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WRAPPING, BANDING, AND TIPPING MACHINE

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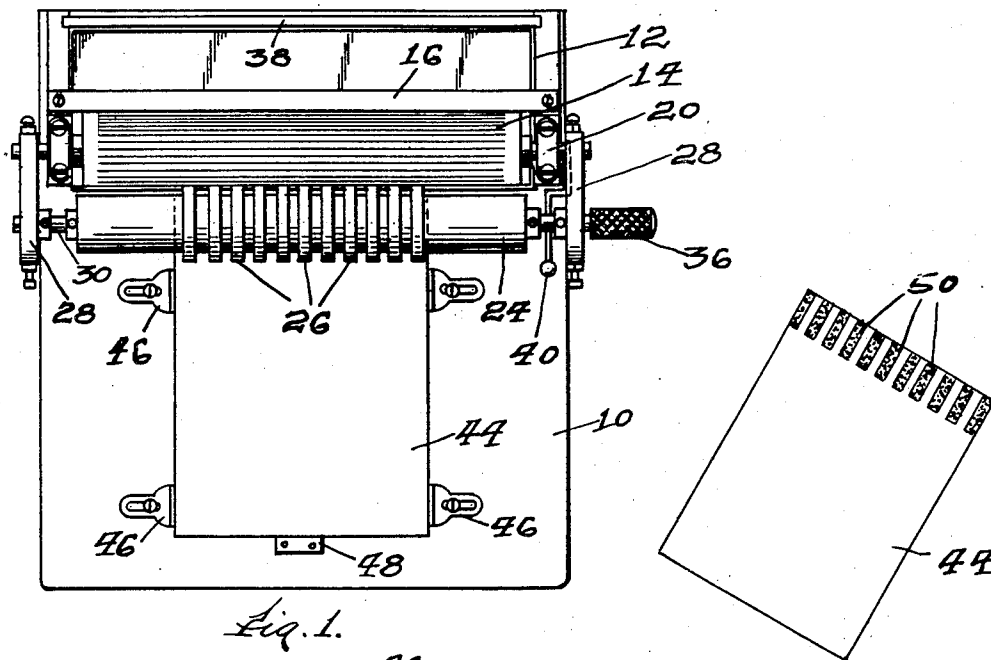


Fig. 1.

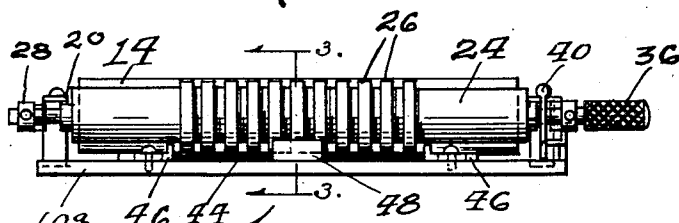


Fig. 2.

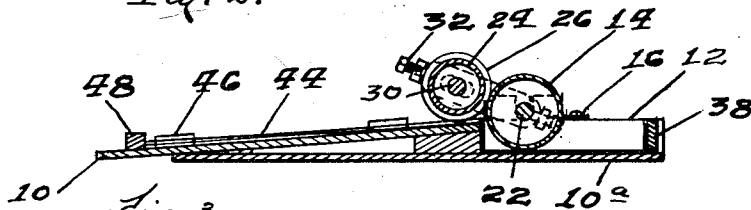


Fig. 3.

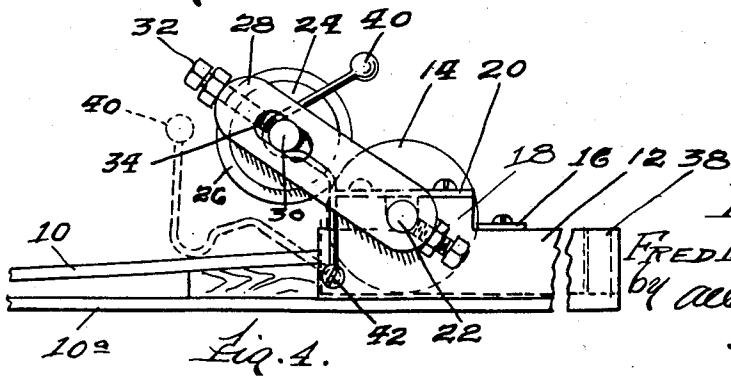


Fig. 4.

