

E. W. LABOMBARDE.
ADHESIVE APPLYING MECHINISM.
APPLICATION FILED NOV. 26, 1910.

1,130,744.

Patented Mar. 9, 1915.

2 SHEETS—SHEET 1.

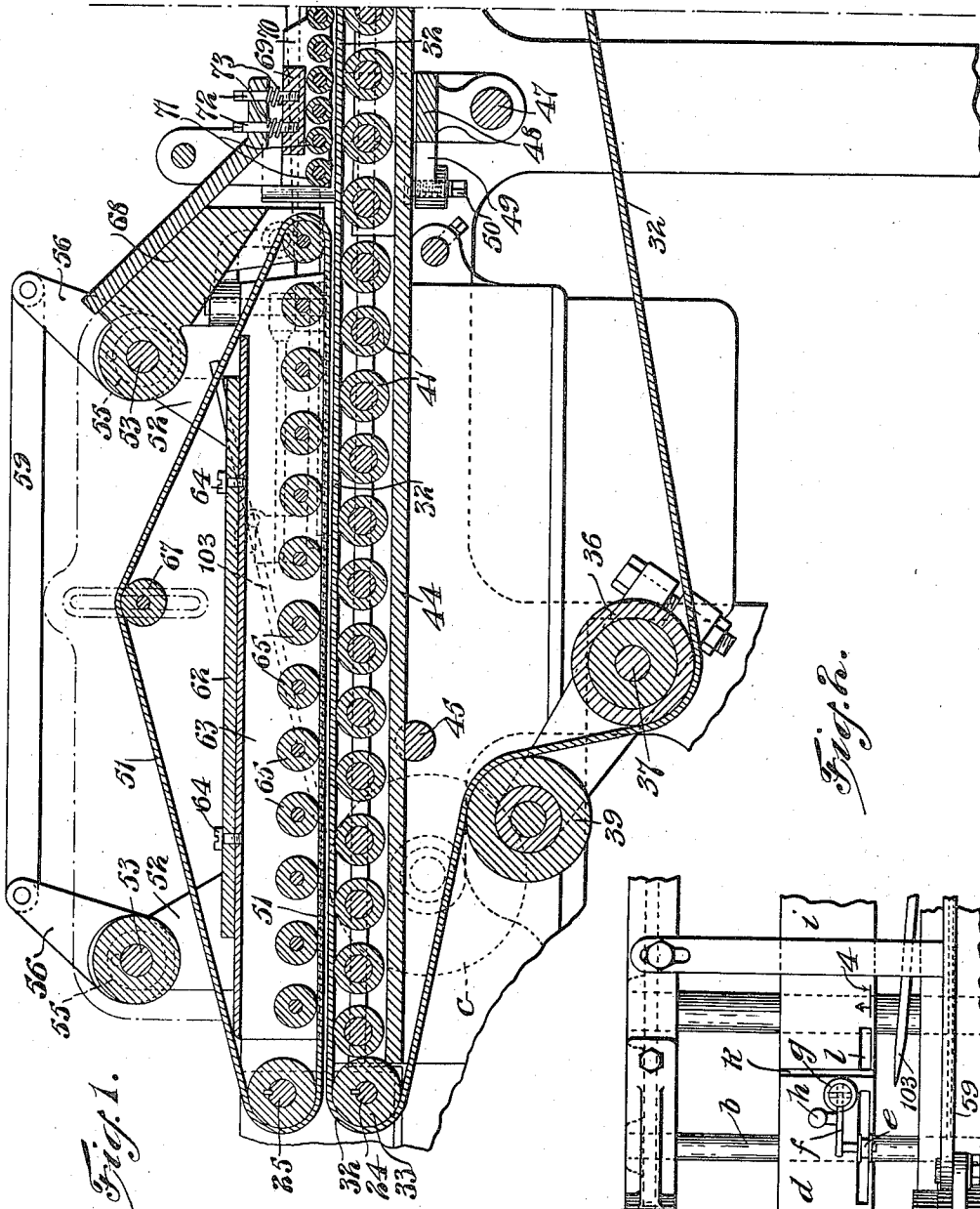


Fig. 1.

