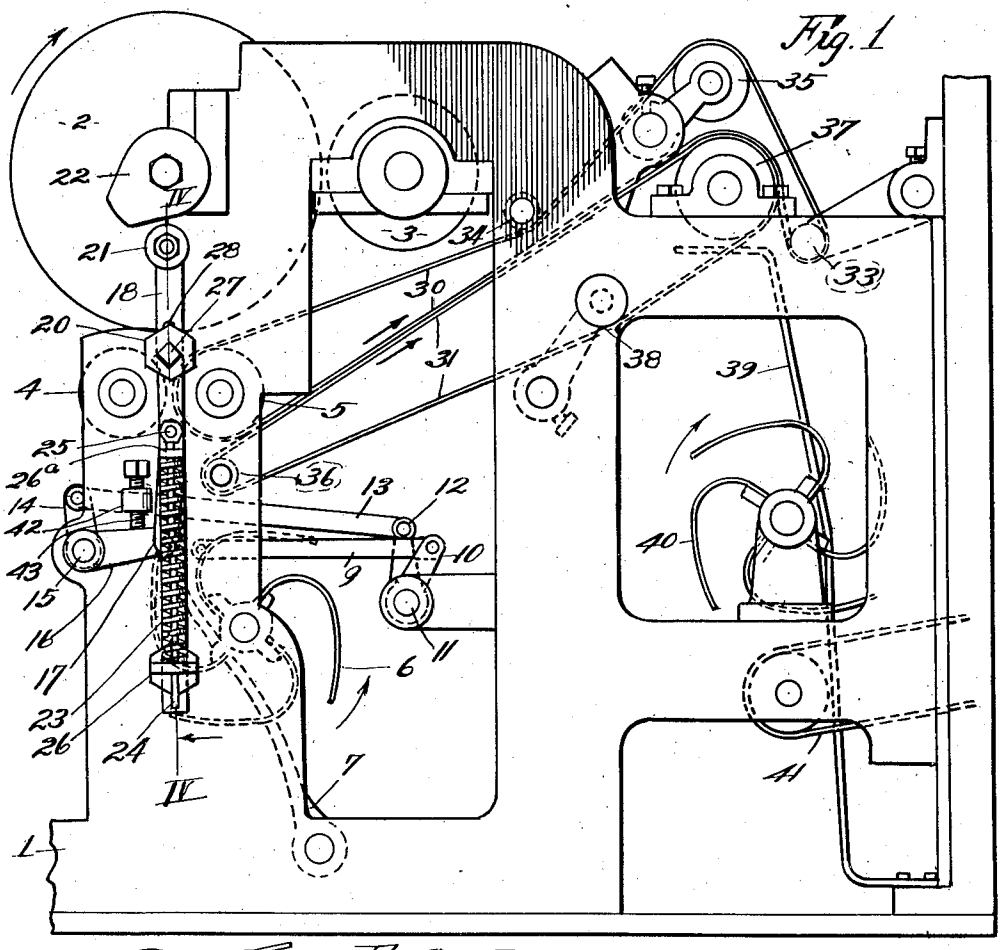


Fig. 3

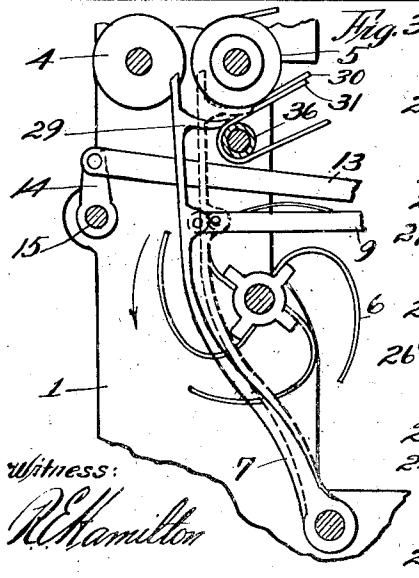
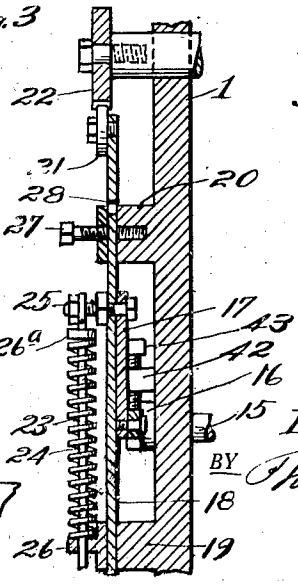


