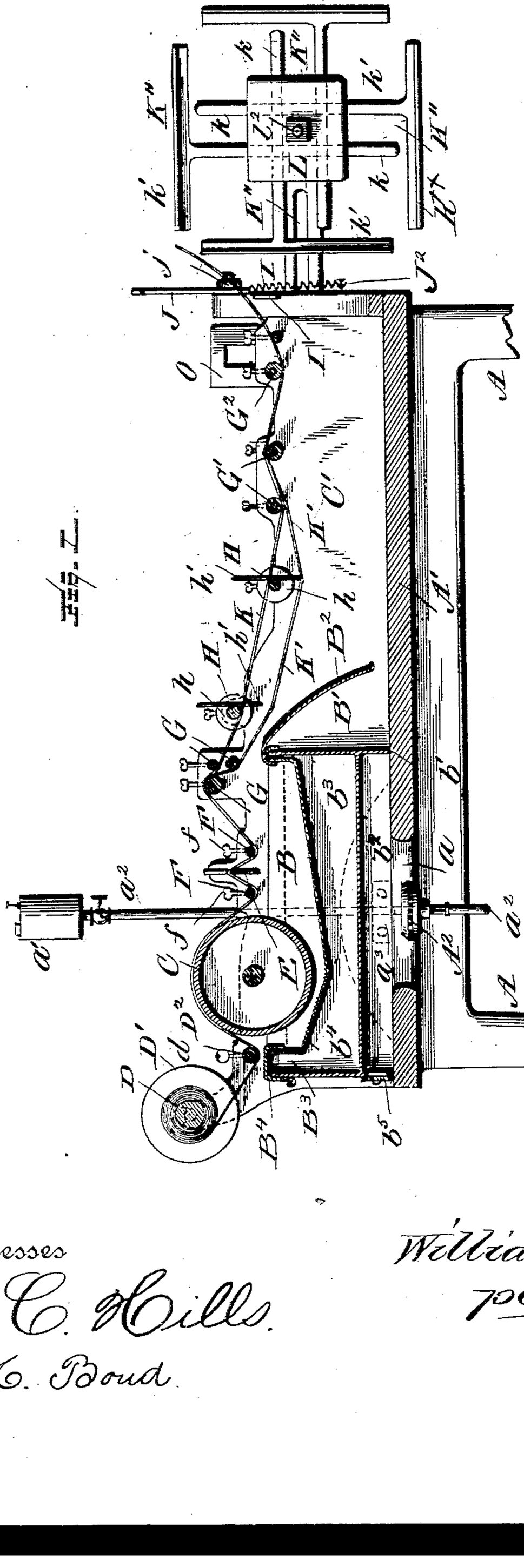
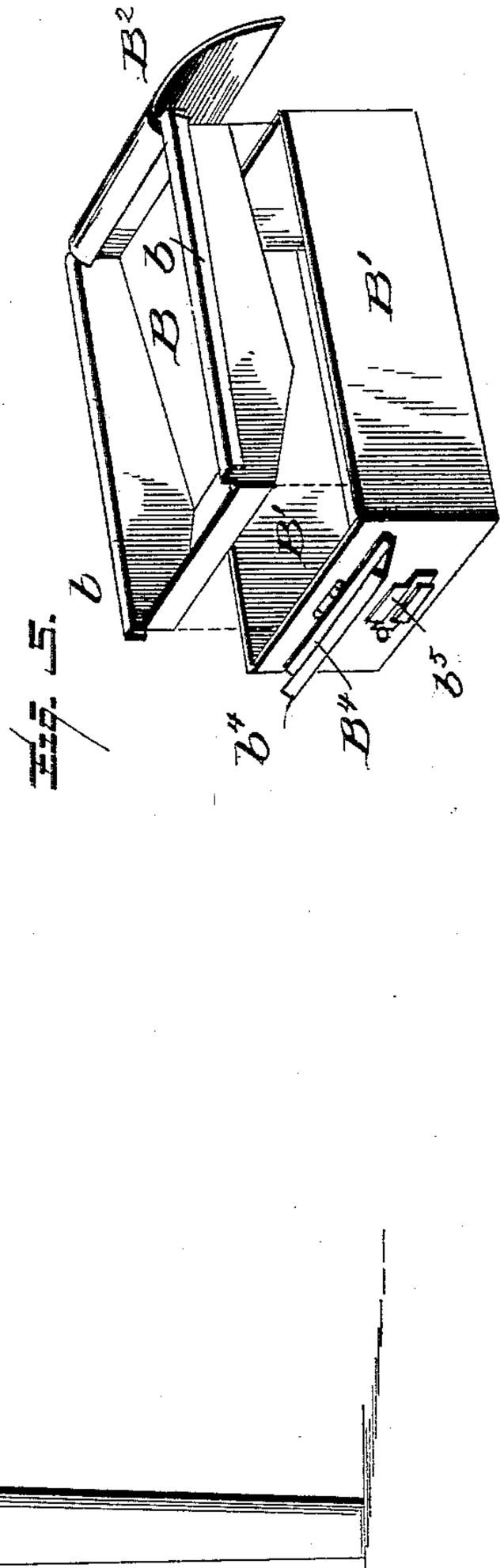
(No Model.) 2 Sheets—Sheet 1

