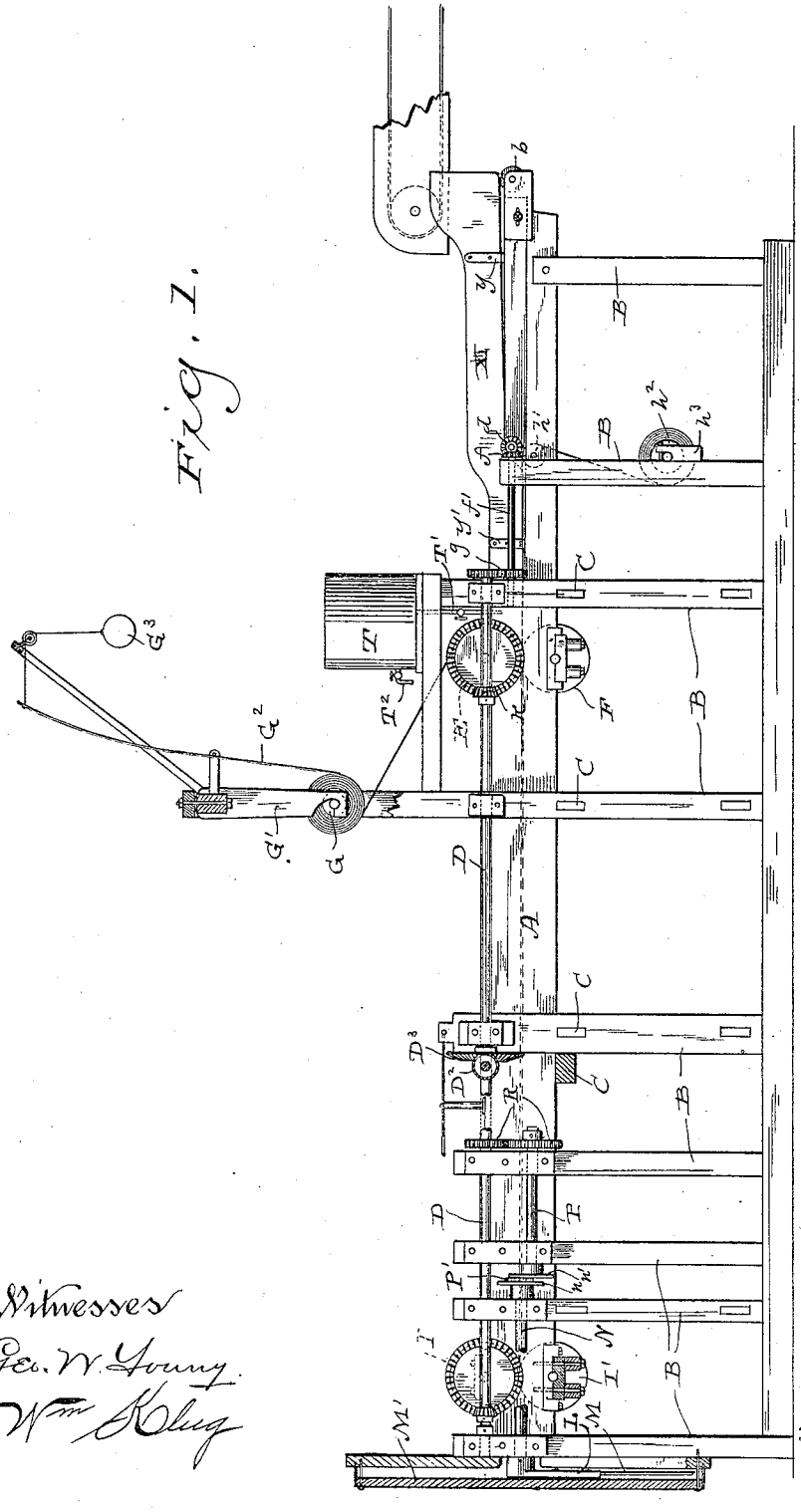
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E. J. STEWART.

MECHANISM FOR THE MANUFACTURE OF PACKING FOR BOTTLES.

No. 430,325. Patented June 17, 1890.

Fig. 1.



