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MULTI PAPER ROLL SUPPORT FOR ARTICLE WRAPPING MACHINES

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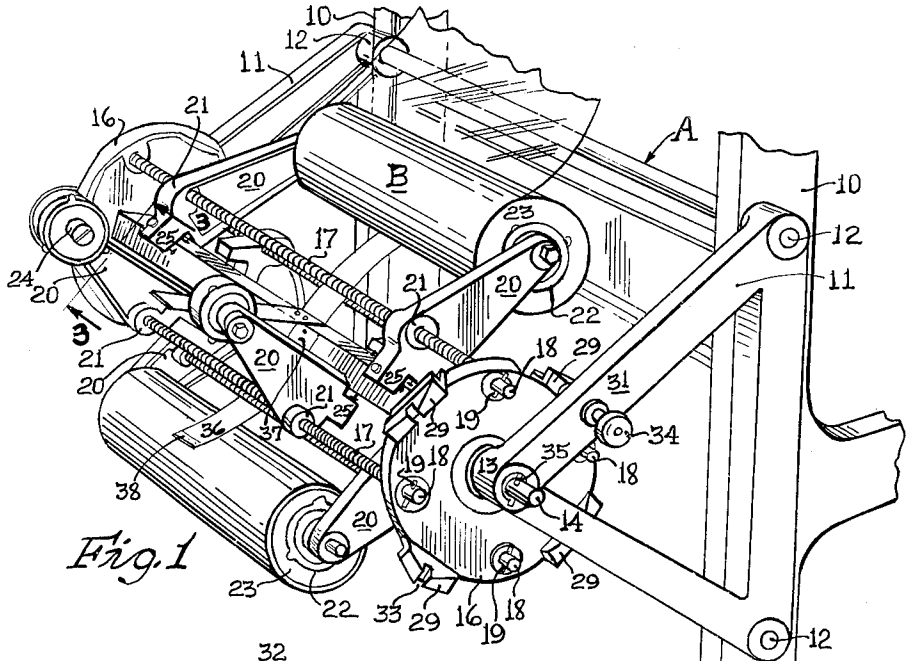


Fig. 1

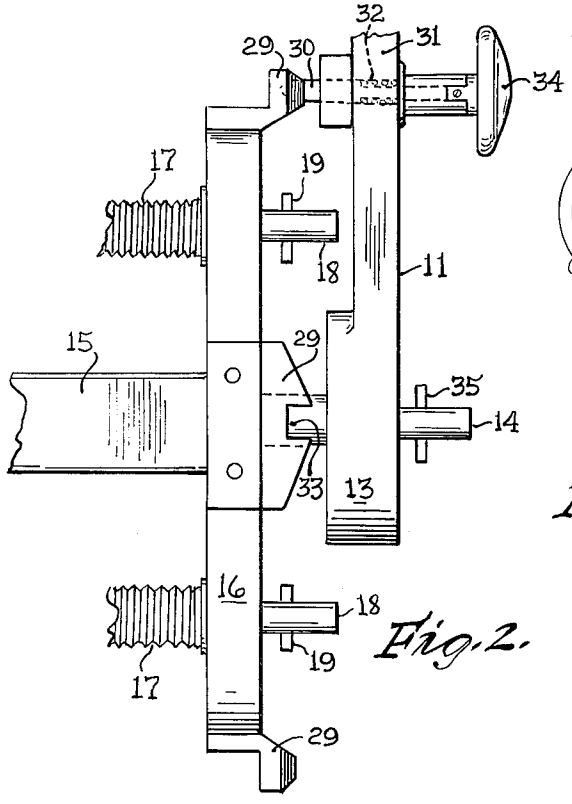


Fig. 2.

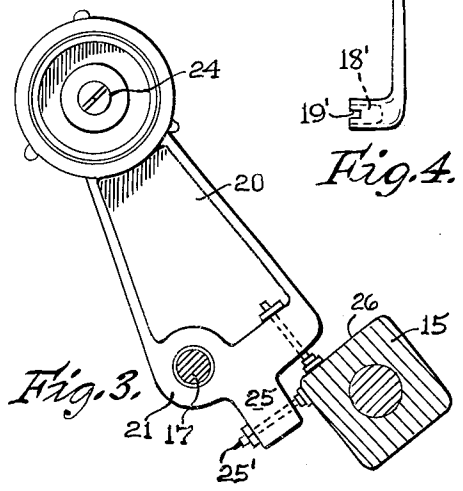


Fig. 3.

Fig. 4.