Fig. 4



Witness:
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INVENTOR.
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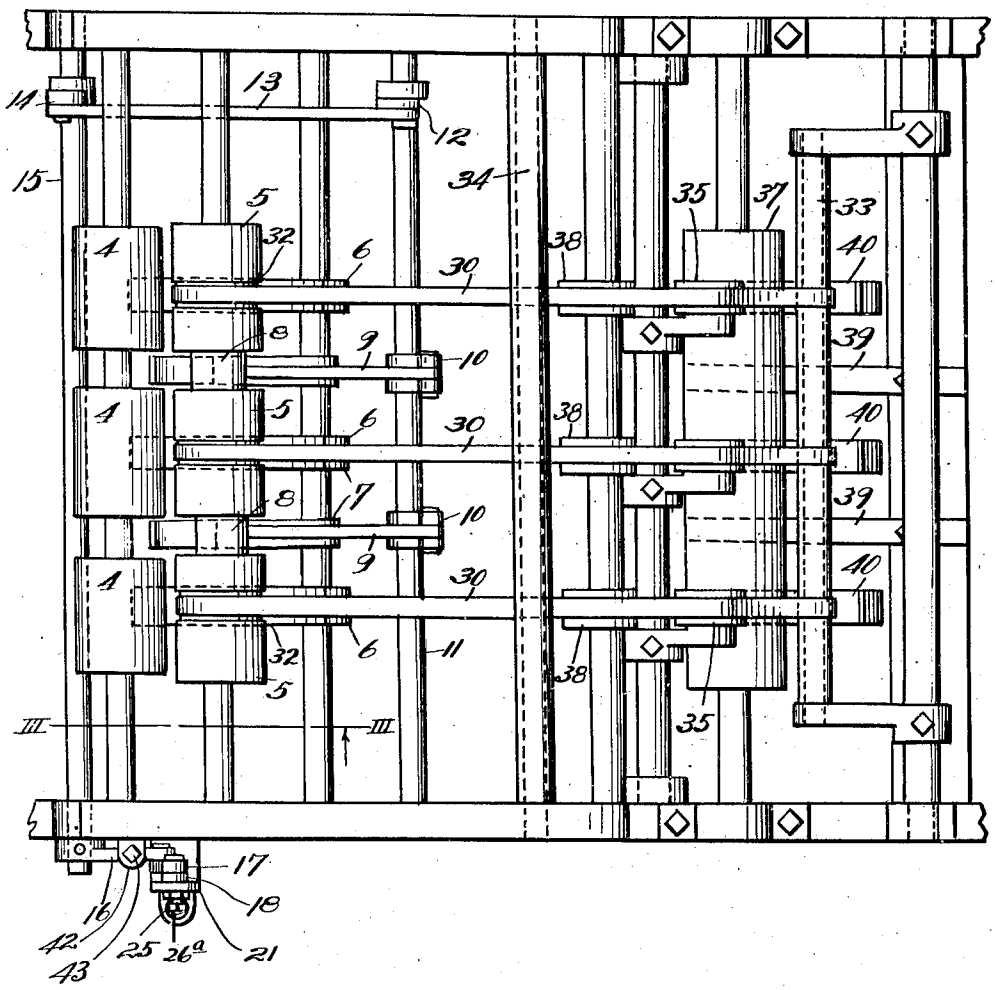
May 3, 1927. 1,627,333

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ATTACHMENT FOR PAPER FOLDING MACHINES

Filed March 8, 1926 2 Sheets-Sheet 2

Fig. 2



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Patented May 3, 1927. 1,627,333

UNITED STATES PATENT OFFICE.

FRANK E. JAMISON, OF KANSAS CITY, KANSAS.

ATTACHMENT FOR PAPER-FOLDING MACHINES.

Application filed March 8, 1926. Serial No. 93,125.