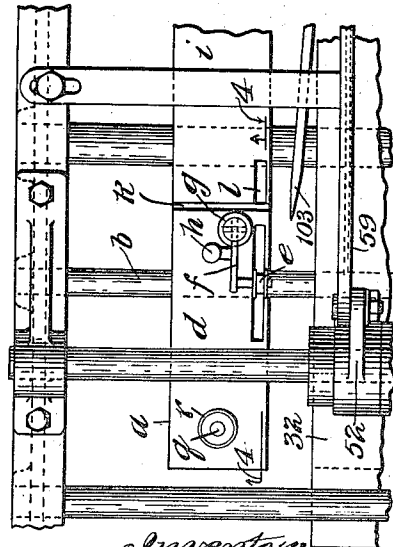


Fig. 2.

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(by Charles F. Brown) Attys.

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Fig. 3.

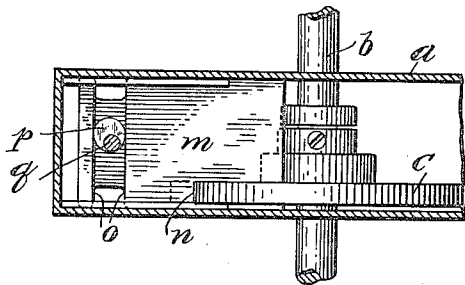


Fig. 4.

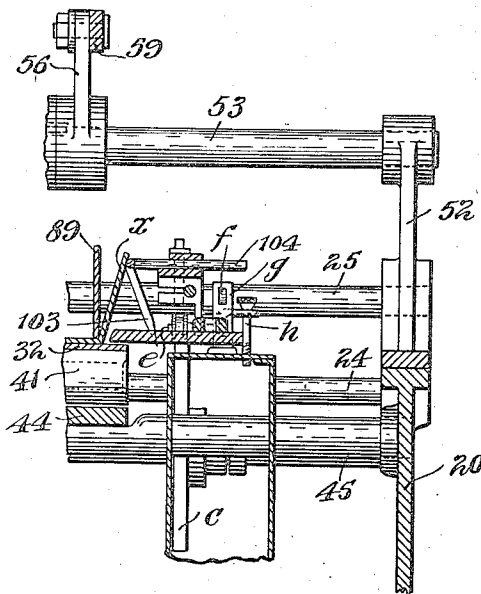
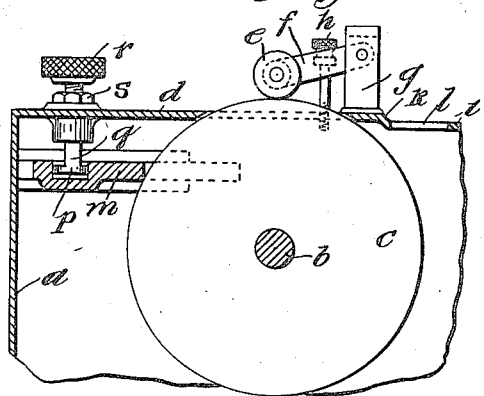


Fig. 5.

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UNITED STATES PATENT OFFICE.

ELIE W. LABOMBARDE, OF NASHUA, NEW HAMPSHIRE.

ADHESIVE-APPLYING MECHANISM.

1,130,744.

Specification of Letters Patent.

Patented Mar. 9, 1915.

Original application filed December 7, 1909, Serial No. 531,860. Divided and this application filed November 26, 1910. Serial No. 594,304.

To all whom it may concern:

Be it known that I, ELIE W. LABOMBARDE, of Nashua, in the county of Hillsboro and State of New Hampshire, have invented certain new and useful Improvements in Adhesive-Applying Mechanism, of which the following is a specification.

This invention relates to means for applying a line of an adhesive to blanks which are then folded, said means being especially adapted for use in connection with machines which feed blanks singly from a pile and rapidly and continuously advance them through folding and pressing devices to make what are known as folded paper boxes. Such a machine is illustrated in my Patent 915,971.

One of the objects of this invention is to provide simple improved means capable of applying exactly the right quantity of the adhesive (hereinafter referred to as glue) to the blanks as they pass at high speed; and especial objects are to provide improved means for adjusting the quantity of glue which can be applied to the blanks, for preventing an accumulation of glue strings, and for returning to the receptacle or pot all excess of glue.

To these ends the invention consists in the construction and combination of parts substantially as hereinafter described and claimed.

As the invention herein claimed is a division of an application 531,860 filed by me December 7, 1909, patented May 12, 1914, No. 1,096,633, I have preferred that the present drawings shall illustrate it in connection with such a folding machine as disclosed in that application, and hence the present drawings show some of the machine which forms the subject matter of the claims in that application; but it is to be understood that I do not limit myself to the use of the gluing mechanism in connection with that specific form of folding machine.

