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S. C. COX.

FOLDING AND WRAPPING MACHINE.

APPLICATION FILED JUNE 25, 1907.

1,045,124.

Patented Nov. 26, 1912.

2 SHEETS—SHEET 1.

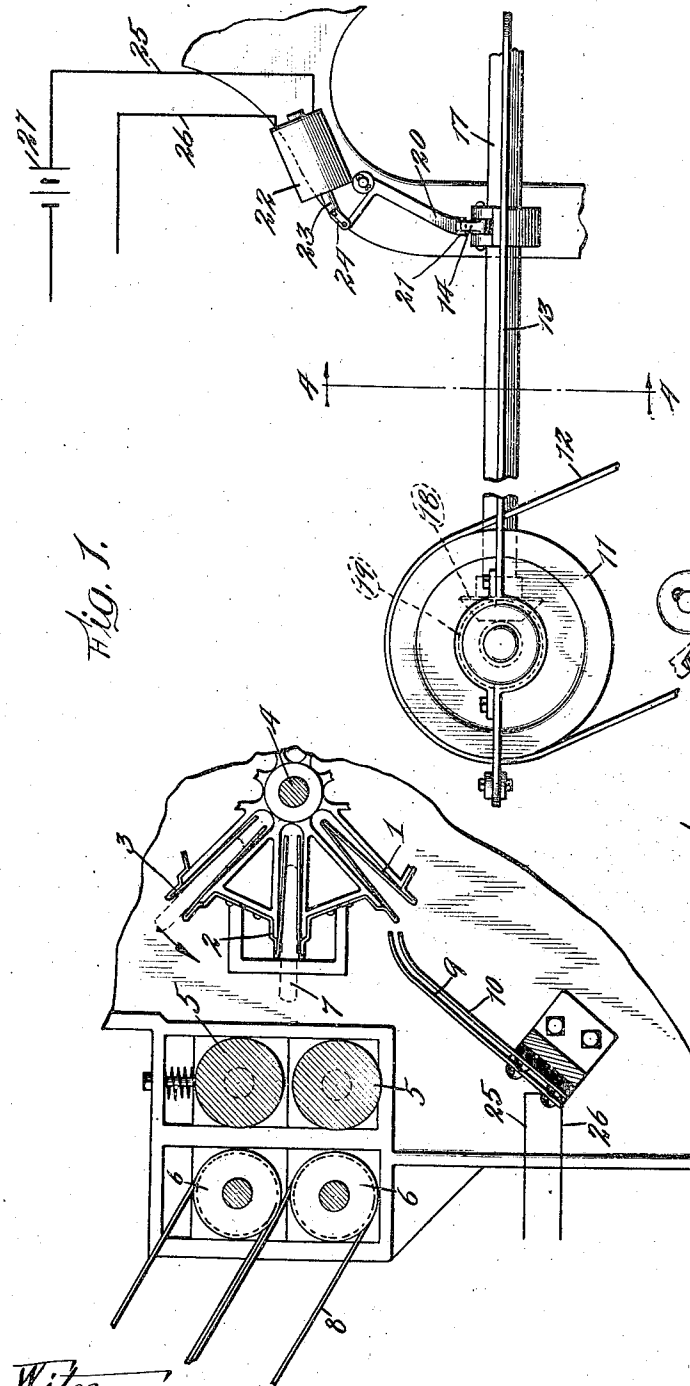


Fig. 1.

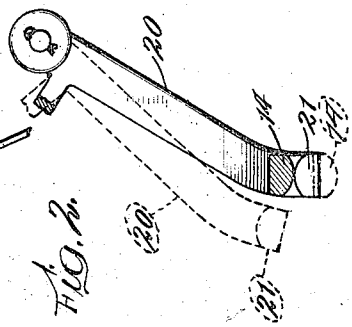


Fig. 2.

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Inventor:
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Fig. 4.

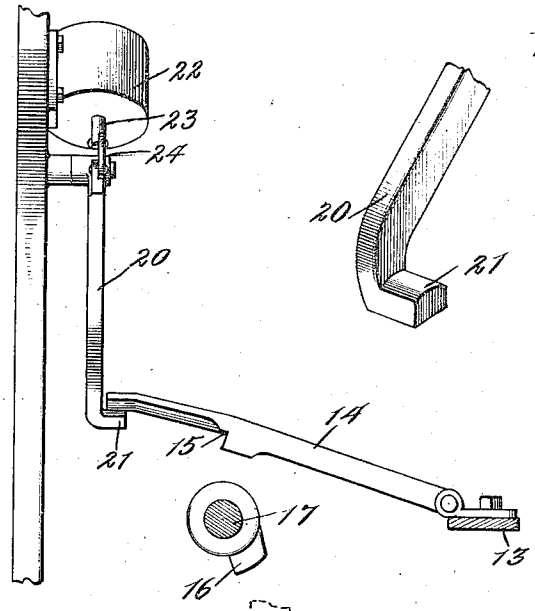


Fig. 3.