Fig. 5.

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WRAPPING, BANDING, AND TIPPING
MACHINE

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11 Claims. (Cl. 91—50)

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This invention relates to an improved wrapping, binding and tipping machine, and has for one of its principal objects the provision of an apparatus which will successively apply glue, mucilage or some other sticky substance to portions of a number of sheets of paper or the like inserted into the machine.

One of the important objects of this invention is to provide a device which will apply glue or the like to one edge or side of a piece of paper which can then be immediately used for wrapping some object either wholly or partially enclosed in the paper, such as, for example, a magazine or circular which is to be mailed.

Another object of the invention is to provide a machine which can be readily used to apply glue to a number of sheets of paper in succession and wherein the glue will be accurately and uniformly placed on each sheet of paper with a minimum expenditure of time and effort and in a very efficacious manner.

Still another important object of the invention is to provide a wrapping, banding and tipping machine in the nature of a pasting or glue-applying device which can be easily constructed, readily operated and which can be used by almost anyone with a minimum of instruction or experience.

Another and still further important object of the invention resides in the provision of an apparatus for applying glue to sheets of paper, which can be readily accommodated to papers of various sizes and which also can be adjusted so that varying and desired amounts of glue or paste can be applied to these sheets of paper and which moreover is simple and clean in operation.

Other and further important objects of the invention will be apparent from the disclosures in the accompanying drawings and following specification.

The invention, in a preferred form, is shown in the drawings and hereinafter more fully described.

In the drawings:

Figure 1 is a top plan view of the improved wrapping, banding and tipping machine of this invention, showing the same with a number of sheets of paper therein, ready for the pasting operation.

Figure 2 is the front elevation of the apparatus shown in Figure 1.

Figure 3 is a sectional view, taken on the line 3—3 of Figure 2, looking in the direction indicated by the arrows.

Figure 4 is an enlarged view of a portion of the

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showing of Figure 3, illustrating certain parts in more detail.

Figure 5 is a top plan view of a sheet of paper to which portions of glue or mucilage have been applied by the machine of this invention.

As shown in the drawings:

The reference numeral 10 indicates generally the base of the improved wrapping, banding and tipping machine of this invention, which base can be of any suitable or convenient material, such as wood, metal or plastic, and which can be of almost any desired dimension corresponding to the use to which the apparatus is to be put in its particular environment.

As best shown in Figure 3, the base is in two parts, 10 and 10a, the portion 10 being placed at a slight angle for more efficient operation.

At the rear of the apparatus is a trough or receptacle 12 which is adapted to contain the glue or mucilage which is used in the device, and it will be noted that the top edge of the trough 12 is on a level with the highest rear portion of the base element 10.

Mounted to rotate in the forward portion of the trough 12 is a glue feeding roller 14, which is corrugated or knurled as best shown in Figure 1, and which, when rotated in the material in the trough, will carry some of this material around with it on its periphery or exterior surface. A scraper strip 16 is positioned on top of the trough 12 and directly behind the roller 14 for the purpose of scraping off excess glue which might otherwise be carried up on the roller in its rotating movement.

This roller 14 is mounted in suitable bearings or supports 18 formed at the sides of the trough 12, and a strap 20 is positioned at the top of each bearing or support 18 so that the roller 14 with its supporting shaft 22 can be readily removed from the trough if necessary or desirable.

Mounted adjacent to the roller 14 is another roller 24 which has shiftably positioned thereon a plurality of rings 26 which are preferably composed of rubber or some other resilient material. These rings are adapted to actually contact the roller 14 when the roller 24 is placed in position, this position being determined by a pair of supporting brackets 28, one at each side of the device.

In the rear lower end of each of the supporting brackets 28 is an opening for the reception of the shaft 22 which supports the roller 14, and in the forward portion of each bracket 28 is a slotted opening adapted for the movable reception of the supporting shaft 30 of the roller 24.

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Pressure of the roller 24 and the rings 26 against the roller 14 is adjusted by means of an adjusting bolt 32 which operates against a helical spring 34, which spring 34 in turn pushes against the shaft 30 of the roller 24. A preliminary rotation of the roller 24 can be accomplished by means of a knurled extension 36 on the outer end of the shaft 30. The rear end of the trough 12 is formed by a removable element 38 so that the trough can be readily removed and cleaned when desired.