Figure 1 represents a longitudinal section of a portion of the folding machine, said figure indicating the glue wheel by dotted lines only, this figure being employed to indicate the location of the glue mechanism relatively to the blank-advancing mechanism of the folding machine. Fig. 2 is a plan view of the glue mechanism and the adjacent portions of the folding machine. Fig. 3 is a plan view of the glue mechanism,

the top or cover being removed. Fig. 4 represents a section on line 4-4 of Fig. 2. Fig. 5 represents a detail transverse section, including some of the parts of the folding machine.

Similar reference characters indicate the same or similar parts in all of the views.

Reference numerals are employed in connection with the parts of the machine forming the subject matter of my Patent No. 1,096,633, above referred to, while reference letters are employed in connection with the subject matter of the claims of this present application.

Referring first to the parts of the folding machine which I have considered it desirable to illustrate in the drawings, 24 and 25 indicate lower and upper shafts which are suitably driven so that the two belts 32 and 51 will be driven so that their parallel stretches will travel rapidly and continuously in the same direction, and at the same speed, to forward the blanks which are to have the adhesive applied thereto. On the lower shaft 24 is secured a pulley 33 for the lower belt 32. Said belt passes under and over pulleys 36 and 39 one of which is a tightener.

The upper stretch of the lower belt runs on supporting rolls 41 which are mounted in suitable bearings carried by a bed 44, said bed resting on a bar 45, and also on one or more adjusting screws 50 carried by arms 49 of a web 48 which is supported on a cross bar 47.

The upper belt 51 coacts with the main belt 32 in carrying the blanks over the gluing devices. To support said belt I provide uprights 52 carried by portions of the frame of the machine, said uprights supporting two parallel rods 53 on which is mounted an elongated web indicated by dotted lines in Fig. 1, said web having enlarged portions or bearings 55. Arms 56 mounted on the rods 53 are connected by a link 59. This structure relates to the adjustment of the upper belt and need not be described further herein as it is fully disclosed and claimed in my application above referred to. It is desirable, however, to explain herein that a flange 62 which is vertically adjustable has a housing 63 secured to it as by screws 64, said housing carrying rolls 65 which hold the lower stretch of the belt 51 down upon the blanks passing between the upper and

lower belts. The upper belt is held at proper tension by a roll 67.

At one end is a casting 68 which carries a block 69 provided with side plates 70 in which are mounted rolls 71, the block 69 being yieldingly connected with the lower end of the casting 68 by means of guide pins 72 and springs 73. As the blanks pass through the machine their flaps are turned up by suitable means such as the inclined arm 103 carried by an arm 104. Before the flaps are so turned up, one of them has a narrow line of glue applied to its under side by means of a wheel or disk *c* which is indicated by dotted lines in Fig. 1 in order to illustrate the preferred location of the glue mechanism relatively to the blank forwarding devices hereinbefore briefly described.

I will now describe the glue applying mechanism:—A reservoir or pot *a* which is usually provided with a suitable heater has a shaft *b* passing through it, said shaft having suitable means for rotating it at a peripheral speed in unison with the speed of the belts. A portion of the periphery of the wheel *c* projects through a slot in a cover *d*. This structure provides for entirely inclosing the glue pot or receptacle to aid in keeping the glue at a proper consistency. To hold the edge of the wide flap of the blank *x* down upon the periphery of the wheel or disk *c*, I provide a roll *e* carried at the end of an arm *f* pivoted to a post *g* rising from the top of the glue receptacle. By means of a screw *h* mounted in the top of the glue receptacle, the roll *e* may be accurately set to obtain just the proper degree of pressure for holding the blank flat upon the glue wheel or disk *c*.

The cover of the glue pot or receptacle is formed in two planes. The portion which is in the lower plane being behind or beyond the slot through which the wheel *c* projects. This portion in a lower plane is indicated at *i*, a shoulder being provided at *k*. Just beyond the shoulder *k* the cover is formed with a narrow slot *l* in alinement with the slot through which the wheel projects. The object of this construction is to obviate as far as possible the accumulation of threads of glue. In box-making machines, the rapid passage of the blanks frequently causes an objectionable accumulation of threads of glue which become strung out in the direction of the path of movement of the blanks. The structure, as just described, prevents such accumulation, and as soon as a mass of glue threads forms, such mass, or the greater part of it, will drop through the slot *l* and be again melted in the pot or receptacle.