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MULTI PAPER ROLL SUPPORT FOR ARTICLE WRAPPING MACHINES

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An important object of our invention is to provide a paper roll support of the character hereinafter described wherein provision is made for readily supporting and moving into operative position a full roll of paper to replace a roll which has been completely used in the wrapping operation of the article wrapping machine.

Another object of this invention is the provision to accomplish the foregoing object by an arrangement which is simple in construction and operation, requiring the operator merely to rotate the support to dispose a full roll of paper for the depleted roll.

Other objects will appear hereinafter.

The invention consists in the novel combination and arrangement of parts to be hereinafter described and claimed.

The invention will be best understood by reference to the accompanying drawings showing the preferred form of construction, and in which:

FIG. 1 is a fragmentary perspective view of an article wrapping machine showing our multi paper roll support associated therewith;

FIG. 2 is a fragmentary elevational view of the same;

FIG. 3 is a view of one of the paper roll supporting arms taken on line 3—3 of FIG. 1;

FIG. 4 is an elevational view of a suggested crank.

Our improved multi paper roll support is especially designed for use in connection with an article wrapping machine wherein the paper web from a paper roll is fed into the machine to be engaged by folding mechanism to paper wrap the article. In this connection, an article wrapping machine is indicated generally at A. It includes side frames 10 from which the paper roll support is supported.

Such support comprises a pair of mounting brackets 11 secured in any suitable manner as at 12 to the side frames 10. These brackets 11 are preferably triangularly shaped in side view and at their apex provide bearings 13. Journalled in the bearings 13 are stud shafts 14 formed as integral extensions of a main shaft 15. The shaft 15 is preferably square in cross section. Supported at the ends of the shaft 15 are end discs or plates 16. Arranged in parallel relation with respect to each other and supported by the discs 16 for rotation, are thread-bearing shafts 17. The shafts 17 are arranged circumferentially with respect to the discs 16 and in parallel spaced relation with respect to each other.

Each shaft 17 is rotated by means of a suitable crank 17' (FIG. 4) having a socket 18' which fits upon the end 18 of each shaft 17 and bifurcated as at 19' to receive a transverse pin 19, whereby to removably connect the crank to the shaft 17 which is to be rotated.

Arranged on each shaft 17 (there being four of such shafts) are parallelly spaced apart arms 20. The shaft 17 is threaded through a thread-bearing bearing 21 of the arms 20, whereby, when the shaft 17 is rotated by means of the crank, the arms 20 will move toward each other. The arms 20 support therebetween a core 22 of a paper roll 23. Each arm 20 is provided with a tapered spindle 24 which is adapted to be wedged into the core 22 a sufficient distance to firmly hold the core between the arms 20 and yet permit rotation of the latter to allow the paper web to be unrolled therefrom when in use.

Each of the arms 20 at their inner end portions provides an extension lug 25 which, through an adjustable screw 25' engages the adjacent edge 26 of the shaft 15 whereby to properly balance the arm 20 upon its respective shaft 17. By adjusting the screw 25', the roll of paper in use (that is, the roll from which the paper web is being unwound) may be adjusted to a proper position with respect to the machine A.

To complete the invention there is provided an indexing arrangement for indexing the paper roll support in a proper position to support a roll of paper with respect to the machine 10. Such indexing arrangement also restrains the support from rotating during unwinding of the paper web from one of the rolls. Such indexing arrangement includes a notch plate 29, there being four of such plates mounted on one of the end discs 16 and midway between the shafts 17, as best seen in FIG. 1.

A latch pin 30 is carried by the adjacent bar 31 of one of the plates 11. Such pin 30, by means of a spring 32, is normally urged into latched position. To facilitate withdrawing the latch pin 30 from engagement in the notch 33 of the plate 29, is a hand knob 34.

In use the support will support four rolls of paper, there being one roll disposed between each pair of arms 20. The crank 17' when positioned upon the stud shaft 14 with the pin 35 engaging in the bifurcated socket portion 18', is utilized to rotate the support to dispose one of the rolls of paper in position for use, such roll being indicated at B. This is accomplished by the withdrawing the latch pin 30 from engagement in the notch 33 to allow the support to be rotated 90° to dispose the roll of paper B in a position to be used.

When the paper of the roll B has been fully depleted, by rotating the support through the medium of the crank and by withdrawal of the latch pin 30 the next roll of paper on the support may be brought into the position occupied by the used paper roll.

In this manner, as a roll of paper has been depleted, a full roll be substituted therefor by simply rotating the support 90°.

