Aug. 2, 1927. 1,637,891

A. M. BATES

METHOD OF AND APPARATUS FOR PACKAGING MATERIAL

Filed June 23, 1926

FIG. 1.

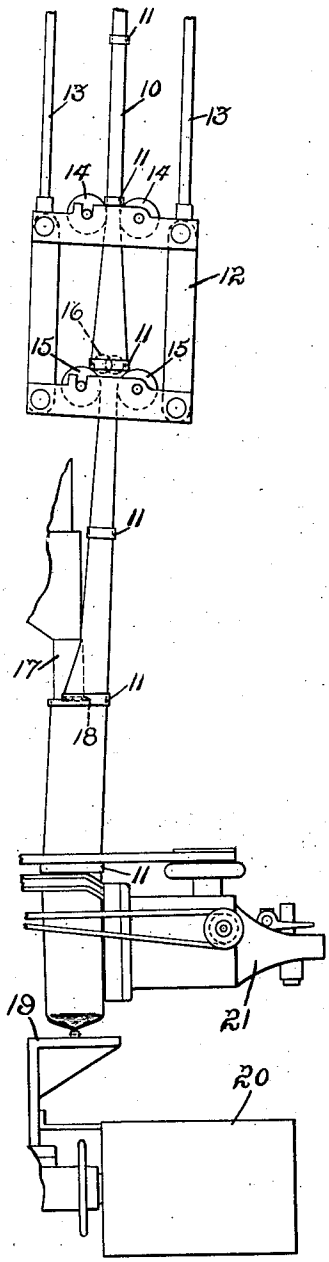


FIG. 2.

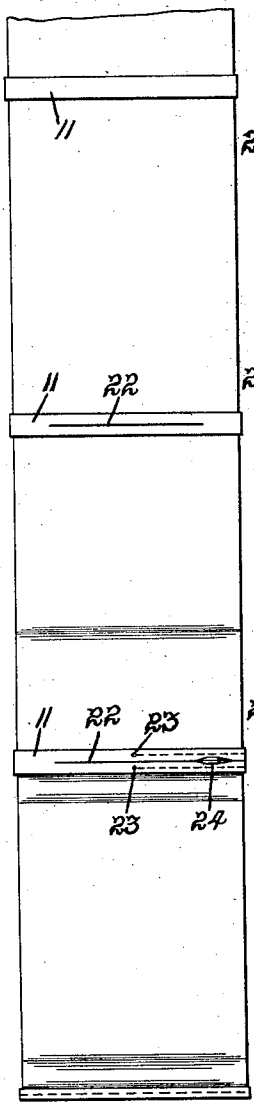


FIG. 3.

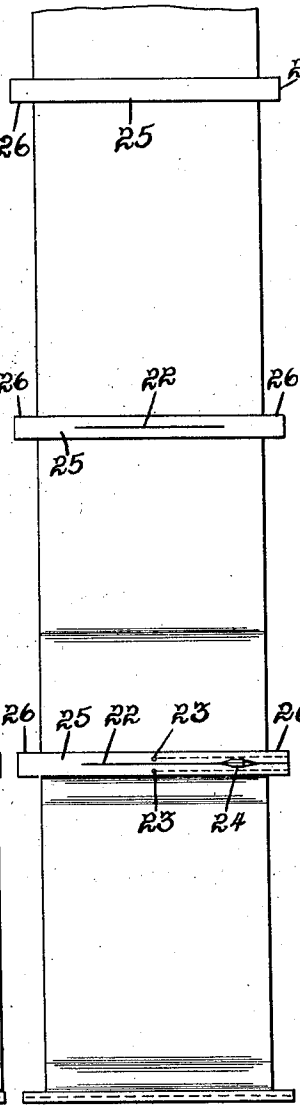
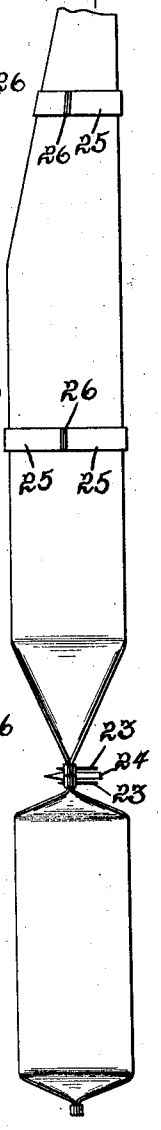


FIG. 4.



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Patented Aug. 2, 1927. 1,637,891

UNITED STATES PATENT OFFICE.

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METHOD OF AND APPARATUS FOR PACKAGING MATERIAL.

Application filed June 23, 1926. Serial No. 117,953.

This invention relates to a method of and apparatus for packaging material. More particularly it relates to a method of packaging material in successive portions of an elongated bag-tube. Further details of the invention will appear as the description proceeds.