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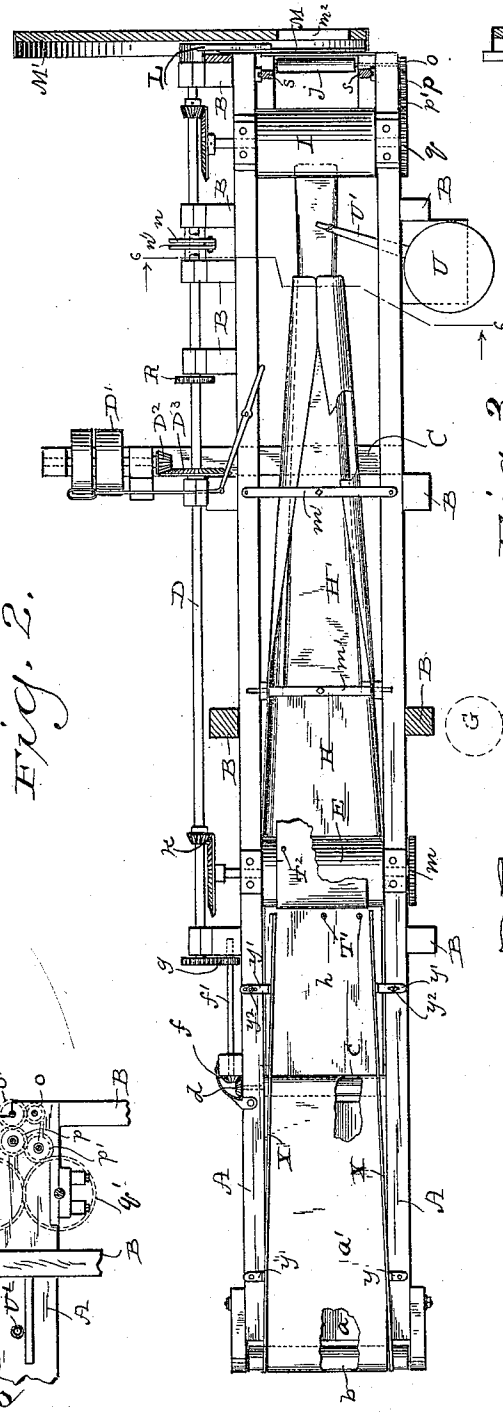


Fig. 2.

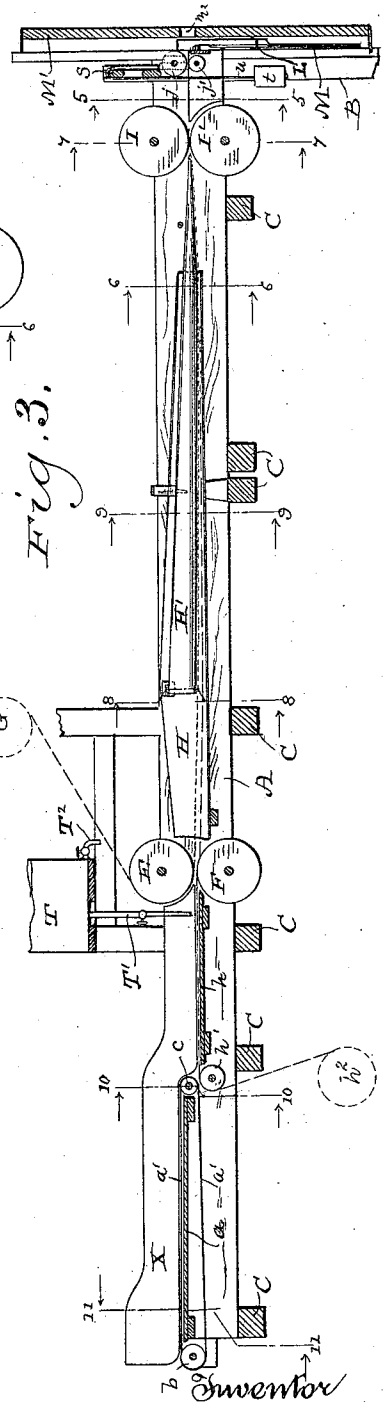


Fig. 3.