As also shown in Figs. 3 and 4, I provide a scraper *m* having a slot *n* so that said scraper will fit over the wheel *c* to engage the periphery and parts of the sides thereof. Said scraper is formed with two abutments

o between which is mounted a cam *p* on the lower end of a spindle *q* mounted in the cover and having a handle or knob *r*. The spindle *q* is preferably threaded and provided with a nut *s* by means of which it may be clamped in adjusted position. By rotation of the spindle *q* and securing it in adjusted position, the location of the scraper with reference to the glue wheel or disk may be accurately secured.

The reason why the formation of the cover in two different planes, with a shoulder between them, prevents a long accumulation of threads of glue is that when such threads form one end attaches itself to the cover close to the wheel *c*, the other end following the blank, and the threads do not draw out to excessive length before breaking. If they remained on top of the cover, after breaking, they rapidly form an accumulation which interferes with the later passage of blanks. With my improved structure there can be no such accumulation because the free ends of the threads, after breaking, drop down through the slot *l* and return into the heated glue pot.

The sides of the recess *n* in the scraper *m* prevent glue from passing out on the sides of the wheel *c*, thereby enabling me to provide a narrower slot in the cover *d*, resulting in retaining the heat in the glue pot. If the glue remained in thick masses on the sides of the wheel, a wider slot would have to be formed in the cover, or else rotation of the wheel would be interfered with by reason of the cover being cooler than the rest of the pot, such cooler condition resulting in the glue hardening thereon if there is any opportunity for it to do so.

By means of the cam *p*, the scraper can be accurately set to determine just the right quantity of glue to be carried by the periphery of the wheel up through the slot in the cover.

As has been described, the machine is one which, by means of the belts 32, 51, causes the box blanks to move rapidly and continuously in close succession. In such a machine there is a special liability of the glue being drawn out in strings as described, this being further due to the fact that the glue disk or wheel *c* rotates with great rapidity, as has been explained. In spite of the rapid motion of the glue wheel, an excessive amount of glue cannot be carried up through the slot of the cover, so as to be thrown off by centrifugal force, because of the scraper *m*. Just enough glue remains adhering to the disk to be carried up through the slot of the cover to render it certain that the requisite stripe of glue will be applied to the rapidly traveling blanks. There must always be a little more than enough glue, in order that a sufficient amount will be applied to the blanks, and

this slight excess is liable to result in the drawing out of strings of glue by the rapidly passing blanks. The shoulder *k* of the cover, however, being located between the slot for the glue wheel and the slot *l*, which two slots are narrow and in alignment, as shown in Fig. 2, prevents the formation of such an accumulation of glue as would result in the drawing out of strings beyond the receptacle, such glue as does pass beyond the shoulder *k* immediately returning to the receptacle through the slot *l*.

I claim:

1. In a machine having carrier-belts for rapidly and continuously moving blanks in close succession, a continuously operating wheel for applying glue to the blanks following each other through the machine, a glue receptacle having a cover provided with two narrow slots in alignment, said wheel being mounted in the receptacle and projecting through one of the slots, means in said receptacle for preventing the rapidly moving wheel from carrying up an excessive quantity of glue, and means located between the two slots in the cover for detaching glue strings that tend to follow the blanks to permit such strings to drop through the second slot directly into the receptacle.

2. In a device of the character described, a glue receptacle having a slotted cover, a wheel or disk having a portion of its periphery projecting through the slot of the cover, said cover being in a lower plane at the rear of the wheel or disk, the portion of the cover which is in the lower plane having an opening to permit the return of glue strings to the interior of the receptacle.

3. In a device of the character described, the combination with a glue receptacle having a slotted cover and a disk or wheel partially projecting through the slot of the cover, of a longitudinally adjustable scraper located within the receptacle and extending along the sides of the wheel or disk, means being provided for preventing lateral movement of the scraper relatively to the wheel or disk, adjusting means for said scraper comprising abutments carried by the scraper, a cam between said abutments, means for adjusting said cam, and means for locking the cam in adjusted position.

In testimony whereof I have affixed my signature, in presence of two witnesses.

ELIE W. LABOMBARDE.

Witnesses:

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HELEN GEORGE.