W. BRANDSTAEDTER.

BOX COVERING MACHINE.

No. 504,551. Patented Sept. 5, 1893.





Witnesses
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E. H. Bond.

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(No Model.)

2 Sheets—Sheet 2.

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Fig. 2.

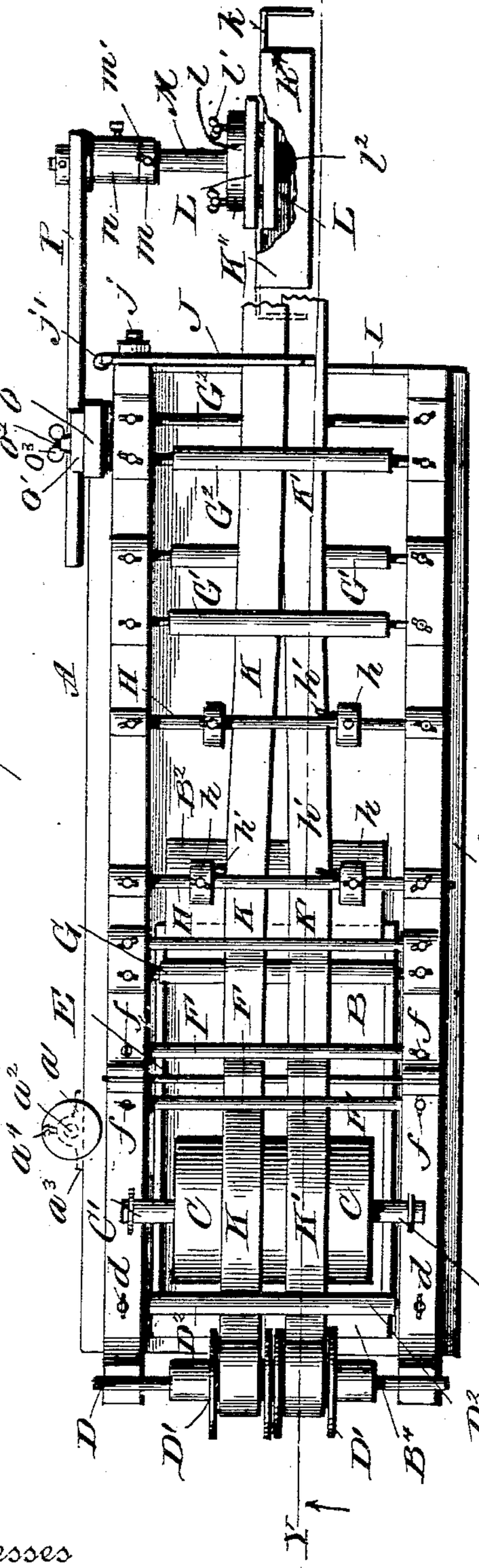

Fig. 4.