Fig. 4.

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E. J. STEWART.

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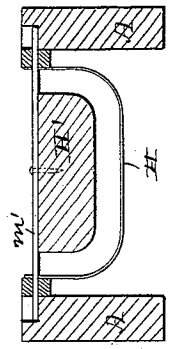


Fig. 8.

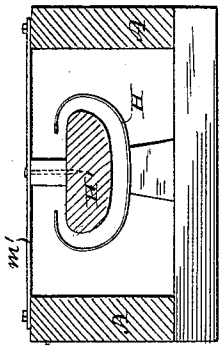


Fig. 9.

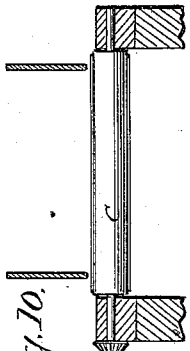


Fig. 10.

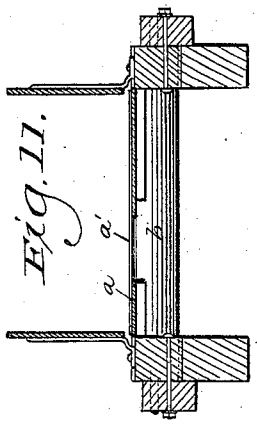


Fig. 11.

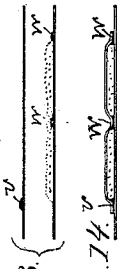


Fig. 13.

Fig. 14.

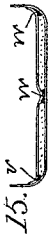


Fig. 15.



Fig. 16.

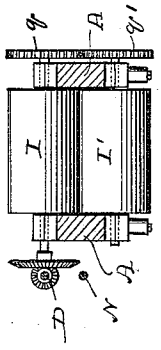


Fig. 7.

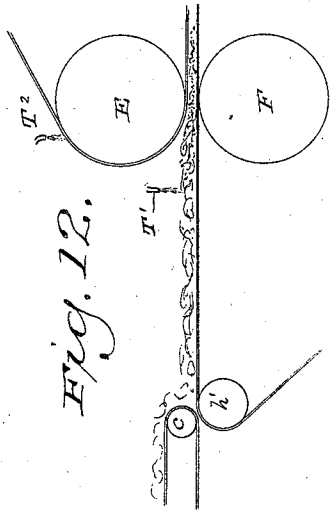


Fig. 12.

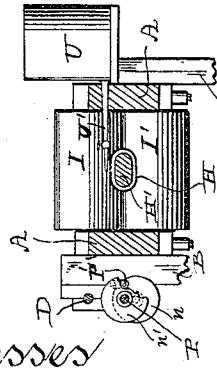


Fig. 6.

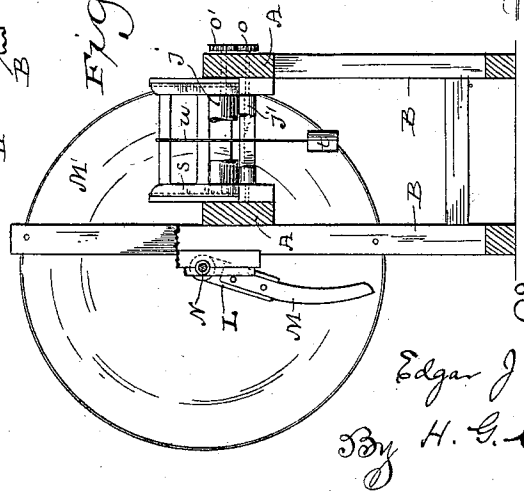


Fig. 5.

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UNITED STATES PATENT OFFICE.

EDGAR J. STEWART, OF SHEBOYGAN, WISCONSIN.

MECHANISM FOR THE MANUFACTURE OF PACKING FOR BOTTLES.

SPECIFICATION forming part of Letters Patent No. 430,325, dated June 17, 1890.

Application filed January 13, 1890. Serial No. 336,779. (No model.)