To restrain each roll of paper from unwinding when not being unwound by operation of the machine, there is provided for each roll a tensioning arm 36. This arm 36 is in the form of a flat spring strip connected to the shaft 15 as at 37 and has its outer free end portion 38 yieldably bearing on the adjacent roll of paper.

Heretofore, article wrapping machines had an arrangement for supporting but one roll of paper. Whenever such roll was depleted, it was necessary for the operator to remove the paper core and replace the same with another roll of paper. This was accomplished through a time-consuming and complicated adjustment of mechanisms. In our invention, whenever the roll of paper becomes depleted, all the operator need do is to apply the crank to the stud 14 of the main shaft 15, withdraw the latch pin 30, and rotate the support 90°, thus bringing into position a full roll of paper ready for threading into the machine.

It will thus be apparent that the operator may at all times maintain an ample supply of four rolls of paper ready for use whenever required. This is accomplished by a mechanism which is simple in construction and operation.

Our invention is especially useful in cases where the packages to be wrapped are not of uniform width and require the paper rolls to be of different widths. Our multi paper roll support is so constructed as to support rolls of paper of different widths, this being accomplished by adjusting the arms 20 to a position corresponding to the width of the roll. In wrapping a package of a different width, all that the operator need do is to select

the roll of paper of the required width and rotate the support to dispose such roll in position for use. It will be obvious that such operation may be expeditiously accomplished, requiring a minimum degree of labor on the part of the operator.

While we have illustrated and described the preferred form of construction for carrying our invention into effect, this is capable of variation and modification without departing from the spirit of the invention. We, therefore, do not wish to be limited to the precise details of construction set forth, but desire to avail ourselves of such variations and modifications as come within the scope of the appended claims.

Having thus described our invention, what we claim as new and desire to protect by Letters Patent is:

1. A multi paper roll support for an article wrapping machine comprising

(a) oppositely disposed mounting brackets extending from an adjacent frame of the machine,

(b) a rotatable main shaft extending between and having end portions journalled in said brackets,

(c) end plates on said shaft,

(d) parallelly extending thread-bearing shafts circumferentially disposed with respect to said plates and in parallel relation to said main shaft and having end portions journalled in said plates,

(e) a pair of supporting arms threadably mounted on each of said thread-bearing shafts and having means at their outer end portions for removably supporting a core of a roll of paper therebetween, said arms at their opposite end portions having end lugs having bearing engagement on said main shaft so as to balance said pair of arms in a predetermined position with respect to said main shaft.

2. The device of claim 1 further characterized by the inclusion of latch means for latching said end plates in a predetermined position with respect to said brackets.

3. A multi paper roll support for an article wrapping machine comprising

(a) oppositely disposed mounting brackets extending from an adjacent frame of the machine,

(b) a rotatable main shaft extending between and having end portions journalled in said brackets,

(c) end plates on said shaft,

(d) rotatable, parallelly extending, thread-bearing shafts circumferentially disposed with respect to said plates and in parallel relation to said main shaft and having end portions journalled in said plates,

(e) said end plates being adjustable relative to said thread-bearing shafts,

(f) a pair of supporting arms threadably mounted on each of said thread-bearing shafts and having means at their outer end portions for removably supporting a core of a roll of paper therebetween, said arms at their opposite end portions having end lugs having bearing engagement on said main shaft so as to balance said pair of arms in a predetermined position with respect to said main shaft.

4. The device of claim **3** further characterized by the inclusion of latch means for latching said end plates in a predetermined position with respect to said brackets.

5. A multi paper roll support for an article wrapping machine comprising

(a) oppositely disposed mounting brackets extending from an adjacent frame of the machine,

(b) a rotatable main shaft extending between and having end portions journalled in said brackets,

(c) end plates on said shaft,

(d) parallelly extending thread-bearing shafts circumferentially disposed with respect to said plates and in parallel relation to said main shaft and having end portions journalled in said plates,

(e) a pair of supporting arms threadably mounted on each of said thread-bearing shafts and having means at their outer end portions for removably supporting a roll of paper therebetween, said arms at their opposite end portions having end lugs having bearing engagement on said main shaft so as to balance said pair of arms in a predetermined position with respect to said main shaft,

(f) and tensioning means for said roll of paper.

References Cited by the Examiner

UNITED STATES PATENTS

744,140	11/03	Wemyss	242—68.4
1,379,164	5/21	Bullis	242—64 X
1,449,093	3/23	Finley	242—64
2,405,637	8/46	Behrens	242—64 X

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