No. 772,474. PATENTED OCT. 18, 1904.

C. OWENS.

FOLDING AND WRAPPING MACHINE.

APPLICATION FILED MAY 23, 1904.

NO MODEL.

Fig. 1

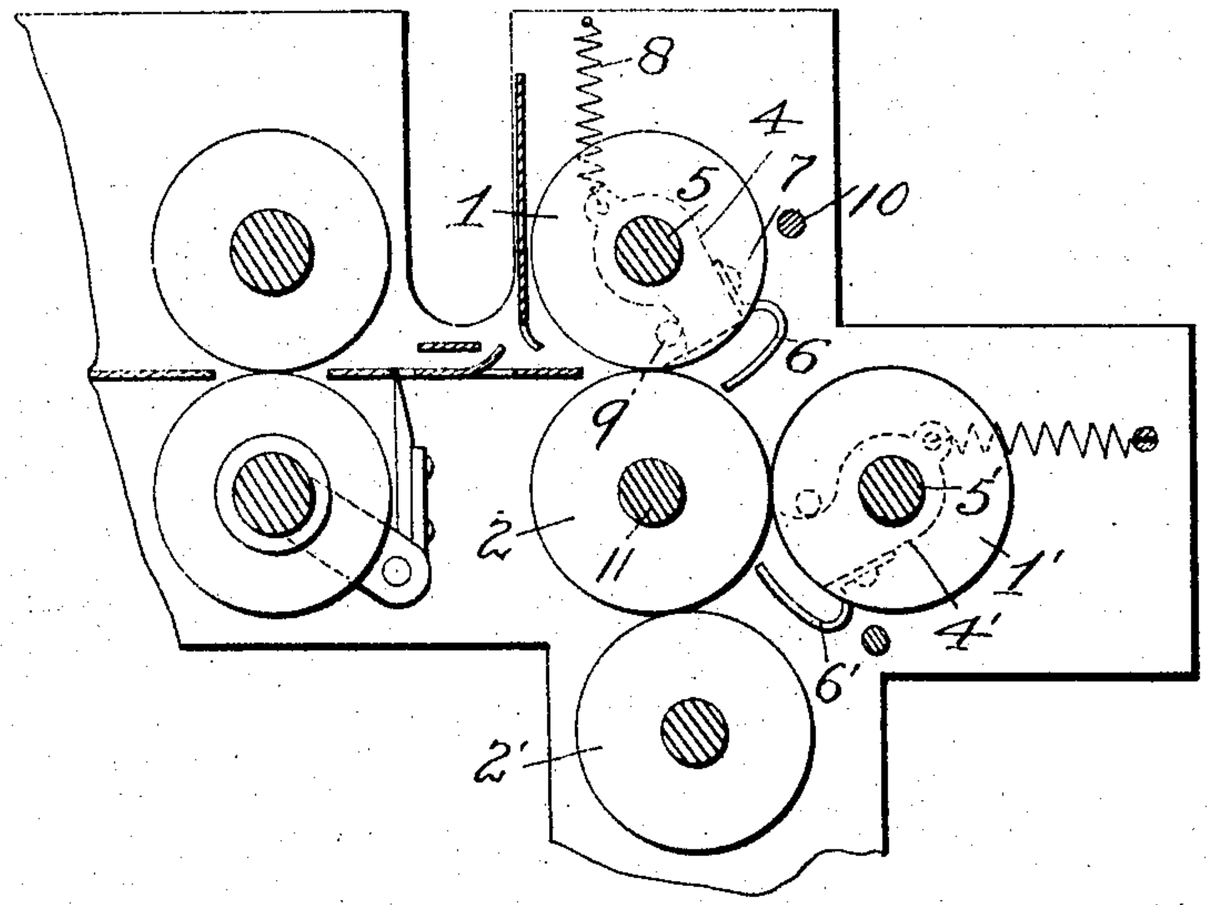
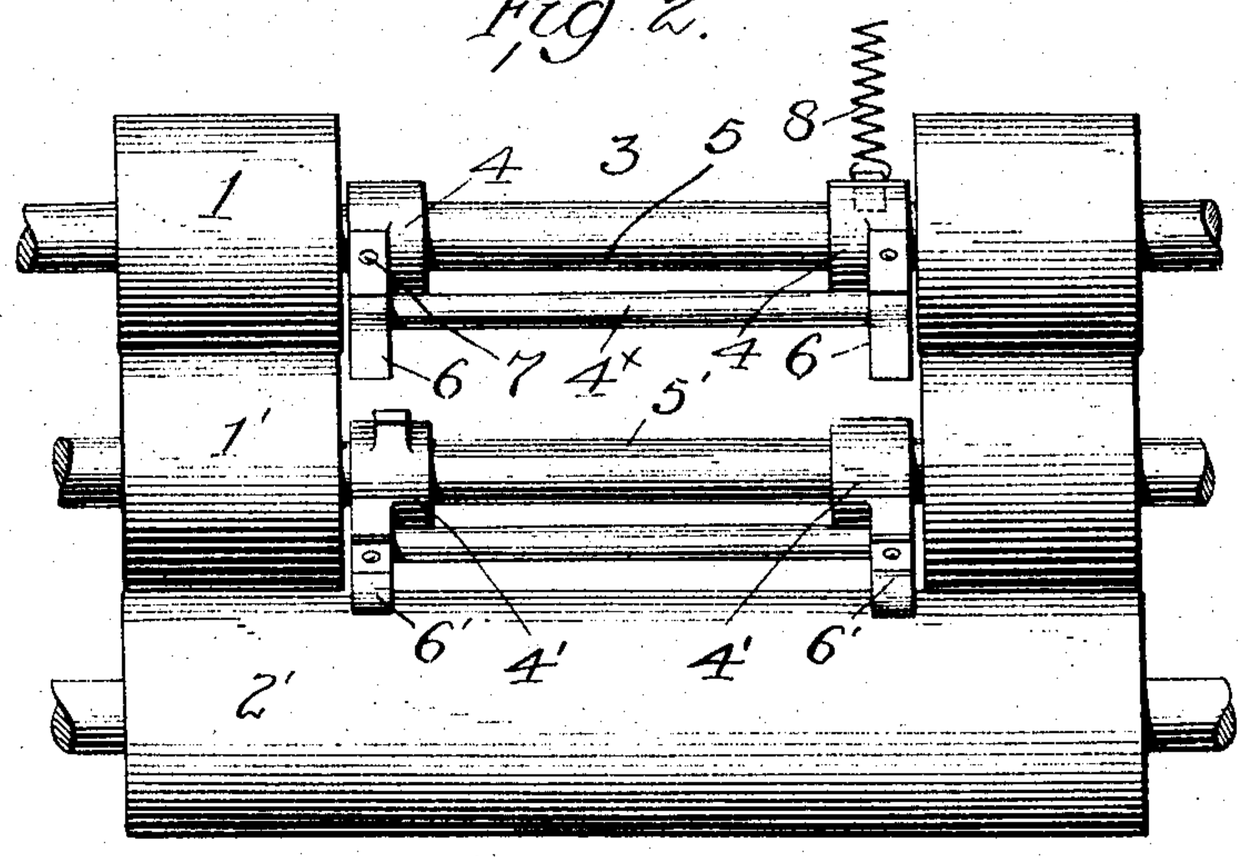