To all whom it may concern:

Be it known that I, EDGAR J. STEWART, of Sheboygan, in the county of Sheboygan, and in the State of Wisconsin, have invented certain new and useful Improvements in Mechanism for the Manufacture of Packing Tubes, Pads, and the Like; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to the manufacture of packing tubes, pads, and the like; and it consists in certain mechanism therefor, which will be fully described hereinafter.

In the drawings, Figure 1 is a side view, partly in section, of my invention. Fig. 2 is a plan view partly broken away and in section. Fig. 3 is a vertical longitudinal section through the machine. Fig. 4 is a side view of the delivery end of the machine with the rollers at that end in dotted lines. Fig. 5 is a section on line 5 5, Fig. 3; Fig. 6, a section on line 6 6, Fig. 3; and Figs. 7, 8, 9, 10, and 11, sections on lines 7 7, 8 8, 9 9, 10 10, and 11 11 of the same figure; and Fig. 12 is a detail. Figs. 13 to 16, inclusive, are end views showing different stages in the operation of the machine.

A A are the side pieces of a frame, which is supported by uprights B, that form a solid foundation. These sides are connected by suitable bottom strips C, and in them are formed bearings for the various rollers that form part of the machine. A shelf *a* extends from one side to the other at the receiving end of the machine, and around this is an apron *a'*, which runs on rollers *b c*, and the shaft of the latter roller carries on one end a bevel-wheel *d*, that meshes with a like wheel *f* on a shaft *f'*, that is geared at *g* to the main driving-shaft D of the machine. Just forward of shelf *a*, but on a lower plane, is another shelf *h*, which is guarded by a roller *h'*, which receives a strip of paper from a roll h^2 and conveys it onto the shelf *h;* and just forward of shelf *h*, but journaled on a higher and lower plane, respectively, and slightly separated from each other, are two feed-rollers E and F. The lower roller is to take the paper from the shelf and the upper roller to take a strip of paper from an upper roll G. The feed-roller E is driven by the shaft D through bevel-gearing *k*, and in turn drives the roller F through cog-gearing *m*.

An open funnel-shaped former H is suspended between the sides A in such position that its mouth almost touches the rollers E and F. The mouth of the former H is trough-shaped, and from this point the edges gradually approach each other until they meet and form a tapered tube at the delivery end.

A mandrel H', which is substantially oval in cross-section and tapers to a flat point, is suspended in the former from bars *m' m'*, so as not to touch the sides of the former, and the flattened end of this mandrel projects from the former between the rising peripheries of two delivery-rollers I I', which are driven by shaft D, just as rollers E and F are driven.

In front of the rollers I I' are journaled two other and smaller rollers *j j'*. The bearings of the shaft of roller *j'* are fixed, and on one end this shaft is connected by pinions *o o'* and *p p'* with the pinion *q'* on the shaft of the roller I', which pinion, by meshing with a pinion *q* on roller I, serves to drive it also; but the shaft of roller *j* has its bearings in a gate *s*, from which is suspended a weight *t* by a cord *u*, which weight causes the roller to compress the stock as it passes between it and roller *j'*.

A crank-arm L on the forward end of a shaft N carries a knife M, and the path of this knife is shielded by a guard M', that is fixed to the delivery end of the machine, and an opening m^2 in this guard permits the completed stock to pass out as it is cut off by the knife in its revolution.

The shaft N has its bearings in two of the forward uprights B, and on its inner end carries a disk *n*, the face of which is eccentrically connected with the face of another disk *n'* on a shaft P by a link P', and this shaft P, which has its bearings in two of the inner uprights B B, is connected by cog-wheels R R with the shaft D, by which it is revolved. These wheels are of such relative diameters as to properly time the action of the knife to

cause it to sever the stock at the proper intervals, and thus produce the desired length of stock. The shaft D is driven by a belt and a pulley D′, acting through its shaft and bevel gear-wheels D^2 D^3.

The shaft of the lower paper-roll h^2 is journaled in brackets h^3 on two opposite uprights B B, and that of the roll G in standards G′, that project up above the frame, and the tension of the roll is regulated by a spring G^2 and weight G^3.

T is a glue-pot that has three separate gravity discharging-spouts T′ T′ T^2, the spouts T′ T′ for distributing glue to one side of the lower strip of paper, and T^2 for distributing it to the other edge and opposing side of the upper strip.