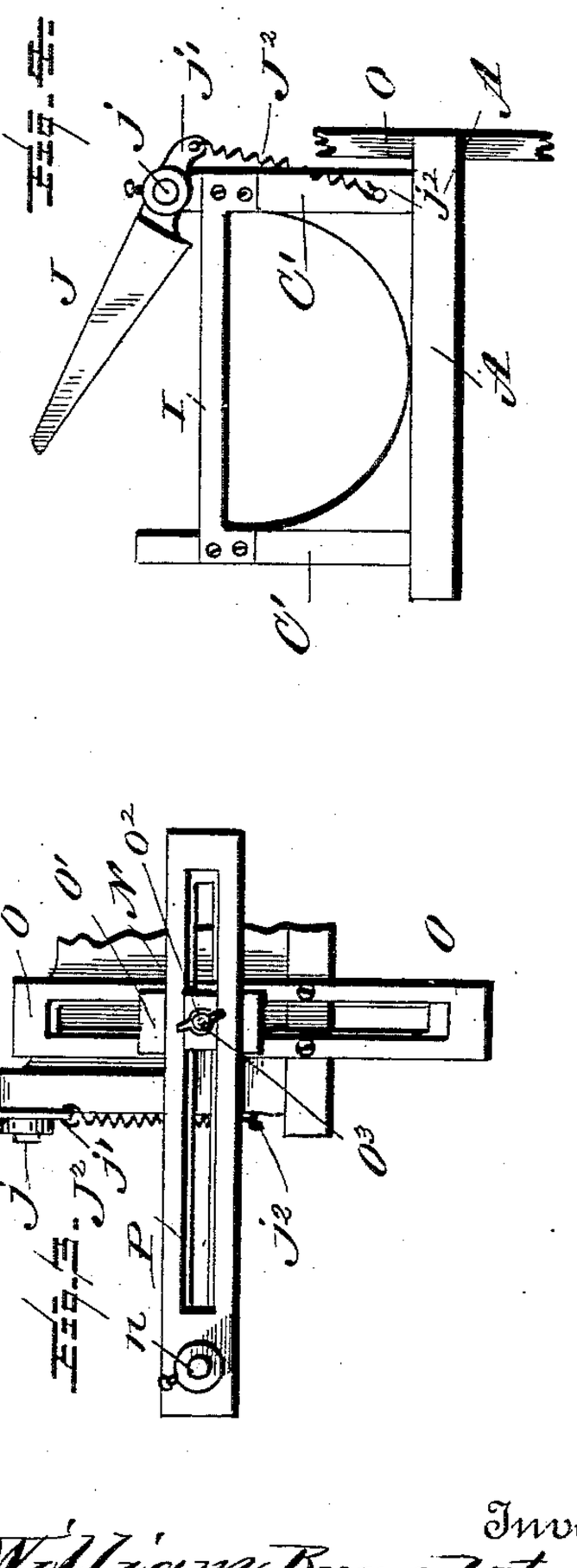

Fig. 5.

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UNITED STATES PATENT OFFICE.

WILLIAM BRANDSTAEDTER, OF HANOVER, PENNSYLVANIA.

BOX-COVERING MACHINE.

SPECIFICATION forming part of Letters Patent No. 504,551, dated September 5, 1893.

Application filed May 31, 1892. Serial No. 435,017. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM BRANDSTAEDTER, a citizen of the United States, residing at Hanover, in the county of York and State of Pennsylvania, have invented certain new and useful Improvements in Box-Covering Machines; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters of reference marked thereon.

The present invention has relation to that class of machines for covering the exterior of boxes with paper, cloth, or other like material, in which the covering is fed through the machine in strips and coated with paste from a paste-supplying device, then applied to the box and the strips afterward severed by a knife or other severing device.

It is the object of the invention to improve the construction of this class of machines, whereby the work of covering the box will be accomplished quickly and effectively, and consists in a machine constructed substantially as shown in the drawings and hereinafter described and claimed.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a longitudinal vertical section through the machine on the line Y Y of Fig. 2, looking in the direction of the arrows. Fig. 2 is a plan with a portion broken away. Fig. 3 is a detail of the cross showing its manner of adjustment. Fig. 4 is an end elevation of the strip-severing mechanism. Fig. 5 is a perspective view of the paste tank and jacket, removed.

Like letters of reference indicate like parts throughout the several views in which they appear.

Referring now to the details of the drawings by letter, A designates a suitable support or table designed to support the operating parts. The top A′ of the table has near one end an opening *a* over which is arranged the paste tank, and beneath or in which opening is arranged the heater A^2, which in this instance is shown as a gasoline burner of which *a′* is the supply receptacle, and a^2 the supply pipe from the said receptacle. This pipe is held in a suitable bearing a^3 on the frame or table and is there held by a set screw or analogous means a^4, as seen by dotted lines in Fig. 2, so that the burner may be adjusted with relation to the paste tank as may be desired. The burner can thus be lighted either under the machine, or, by loosening the set screw, the tank or receptacle can be let down to the body of the machine and then given a half turn which will bring the burner to the outside of the frame when it can be lighted and then turned back to its normal position where it will be held by its set screw engaging the supply pipe as before.