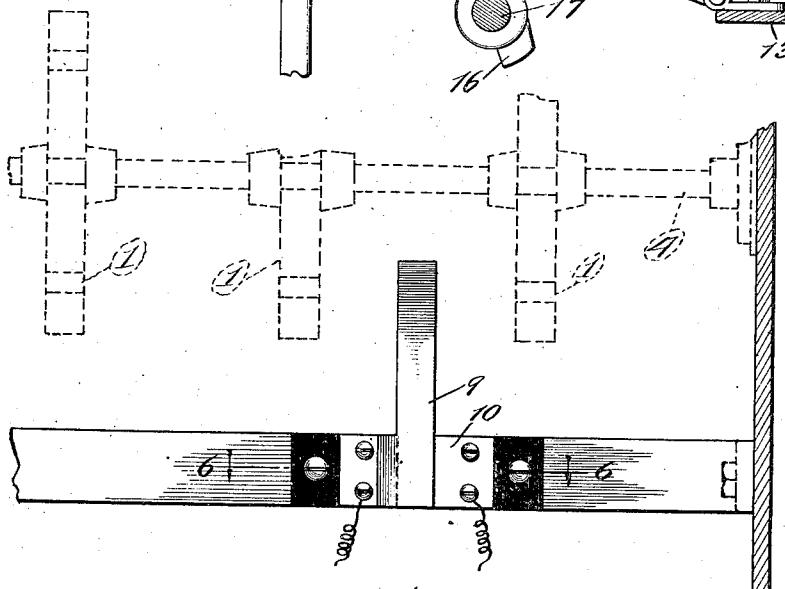
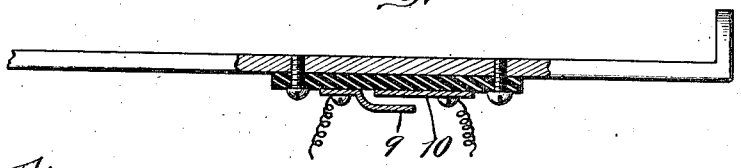


Fig. 5.

Fig. 6.



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UNITED STATES PATENT OFFICE.

SANDFORD C. COX, OF CHICAGO, ILLINOIS, ASSIGNOR TO COX MULTI-MAILER COMPANY, OF AUGUSTA, MAINE, AND NEW YORK, N. Y., A CORPORATION OF MAINE.

FOLDING AND WRAPPING MACHINE.

1,045,124. Specification of Letters Patent. Patented Nov. 26, 1912.

Application filed June 25, 1907. Serial No. 380,724.

To all whom it may concern:

Be it known that I, SANDFORD C. COX, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Folding and Wrapping Machines, of which the following is a full, clear, and exact specification.

The invention has more special reference to improvements for stopping the operation of folding and wrapping machines in the event a paper should for any cause fail to be delivered to the final delivery devices or rolls of the machine after it has been partially or substantially folded and wrapped, and it has for its primary object to provide improved agencies for effectually producing this result.

With a view to the attainment of these ends and the accomplishment of certain other objects which will hereinafter appear, the invention consists in the features of novelty which will now be described with reference to the accompanying drawings and then more particularly pointed out in the claims.

In the said drawings—Figure 1 is a side elevation, partly in vertical section and partly broken away, of that portion of a folding and wrapping machine to which these improvements are applied and which will be required for an understanding of this invention. Fig. 2 is a detail view of a trigger hereinafter described. Fig. 3 is a perspective view of the same. Fig. 4 is a detail section on the line 4—4, Fig. 1. Fig. 5 is a plan view of the circuit-closers, showing in dotted lines the relation of the paper clamps or carriers thereto. And Fig. 6 is a transverse section on the line 6—6, Fig. 5.

In the drawings there have been shown only such parts of the folding machine as are necessary for an understanding of the invention, whose object, as before intimated, is to stop the machine in the event a paper instead of being delivered properly after it is substantially folded and wrapped remains in the paper clamp or other carrier or device provided as a part of the wrapping machine for delivering it to the delivery rolls or mechanism.