This invention relates to paper folding machines, and more especially paper folding machines of that type having a folding cylinder of size to accommodate two papers, and my object is to produce an attachment for folding machines of the character mentioned, for efficiently stacking the papers or sheets alternately in two distinct or separate places. It is desirable to accomplish the purpose mentioned as it makes provision for the printing and folding of two different papers upon one "running" of the press due to the fact that the different or alternately printed or folded papers are segregated from each other in a rapid and efficient manner. It effects a material saving in getting the presses ready for operation and in the labor cost attendant on preparing the make-ready and in the operation of the press. My special object is to provide an attachment for a folding machine of any standard type,—that shown being known in the market as the Goss type,—without making any change in the operating mechanism of the folder except to substitute for the ordinary fixed guide or switch, an oscillatory guide or switch, and the provision of the extra features or attachments for cooperation with such oscillatory guide or switch to convey every alternate sheet to and dispose it at a point different from that at which the other sheets are disposed. Another object is to provide an attachment of simple, strong, durable and inexpensive character.

With the objects named in view, the invention consists in certain novel and useful features of construction and combinations of parts as hereinafter described and claimed; and in order that it may be fully understood reference is to be had to the accompanying drawings, in which:—

Figure 1 is a fragmentary view of the folding part of a printing press, equipped with a construction embodying my invention.

Figure 2 is a top plan view of the construction shown by Figure 1, but with the folding and cutting cylinders omitted.

Figure 3 is a sectional view taken on the line III—III of Figure 2.

Figure 4 is a vertical section taken on the line IV—IV of Figure 1.

Referring to the drawings in detail, 1 indicates the frame work of the folder, 2 the customary folding cylinder for the accommodation of two papers, and 3 the customary cutting cylinder for cooperative action with respect to cylinder 2, and of one-half the circumferential area of the latter. In a regulation folder of the Goss type, the paper in folded condition is fed between rollers 2 and 3 and is automatically pinned to the former in a manner common in the art and therefore not shown or described in this connection. In the rotation of the cylinder when the opposite edges of the paper have attained the horizontal plane of the axis of the cylinder, the paper is cut by the cutting roller and a blade descends through cylinder 2 and creases the paper at its central point so as to start the folding thereof, the blade descending so as to feed the folded edge of the paper between the customary feed rollers 4 and 5 underlying the cylinder. The blade mentioned and the mechanism for operating it are conventional in paper folders and have not been illustrated or described as they form no part of the present invention.

At a suitable distance below and journaled in the sides of the frame work 1 is a rotary fly 6, the same operating in the direction indicated by the adjacent arrow, in Figure 1, through mechanism conventional and therefore not shown or described. In the conventional folder there is a fixed guiding means for directing all of the papers as they successively pass downward between feed rolls 4 and 5, to the fly 6, so that the same may either stack such papers or deposit them upon a traveling conveyor or the like, now shown. In lieu of each of such fixed guides, I have provided an oscillatory guide or switch 7, the same being pivoted in the frame work 1 and extending upward so that its upper or receiving end may stand at one side or the other of the line of travel between the feeding rolls 4 and 5. By reference to Figure 2 it will be noted that the roll 4 is of sectional character, being shown as of three sections spaced apart sufficiently to permit the upper extremities of the guides or switches to project between them when the former occupy one limit of movement. The companion roll 5 may be of similar construction, but is shown with reduced diametric portions 8 between the sections for the accommodation of the upper ends of the switches when at the other limit of operation. A link 9 pivotally connects each

switch with a crank 10 of a shaft 11 suitably journaled, and said shaft is provided at a suitable point with a crank arm 12 pivotally connected by a link 13 with a crank arm 14 of a shaft 15 journaled in the frame work. At one end, shaft 15 is equipped with a crank arm 16 pivotally connected by a link 17 with a vertical slide bar 18 mounted in suitable guides 19 and 20 of the frame work. The slide bar is equipped at its upper end with a roller 21 engaged by a cam 22 rigidly secured on the shaft of the cylinder 2, so that once in each revolution, said cam shall impart downward movement to the slide bar and thus effect operation in one direction of the switches 7. In the interval between the depression of the slide bar by the cam, the former is re-elevated by a spring 23 fitting around a rod 24 pivoted at 25 to the slide bar and extending through a guide opening 26 of guide 19, the spring bearing at its lower end upon said guide 19 and its upper end against a collar 26^a secured on rod 24, which collar, in the downward movement of the slide bar effects the compression of the spring necessary to provide for the reaction whereby the slide bar is re-elevated and the switches 7 returned to normal or initial position. Should it be desired to secure the switches against operation so that all of the papers shall be passed in the same direction, a set screw 27 is mounted in the guide 20, and the slide bar is provided with a hole 28, through which the set screw can be advanced for the purpose of holding the guide bar depressed, and therefore the roller 21 out of range of movement of the cam 22.