B is the paste or adhesive receptacle; it is formed with double inclined bottom as seen in Figs. 1 and 5 and with side flanges *b* as seen in Fig. 5, which are designed to engage the upper edges of the side walls of the water tank B′ as seen in Fig. 1, the receptacle B being designed to set down within the tank B′ and at its outer end it is provided with a shield B^2 extending outward and which serves to keep the heat away from the strips of paper or cloth as they are passing over the rollers soon to be described. The tank B′ has a surrounding flange *b′* which rests upon the top of the table and thus forming a chamber or space b^2 for the heat, as will be seen from Fig. 1, the receptacle B being of less depth than the tank as shown so as to provide a space b^3 for water between the heat and the bottom of the paste receptacle as clearly shown in Fig. 1. Any suitable means may be employed for heating. All the heat is utilized by reason of the arrangement of parts above described. The paste receptacle is of less length than the water tank so as to leave a filling opening B^3 at the end as seen in Fig. 1, which is closed by a drop-lid B^4 hinged to the end of the water tank and having a flange b^4 to fit over the end of the paste receptacle as seen in Fig. 1 and close the said opening. This permits of refilling of the tank when necessary without taking off the paste receptacle and also the drop-lid acts as an automatic valve to allow of the automatic escape of any surplus steam that may be formed. Air can be admitted to the space b^2 or the heat reduced by means of the draft slide or ventilator b^5 provided at one end of the flange

of the water tank as seen in Figs. 1 and 5. The paste receptacle is so arranged relatively to the other parts which will soon be described that the paste as it is scraped will be removed from the underside of the paper or other material being operated upon and deposited back into the said paste receptacle.

C is the paste roller; it is carried by a shaft suitably journaled in bearings upon the upper edges of the sides C′ of the table and this roller is arranged to revolve with its lower portion in the paste receptacle as seen in Fig. 1; it may be of any desired character and may or may not be hollow as seen in Fig. 1 as may be desired.

D is a shaft removably supported in suitable bearings in advance of the paste roller as seen in Figs. 1 and 2 and on this shaft are supported the desired number of spools D′ upon which is designed to be rolled the paper, cloth or other material to be employed. Only two are shown but others may be employed according to the character of the work.

D^2 is a cross bar or rod arranged between the shaft D and the paste roller as shown in Figs. 1 and 2, and this rod or bar is vertically adjustable in any suitable manner as for instance by set screws *d* so that it may be made to press with more or less force on the paper and keep it in close contact with the paste roller as seen in Fig. 1.

E is a scraper arranged to be adjusted vertically in any suitable manner and this scraper is located just beyond the paste roller and over the paste receptacle so that the paste removed from the paper thereby will fall back into the paste receptacle. F are bars or rods, one upon each side of the scraper and these are rendered adjustable vertically by set screws *f* and are for the purpose of guiding the paper upon each side of the scraper.

G are rods suitably held in the sides C′ and one of them may be a roller over which the paper passes and after passing over this roller the two strips are passed, the one under the top rod and the other under the lower rod, as seen in Fig. 1, to bring them in different vertical planes as seen in said Fig. 1; and at a suitable point in the sides C′ are held the rods or bars G′ on the same horizontal plane but one in advance of the other as shown in Fig. 1, and G^2 are other bars or rods all adjustably held in the sides C′ as shown and which may be of the number shown or more or less as may be found most expedient. All of them serve as rollers over which or under which the paper or other material travels.

Between the rods G and G′ are the rods or shafts H upon which are adjustably sleeved the collars *h* which carry the depending rods or arms *h*′ which engage the strips of paper and serve to hold them at the regulated distances apart. The collars on the second shaft H are set nearer together than are the others so as to cause the two strips of paper to approach each other as seen in Fig. 2 so that after they pass said point the edge of one will overlap the adjacent edge of the other as seen in Fig. 2 toward the right. This constitutes what I term the roller system which is subject to slight variations as occasion may require.

I is a stationary cutter suitably secured at the end of the table as seen in Figs. 2 and 4 and J is the movable knife which is pivoted near one end as at *j* and has a short arm *j*′ extended beyond the pivot as seen in Fig. 4 to which is connected one end of the spring J^2 the other end of which is connected with some fixed part as seen at j^2. This knife is to be operated by hand or foot to sever the strips when desired and is automatically returned to its normal position, that shown in Fig. 4, by the spring.