The front roller 24 with its bands 26 can be raised from normal contact with the base 10 by means of a lever 40 pivoted at 42 on the end of the trough 12, and which lever is so shaped that it passes under the shaft 30 of the roller 24—26. When this lever 40 is raised, with a consequent raising of the roller 24—26, a number of sheets of paper 44 can be placed on the body portion or support 10, with their forward edges beneath the roller 24 and in direct contact with the movable rings 26 on said roller.

The paper is positioned by means of a number of adjustable stops 46 mounted on the base portion 10, and there may be a fixed stop such as that shown at 48, but this obviously can also be made adjustable.

In operation the trough 12 is filled with liquid glue or the like and the rollers given a preliminary turning movement by means of the knurled extension of knob 36, whereupon glue is brought up on the roller 14 and also onto the rings 26 of the roller 24. The forward roller 24—26 is then lifted by means of the lever 40 and the paper sheets 44 placed in position on the base portion 10, this position being determined by the stops 46 and 48. There may be quite a number of these sheets of paper.

Upon withdrawal of an individual sheet of paper, the forward edge or that portion directly beneath the rings 26 will have applied thereto desired applications of glue, as shown at 50 in Figure 5, and these can be made of various sizes and dimensions, depending upon the job. Obviously, the closer spacing of the rings 26 will result in a closer spacing of the individual applications of glue 50 and the application of the glue can be made continuous, if so desired. The rings 26 can be increased in number so that larger sheets of paper may be used in the machine.

As each sheet is withdrawn, the roller 24 is automatically turned through a portion of its circumference and the contact of the rings 26 with the roller 14 will also cause that roller to turn, thereby bringing up on the roller 14 a further portion of the glue or mucilage, thereby making the operation continuous. This is repeated until the number of sheets is either exhausted or so diminished that replenishment becomes necessary.

It will be obvious that herein is provided a wrapping, banding and tipping machine which can be used for a very efficient application of glue to sheets of paper in rapid succession, which will enormously facilitate the wrapping of packages by means of gummed or glued paper, and which has been found to be particularly advantageous in the mailing of large numbers of certain objects such as periodicals, magazines and catalogs or the like.

Heretofore it was necessary to apply the glue individually to the edge of each sheet of paper, which constituted a laborious and time-consuming job, not to mention the fact that if too many sheets were glued at one time, the glue was apt

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to become dry and accordingly useless for the purpose intended. By the use of this apparatus, a much cleaner, more efficient and infinitely faster performance of the operation is accomplished, and it has been found that little or no skill is required, thereby saving considerable of the cost of training of people for this work.

I claim as my invention:

1. A wrapping, banding and tipping machine comprising a base, a paste-containing trough at the rear of the base, a paste-distributing roller rotatively mounted in the trough, another paste-distributing roller mounted above the base in contact with the first roller, movably mounted bearings for supporting the second roller, means for lifting the second roller from the base, and means on the base for supporting a plurality of sheets of paper with one edge beneath the second roller.

2. A wrapping, banding and tipping machine comprising a base, a paste-containing trough at the rear of the base, a paste-distributing roller rotatively mounted in the trough, another paste-distributing roller mounted above the base in contact with the first roller, movably mounted bearings for supporting the second roller, means for lifting the second roller from the base, means on the base for supporting a plurality of sheets of paper with one edge beneath the second roller, whereby upon the removal of each individual sheet of paper, a desired amount of paste is applied thereto and the rollers are rotated for further paste distribution, and spring means for maintaining the two rollers in operative contact at all times.

3. A wrapping, banding and tipping machine comprising a base, a paste-containing trough at the rear of the base, a paste-distributing roller rotatively mounted in the trough, another paste-distributing roller mounted above the base in contact with the first roller, movably mounted bearings for supporting the second roller, means for lifting the second roller from the base, means on the base for supporting a plurality of sheets of paper with one edge beneath the second roller, whereby upon the removal of each individual sheet of paper, a desired amount of paste is applied thereto and the rollers are rotated for further paste distribution, and spring means for maintaining the two rollers in operative contact at all times, together with means for adjusting the tension of said spring means.