In Fig. 1 of the drawings on the left is shown a part of a rotating paper clamp or carrier which constitutes the subject-matter of a co-pending application filed May 5, 1906, Serial No. 315,389, and the particular construction and operation of which is not material to the present invention. As shown, however, this carrier consists of a number of clamps 1, 2, 3, mounted like spider arms on a rotary shaft 4, which as described in said former application, is given a bodily to and fro motion with respect to the sealing and delivery rolls 5, 6 of the folding machine. It is only necessary to understand, so far as this invention is concerned, that the partially or substantially folded and wrapped paper as shown at 7, Fig. 1, is inserted into these clamps by any suitable mechanism in the folding machine and that the rotating and reciprocatory carrier or clamp moves toward the sealing and delivery rolls 5, 6, which receive the projecting end of the wrapped paper and serve to seal the flap firmly in place, and finally to deliver the paper into the grasp of delivery tapes 8, or in the absence of such tapes, the paper may of course be ejected by the roll 6 directly. In a machine of this form it sometimes happens that instead of the paper 7 being pulled out of the clamps 1, 2 or 3, it remains therein and continues around with the rotary motion of the carrier and its shaft 4 at the next step or intermittent movement of such carrier. If the machine were not stopped when that occurs some subscriber would be deprived of his paper; and the clamp carrying the remaining paper would not be able to receive another when it came into position for cooperation with the devices of the folding machine which place the papers in these clamps. Therefore, contiguous to the line of rotation of the ends of the clamps 1, 2, 3 are arranged electrical contacts 9, 10, having their ends so curved and separated, as shown in Fig. 1, that they may be closed either by the paper 7 striking the upper one 9 as the paper carrier rotates, or by the paper striking the lower one 10 as the carrier reciprocates toward the sealing rolls 5, these contacts 9, 10, as shown in Fig. 5, being disposed between the clamps 1 which are arranged at intervals apart on their shaft 4, so as not to be struck by the clamps themselves. By thus closing a circuit through the contacts 9, 10, the operation of the machine is stopped by mechanism which will now be described.

11 is a clutch of any suitable form, de-

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riving power from a belt 12 or other means, and this clutch is controlled, that is thrown into or out of action so as to operate the folding and wrapping machine and the shaft 4 with its carrier clamps 1, 2, 3 and rotating the sealing rolls 5, 6. This engaging and disengaging action of the clutch may be brought about by an ordinary lever 13, which if pulled outwardly or toward the observer as in Fig. 1, or toward the right is in Fig. 4, throws the clutch out of action and stops the machine and if moved in the opposite direction will throw the clutch into engaging position. Pivoted to this lever 13 is a finger 14, which is provided on its under side with a lug 15, arranged to be struck when finger 14 falls, by a trip 16 secured to a shaft 17, which forms a part of the operating mechanism of the machine and which derives its power by any suitable connection such as bevel gears 18, 19 with one member of the clutch 11. The finger 14 while all goes well is supported normally by a trigger 20, having a lug 21, which engages under the end of the finger 14 and holds the lug 15 out of the reach of the trip 16. This trigger 20 is controlled by a solenoid 22, whose core 23 is connected by a link 24 to the trigger 20, as clearly shown in Fig. 1, and this solenoid is in circuit by means of wires or conductors 25, 26 with a battery or other source of electricity 27 and the circuit-closers 9, 10.

Briefly stated, the operation is as follows: The clutch is held in engaging position when the extremity of the arm 14 rests upon the lug 21 of the trigger 20 and assuming the parts to be in this position, the contacts 9 and 10 will be engaged by the paper as it advances should the paper remain in the holder, and when the contacts are brought into engagement the electro-responsive device 20 will be operated to trip the trigger 20 and release the finger 14 so that the lug 15 thereon will stand in the path of movement of the trip 16 as the shaft 17 rotates. When the trip 16 engages the lug 15, the lever 13 will be shifted to move the clutches out of engaging position to stop the mechanism.

In order that the invention might be fully understood by those skilled in the art, the details of an exemplification thereof have been thus specifically described, but

What I claim as new, and desire to secure by Letters Patent, is:

1. In a device for the purpose described, the combination of means for holding a paper, means for receiving the paper therefrom, electrical contacts arranged to be engaged and closed by the paper while the paper is in the first said means and in the event it fails to reach the second said means, and means operatively related to said contacts for automatically throwing the machine out of operation when the contacts are closed.

2. In a device for the purpose described, the combination of a movable carrier for holding a folded paper, means for receiving the paper from said carrier, and means arranged in the line of movement of the paper while the latter is in the carrier and adapted to be directly engaged by the paper while the carrier is moving for automatically throwing the machine out of operation in the event the paper remains in the carrier after the time in which it should have passed to the receiving means.

3. In a device for the purpose described, the combination of a rotating carrier for containing a folded paper, means for extracting the paper therefrom, means for throwing the machine out of operation, and electrical contacts controlling the last said means arranged to be struck by a paper in the carrier should the extracting means fail to extract it.

4. In a device for the purpose described, the combination of a rotating carrier for containing a folded paper, means for extracting the paper therefrom, a clutch which when in engagement operates the folding mechanism, a power driven trip operatively connected with the clutch, a finger having means adapted to be engaged by said trip when released, a trigger for holding said finger out of engagement, and electrical means for actuating said trigger containing contacts, arranged to be struck by the paper in the carrier in the event the extracting means fails to extract it.

5. In a device for the purpose described, the combination of a paper clamp capable of a reciprocatory and oscillatory motion, means for extracting the paper from said clamp, electrical contacts arranged to be struck by the paper in the clamp as it makes its oscillatory motion and also as it makes its reciprocatory motion in the event the paper is not extracted, and means for throwing the machine out of operation operatively connected with said contacts.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 16th day of May A. D. 1907.

SANDFORD C. COX.

Witnesses:
JOHN HUNEKE,
J. TOMLINSON.