K and K′ are the strips of paper or cloth or other material and they are shown as being wound upon their spools and the ends led over and under the paste roller and various rods and rollers and the scraper, and carried to the end of the machine where they are to be applied to the box.

The box is designed to be held on the box-holder K^2 which is constructed as seen in Figs. 1 and 2. It may be formed of any suitable material but I prefer thin sheet metal from which the four like pieces $K^\times$ are stamped or otherwise formed. Each part $K^\times$ comprises an arm *k* at the outer end of which is a right-angled portion *k*′ which forms one side of the box-holder as seen best in Fig. 2, the right angled portion extending at a right angle from the arm as seen in Fig. 1. These four pieces are adjustably connected together so as to be adjusted for different sized boxes in the following manner:—Each arm *k* is passed between two plates L, upon the outer face of one of which is a boss or hub *l* provided with thumb screws *l*′ which engage the other plate and serve to draw the two together to clamp the arms *k* between them; a screw or bolt l^2 passed through from the other plate may sometimes be employed if desired for the attachment of special box forms. The boss or hub *l* carries a shaft M provided with collars *m* and set screws *m*′ as seen in Fig. 2, and this shaft is designed to be supported rotatably in the shank or bearing *n*, which is carried by one arm of the cross N, as seen best in Fig. 3. This cross is constructed as follows:—O is a slotted bar secured in a vertical position at the end of the machine and in the slot of this arm or bar is designed to move a slide O′ on the under side of which is a nut with which engages a thumb screw O^2 which in turn is passed through a hole in the nut O^3 which is designed to slide in the slot of the horizontal slotted arm or bar P as seen in Fig. 3. This horizontal arm or bar carries the bearing *n* above referred to. It will be readily seen that by this adjustment the box-holder may be adjusted to any desired position vertically or horizontally or both; tightening of the thumb screw holds the parts in their adjusted positions. By the use of this cross all

positions for the use of different attachments can be readily obtained.

The parts constructed and arranged as above described constitute what I at present consider as the preferable way of carrying out my invention.

The operation will be readily understood. The strips of paper or cloth are fed from the spools over the paste roller and thence over the scraper and the various rollers and by the depending arms or rods *h'* caused to approach each other and to overlap and become compressed into one composite strip before they reach the box which is designed to be carried by the box-holder. Here it is attended to by the attendant in the usual manner.

Some of the advantages attending my construction and arrangement of parts may be briefly stated as follows:—The shears or cutting apparatus being stationary is stronger and more steady and insures a truer cut and less tiring than shifting or suspended shears. The roller system is important for the reason that it keeps the several strips apart before the composition or bringing together is accomplished; the glue under the upper strip is not scraped by the edge of the lower strip when pushed over each other and thus glue soiled edges are prevented. The strips reach the box after they have been pressed together by the rollers; a different tension can be given when more than one strip is on the machine, according to the width, strength and nature of the paper or cloth. The paper is under the complete control of the operator and there is no curling, swaying and flopping of the paper or cloth. The guiders act not only to guide the paper but also form a rest therefor. The guide formed by the bars and rollers G transfers the strip entirely under the covering paper without interference of the edges of the same.

The advantages of the paste apparatus, the cross and the box-holders have already been set forth in part.

Modifications in detail may be resorted to without departing from the spirit of the invention or sacrificing any of its advantages. The strip guide at the left hand side of the rod nearest to the roller G and attached to the collar *h* has the shape of the letter **U** in lying position. The upper part of this guide is on a horizontal level with the rod to which the collar *h* is attached while the lower part is suspended below the same. This guide transfers the staying strip for the setting in the bottoms to boxes entirely under the covering paper or strips, without interference of the edges of the same.

What I claim as new is—

1. In an organized machine for the purpose described, a paste supplying device, consisting of a tank having a flange upon its bottom and a damper, a paste receptacle removably supported within the tank and provided at its respective ends with a shield and a hinged flanged cap, suitable guide-rollers for the strips of paper, a severing mechanism therefor, and a box holding device, substantially as and for the purpose set forth.

2. The combination with the tank having surrounding flange below its bottom, a hinged flanged cap and a damper, of a paste receptacle having side flanges and carrying a shield at one end, substantially as and for the purpose specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

WILLIAM BRANDSTAEDTER.

Witnesses:
JOHN A. MOORE,
A. M. BEECHER.