Fig. 2.



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No. 772,474. Patented October 18, 1904.

UNITED STATES PATENT OFFICE.

CHARLES OWENS, OF CHATTANOOGA, TENNESSEE.

FOLDING AND WRAPPING MACHINE.

SPECIFICATION forming part of Letters Patent No. 772,474, dated October 18, 1904.

Application filed May 23, 1904. Serial No. 209,393. (No model.)

To all whom it may concern:

Be it known that I, CHARLES OWENS, a citizen of the United States, residing at Chattanooga, Tennessee, have invented certain new and useful Improvements in Folding and Wrapping Machines, of which the following is a specification.

My invention relates to machines for folding and wrapping magazines and belongs to the type of machines disclosed in Letters Patent of the United States No. 728,879, dated March 17, 1903, though I desire it understood that I do not limit myself in this respect.

The present mechanism is adapted to wrap magazines without folding.

The invention consists in the features and combination and arrangement of parts hereinafter described, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is an end view of the series of rolls which as one illustration of the manner in which the invention is applied may take the place of the group of rolls shown in said patent for folding and wrapping the magazines. Fig. 2 is a rear view of the group of rolls shown in Fig. 1.

Of these rolls the pairs 1 and 2 receive between them the magazine and the wrapper, with the advance flap of the latter folded down upon the magazine. The roll 10 is cut away at its central portion at 3, Fig. 2, and in the space thus provided are arranged the arms 4, loose on the shaft 5 of the rolls 1. These arms carry fingers 6, screwed thereto at 7, said fingers extending out beyond the plane of the periphery of the roll 1 and curved to be concentric thereto, as shown in Fig. 1, thus forming shoulders or abutments for the edge of the paper or magazine to strike against. The two arms on the shaft 5 are connected to move as one body, and said arms are held normally in the position shown in Fig. 1 by a spring 8, attached to one of the arms and attached also to the frame. This spring holds the arm against the stop 9 on the frame. A stop 10 on the frame is intended to limit the movement of the arms under the pressure from the magazine, as will be hereinafter described. A third roll, 1′, is journaled in the same horizontal plane with the shaft 11 of the roll 2, and this third roll is provided with a central space in which are located arms 4′, loose on the shaft 5′, and having fingers, stops, and retracting-spring and arranged in all respects similar to the arms and fingers above mentioned. A fourth roll, 2′, is employed, forming a bite with the roll 1 and arranged below the same.