U is another glue-pot that furnishes the glue for sticking the edges of the composite packing together.

Owing to the manner in which the upper and lower strips of fabric are united by my device, it is necessary that I should have a glue-receptacle provided with independent gravity discharging-spouts, arranged substantially as above described.

My packing consists of two layers of paper or other fibrous material inclosing between them excelsior or a like substance of resilient nature; but for the purposes of description I will only refer hereinafter to paper and excelsior as composing my packing. The lower strip of paper is about as wide as the rollers E and F are long, and the upper strip is not quite so wide. The excelsior is fed to the lower strip by apron a', and as the lower strip is carried forward by its roller h' it takes the excelsior under spouts which drop glue onto it, and thence under the upper strip, and the two strips are pressed together by the rollers E F. The upper strip is caused to adhere to the excelsior at v and to the lower strip at w, and then the two strips pass into the former and are bent first into the shape shown in Fig. 15, and finally, as they pass out of the former, the edges of the lower strip receive glue from spout U′, and then the rollers I I′ press them together and form a tube of them which is cut into suitable lengths as it passes from rollers j j' by the knife. When simple sheets of batting are to be made, the final gluing is omitted, and after the stock is cut off it may be used for padding carpets, &c.; or, in addition to the omission of the last glue-pot, the inrolling of the upper portion of the former may be dispensed with, leaving it trough-shaped from end to end. It will be observed that the excelsior is only glued to the upper fabric, and that the two fabrics are only glued together on one edge. This is done as the stock passes between rollers E and F, and then when tubes are to be made of the stock the former and mandrel bring the edges of the lower or widest strip together so that they may be joined by the glue from spout U′. The excelsior should be fed to the longitudinal center of the lower strip of fabric, and therefore I secure a wing X to each side piece A at the receiving end of the machine by means of lugs y y'. These wings are of elastic material, and the lugs y' that project from them are slotted and are adjustably secured to their respective side pieces by set-bolts y^2, so that the wings may be inclined toward each other at that end to properly guide the excelsior onto the lower fabric.

I do not herein claim my hereinbefore-set-forth method of manufacturing the described packing, as the same is reserved as the subject of a separate application for patent, filed May 22, 1890, Serial No. 352,783.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with a suitable frame, of lower feed-rollers for carrying a strip of fabric from a roller thereof, an upper feed-roller for conveying a strip of fabric from an elevated roll, a gravity-discharging glue-receptacle having separate spouts feeding independently on one side of the lower strip and on the opposite side of the other strip of fabric, and an apron for feeding a filling to the lower strip of paper, substantially as set forth.

2. The combination, with the fabric and excelsior feeding mechanism, of suitably-arranged glue-spouts, a former arranged to receive the stock from the feed-rollers, a mandrel suspended in and projecting from the forward end of the former, compressing and feed rollers for taking the stock from the mandrel, and a revolving knife and mechanism for operating the parts, substantially as described.

3. The combination, with the feeding mechanism for the strips of fabric and the excelsior feeding-apron and wings for guiding the excelsior therefrom to the center of the lower strip of fabric, of glue-spouts and rollers for compressing the excelsior and fabric together, a tapered former for receiving the stock so formed, a mandrel suspended in and projecting from said former, rollers for taking the stock from the mandrel, and operating mechanism, substantially as described.

4. The combination, with the feeding mechanism for the strips of fabric and mechanism for feeding the filling between the strips of fabric, of a tapered scroll-shaped former, a tapered mandrel suspended in the former, a glue-spout arranged to project between the edges of the sheets of the fabric as they leave the former, and rollers for compressing the edges together, substantially as described.

5. The combination, with an excelsior delivery-apron and adjustable guides therefor, of rollers for feeding a strip of paper above and below the excelsior, a former arranged

to receive the stock thus combined, a mandrel suspended in the former, rollers for drawing the stock from the former, and glue-spouts for supplying glue to seal the parts of the stock together, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand, at Milwaukee, in the county of Milwaukee and State of Wisconsin, in the presence of two witnesses.

EDGAR J. STEWART.

Witnesses:
H. G. UNDERWOOD,
WM. KLUG.