In the accompanying drawing forming a part of this specification, Figure 1 is a diagrammatic elevation of one form of apparatus for carrying out the invention; Fig. 2 is a face view of a bag-tube suitable for use in carrying out this invention, successive stages of the method being diagrammatically indicated; Fig. 3 is a view similar to Fig. 2, showing a modified form of reinforcement; Fig. 4 is a side view of Fig. 3 viewed from the right of that figure.

A bag-tube 10, long enough to form a plurality of bags, has reinforcing cross-bands 11 at spaced intervals, the spaces being so arranged that the cross-bands will occur at the ends of bags formed from the tube. These reinforcing bands may extend entirely around the tube, as indicated in Fig. 1, or they might extend only across opposite sides, or in some instances across one side only. The reinforcing bands may be made in, or applied to, the tube in any convenient manner.

In the apparatus shown, there is a guiding cage 12 suspended in any suitable manner, as by rods 13. The cage has sets of rollers 14 and 15 between which the bag-tube may be threaded. Internal rollers 16 are shown in dotted lines, and suspend an internal float, not shown. A suitable float for this purpose is shown in my Patent No. 1,588,647, issued June 15, 1926. In the form of apparatus shown, there is a feeding device having a discharge tube 17 with a terminal knife 18. Beneath feeding device 17, preferably two bag-lengths, there is a supporting platform 19. Part of a bag-length lower than platform 19, and to one side thereof, there is a conveyor 20 beneath a sewing machine 21.

The method of carrying out the process with the apparatus diagrammaticaly indicated in Fig. 1 is as follows. The bag-tube 10 is threaded through rollers 14 and 15 and over the float and drawn down until its lower end reaches approximately to platform 19. At this time one cross-band 11 will be in register with knife 18. At the same time other cross-bands 11 will be engaged by rollers 14 and 15. This engagement of the cross-bands by rollers 14 and 15 aids in properly registering the bag-tube. The tube is then shoved against spout 17, knife 18 forming a slit in the side of the tube, so that the feed tube may deliver a charge of material into the bag-tube. After the charge has been delivered, the tube is swung back away from the feeding device and lowered until its bottom rests upon conveyor 20. The bag is then fed through the sewing machine.

The parts are adjusted so that the slit 22 formed by a knife 18, through cross-piece 11, comes between needles 23 of the sewing machine. Accordingly, the needles form a seam through the reinforcing cross-piece and the bag-tube on each side of slit 22. The bag-tube may be severed between these seams, either at the same time that the seams are sewed, as by a knife 24 operating in timed relation with the needles, or severance may be completed at any desired time. Preferably this severance is along the same line as slit 22.

In the form of tube shown in Fig. 2, cross-bands 11 surround the tube In the form shown in Fig 3, reinforcing tapes 25 are placed on opposite sides of the tube, and extended beyond the sides of the tube at 26. This form of reinforcement is sometimes preferable, as it furnishes an extension beyond the side of the tube which prevents ravelling of the seam at the corner of the bag.

It will be readily understood that openings might be made through the side of the bag before the feeding operation, instead of being made by a knife on the feed tube, and it will be readily understood that many other obvious modifications may be made within the scope of the appended claims.

What I claim is:

1. The method which consists in forming a bag-tube having reinforcing cross-bands at spaced intervals, filling charges into the tube through slits in said cross-bands and sewing tube-closing seams through the cross-bands.

2. The method which consists in forming a bag-tube having reinforcing cross-bands

thereon, moving the tube longitudinally past a filling station, forming a slit in each cross-band and filling a charge of material through the slit into the tube, as the cross-band registers with the filling station and thereafter utilizing the cross-band in forming a closure for the tube.

3. The method which consists in forming a bag-tube having reinforcing cross-bands at spaced intervals, moving the tube longitudinally past a filling station, filling successive charges into the tube through openings in the side thereof, and utilizing said cross-bands in registering successive lengths of the bag-tube at the filling station.

4. The method which consists in forming a bag-tube with reinforcing cross-bands thereon, forming a slit through each cross-band and the wall of the tube, filling a charge through each slit, forming a tube closure on each side of the slit, and severing the tube and reinforcing band along the line where the slit occurs.

5. In apparatus for filling a bag-tube having reinforcing cross-bands at spaced intervals thereon, a filling device, and means to engage a cross-band when the bag-tube is in proper register with the filling device.

6. In apparatus for filling a bag-tube having reinforcing cross-bands at spaced intervals, a filling device and cooperating rollers adapted to engage the inside and the outside of the tube, respectively, the rollers being so located with respect to the filling device that they engage a cross-band when the bag-tube is in proper register with the filling device.

In testimony whereof, I have hereunto signed my name to this specification.

CLARA H. BATES,
Administratrix of the Estate of Adelmer M. Bates, Deceased.