When the invention is employed in connection with a machine having the feeding-in rolls and other associated parts similar to those disclosed in the patent referred to, the operation is as follows: The incoming magazine is fed to the bite of the rolls 1 and 2 with its advanced lap folded over onto the magazine. The advanced edge enters the fingers 6, and the pressure from the magazine forced onward by the rolls 1 and 2 will force the arms to yield against the spring-pressure until arrested by the stop 10. The advance edge of the magazine will thus be arrested, and the rolls 1 and 2 continuing their action the magazine is caused to bend or bulge toward the bite of the rolls 2 and 1′, and it is therefore grasped by the rolls 2 and 1′ and they begin to draw it through, the spring 8 acting to press the arms 6 back toward their normal position, and thus follows up the movement of the magazine through the rolls 2 1′ and assists initially in presenting the magazine to the said rollers. In following up the movement of the advance edge of the magazine the fingers guide the advanced lap of wrapping-paper more surely into the first fold of the magazine than would otherwise be the case. The action just described is repeated by the passage of the magazine between the rolls 2 and 1′, the magazine being received by the fingers 6′ after leaving the bite of the rolls 2 1′ and said magazine being directed to the bite of the rolls 2 and 2′.

From the above it will be seen that the yielding fingers follow up the movement of the magazine and, indeed, assist in making the said magazine enter the bite of the next pair of rolls. In following up the movement of the magazine the fingers maintain control of the magazine, and thus accurately guide the same between the rolls.

With this apparatus it is also possible to wrap the magazines without folding, and it will also be clear, of course, that the folding-rolls may be employed simply to fold and not to wrap.

It will be observed that the movable arms, with the fingers carried thereby, provide, in effect, a yielding guide and abutment for the magazine, coöperating with the rolls to fold or wrap the same.

The arms 4 are connected by the bar $4^{\times}$, and these and the bar form practically one body, constituting the "tucker-arm." I do not limit myself to this construction, as the tucker may consist of one piece from end to end.

I claim—

1. In combination with a pair of rolls, a yielding abutment to receive the magazine or other article passing between the said rolls, said abutment moving concentric with the axis of one of the rolls and a third roll to which the magazine is directed by the abutment, substantially as described.

2. In combination, with a pair of rolls, a yielding guide and abutment to receive the magazine therefrom, comprising a curved finger concentric with the axis of the roll about which the abutment turns, and a third roll to which the magazine is directed from the abutment.

3. In combination, a pair of rolls, abutment means supported loose on the axis of one of said rolls and adapted to receive the magazine from between the rolls, and a third roll to which the magazine is directed.

4. In combination, in a machine of the class described, rollers for moving the magazine or the like, and an abutment against which the magazine strikes, said abutment being movably supported to retract under pressure of the magazine, the said rolls continuing to act on the magazine after the same strikes the abutment, and the said abutment following up the movement of the magazine toward the bite of the rollers and as it is moved by passing between one of said rolls and a third roll, forming the said bite, substantially as described.

5. In combination, in folding mechanism, rolls for moving the magazine, and an abutment or shoulder against which the edge of the magazine strikes to be initially bent by the feeding action of the rolls, said bent portion being directed to the bite of another roll, said abutment or shoulder moving back under pressure from the magazine and following up the magazine as it passes to the bite of said other roll.

6. In combination, a group of rolls, an abutment or shoulder against which the edge of the magazine strikes when fed by a pair of rolls, said abutment moving back under pressure from the magazine, and a third roll acting with one of the pair of the rolls to which the magazine is directed, said abutment following up the advance movement of the magazine toward the bite of the rolls.

7. In combination, a group of rolls, a plurality of movable abutments or shoulders against which the magazine strikes to cause their retraction, said group comprising a pair to feed the magazine to the first abutment, and a third and fourth roller each coöperating with one of the pair of rollers and with the second movable abutment, substantially as described.

8. In combination a pair of rolls, an abutment or shoulder against which the magazine or other article strikes after passing between the said rolls, said abutment moving back away from the bite of the rolls under pressure of the magazine and a third roll to the bite of which the magazine is directed by the combined action of the pair of rolls and the returning or forward movement of the abutment, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES OWENS.

Witnesses:

R. E. WILLIAMS,

JOHN T. LILLARD.