4. A wrapping, banding and tipping machine comprising a base, a paste-containing trough at the rear of the base, a paste-distributing roller rotatively mounted in the trough, another paste-distributing roller mounted above the base in contact with the first roller, movably mounted bearings for supporting the second roller, means for lifting the second roller from the base, means on the base for supporting a plurality of sheets of paper with one edge beneath the second roller, whereby upon the removal of each individual sheet of paper, a desired amount of paste is applied thereto, and the rollers are rotated for further paste distribution, and means for preliminarily rotating the rollers for an initial paste distribution.

5. A wrapping, banding and tipping machine comprising a base, a paste-containing trough at the rear of the base, a paste-distributing roller rotatively mounted in the trough, another paste-distributing roller mounted above the base in contact with the first roller, movably mounted bearings for supporting the second roller, means for lifting the second roller from the base, means

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on the base for supporting a plurality of sheets of paper with one edge beneath the second roller, whereby upon the removal of each individual sheet of paper, a desired amount of paste is applied thereto, and the rollers are rotated for further paste distribution, and adjustable means associated with the trough for governing the amount of paste carried on the first roller.

6. A wrapping, banding and tipping machine comprising a base, a paste-containing trough at the rear of the base, a paste-distributing roller rotatively mounted in the trough, another paste-distributing roller mounted above the base in contact with the first roller, movably mounted bearings for supporting the second roller, means for lifting the second roller from the base, means on the base for supporting a plurality of sheets of paper with one edge beneath the second roller, whereby upon the removal of each individual sheet of paper, a desired amount of paste is applied thereto, and the rollers are rotated for further paste distribution, and a plurality of rings shiftably mounted on the second roller.

7. A wrapping, banding and tipping machine comprising a base, a paste-containing trough at the rear of the base, a paste-distributing roller rotatively mounted in the trough, another paste-distributing roller mounted above the base in contact with the first roller, movably mounted bearings for supporting the second roller, means for lifting the second roller from the base, means on the base for supporting a plurality of sheets of paper with one edge beneath the second roller, whereby upon the removal of each individual sheet of paper, a desired amount of paste is applied thereto, and the rollers are rotated for further paste distribution, and a plurality of rings removably and shiftably mounted on the second roller, whereby the amount of paste applied to each sheet of paper can be determined.

8. A wrapping, banding and tipping machine comprising a base, a paste-containing trough at the rear of the base, a paste-distributing roller rotatively mounted in the trough, another paste-distributing roller mounted above the base in contact with the first roller, movably mounted bearings for supporting the second roller, means for lifting the second roller from the base, means on

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the base for supporting a plurality of sheets of paper with one edge beneath the second roller, whereby upon the removal of each individual sheet of paper, a desired amount of paste is applied thereto, and the rollers are rotated for further paste distribution, and adjustable gauges on the base for positioning the paper with respect to the paste-distributing rollers.

9. A wrapping, banding and tipping machine comprising a base, a paste-containing trough at the rear of the base, a paste-distributing roller rotatively mounted in the trough, another paste-distributing roller mounted above the base in contact with the first roller, movably mounted bearings for supporting the second roller, means for lifting the second roller from the base, means on the base for supporting a plurality of sheets of paper with one edge beneath the second roller, whereby upon the removal of each individual sheet of paper, a desired amount of paste is applied thereto, and the rollers are rotated for further paste distribution, and two sets of adjustable gauges on the base one for positioning the paper with respect to the paste-distributing rollers and the other for determining the depth of paste application.

10. A machine for wrapping items in individual sheets comprising a base, a trough for paste at the rear of the base, a paste distributing roller rotatably mounted in the trough, another paste distributing roller movably mounted on the base for continuous operating contact with the first roller and means for raising the second roller for insertion of the forward edges of a plurality of wrapping sheets thereunder.

11. A machine for wrapping items in individual sheets comprising a base, a trough for paste at the rear of the base, a paste distributing roller rotatably mounted in the trough, another paste distributing roller movably mounted on the base at a level above the first roller and means for moving the second roller in an arc about the center of the first roller for insertion of the forward edges of a plurality of wrapping sheets under the second roller and paste distributing means on the said roller.

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No references cited.