For the purpose of deflecting or guiding papers issuing from between the feed rollers 4 and 5 so that they shall not pass to the fly 6, each switch is provided with a laterally projecting arm 29, so that when the switches occupy the position shown by the full lines, Figure 3, the papers will be deflected laterally under roll 5, and between a pair of endless tapes or conveyors 30 and 31, the former at one end engaging reduced portions 32 of roll 5, and at their opposite ends engaging roll 33, suitably supported. At an intermediate point the upper strands or runs of tapes 30, underlie a guiding roll 34, and between the same and roll 33, and above the horizontal plane of both, said upper strands engage tensioning rollers 35.

The lower strands of tapes 30, lie flatly upon the upper strands or runs of tapes 31, which at their lower ends engage rollers 36 underlying roll 5 so that in conjunction with the adjacent portion of tapes 30, a flaring mouth will be provided for the reception of sheets deflected therein by the arms 29 of the switches. The upper ends of tapes 31 engage roller 37, and around said roller and its tapes 31, the lower strands of tapes 30 extend, the arrangement being such that sheets carried up by and between said tapes 30 and 31, are eventually carried over rollers 37 and discharged downwardly in proximity to roller 33, there being tension rollers 38 engaging tapes 31 to hold the same in stretched or taut condition. The sheets as they are discharged by said tapes are guided by a fixed guide or switch 39 into a suitably driven fly 40, and they are suitably stacked by the latter, preferably upon a suitably driven conveyor 41.

From the foregoing, it will be apparent that sheets are alternately directed by the switch 7 onto the fly 6 and between the cooperating tapes 30 and 31, the cam 22 by positive application of power swinging the switch 7, in each revolution, from one side of the line of travel between the feed rolls 4 and 5 to the other side of such line of travel, and the spring 23 reversing this position of the switch in the same revolution. The result is that the papers are alternately fed to the flies 6 and 40 with celerity and efficiency, this segregation being desirable of course only where two different papers are being printed and folded in one run of the press. To provide for take-up due to wear of parts in practically constant operation when different papers are being segregated, a lug 42 projects from the frame work and carried a stop screw 43 adjustable to limit the upward movement of arm 16.

From the above description and drawings it will be apparent that I have produced a machine which accomplishes the objects set forth as desirable in the statement of the objects of the invention, but that it is susceptible of modification in minor particulars without departing from the principle of construction and mode of operation involved or from the spirit and scope of the appended claims.

I claim:

1. The combination with a delivery mechanism, of a switch arranged to intercept the path of delivery of said mechanism, a reciprocating bar, yielding means to advance the bar in one direction, a cam driven in timed relation to the delivery mechanism to move the bar in the other direction, a connection from said bar to operate the switch, and manually operable means to maintain the bar from contact with said cam.

2. The combination with a delivery mechanism, of a switch arranged to intercept the path of delivery of said mechanism, a reciprocating bar, yielding means to advance the bar in one direction, a cam driven in timed relation to the delivery mechanism to move the bar in the opposite direction, a shaft, a connection from said shaft to the switch mechanism, a crank arm on said shaft, and a link operatively connecting said crank arm to said reciprocating bar.

3. The combination with a delivery mech-

anism, of a switch arranged to intercept the path of delivery of said mechanism, a reciprocating bar, yielding means to advance the bar in one direction, a cam driven in timed relation to the delivery mechanism to move the bar in the opposite direction, a shaft, a connection from said shaft to the switch mechanism, a crank arm on said shaft, a link operatively connecting said crank arm to said reciprocating bar, and means to limit the movement of the crank arm.

In witness whereof I hereunto affix my signature.

FRANK E. JAMISON.