(No Model.) 4 Sheets—Sheet 1.

W. C. RAND.

MACHINE FOR COVERING WEBBING FOR BOOT STRAPS.

No. 453,976. Patented June 9, 1891.

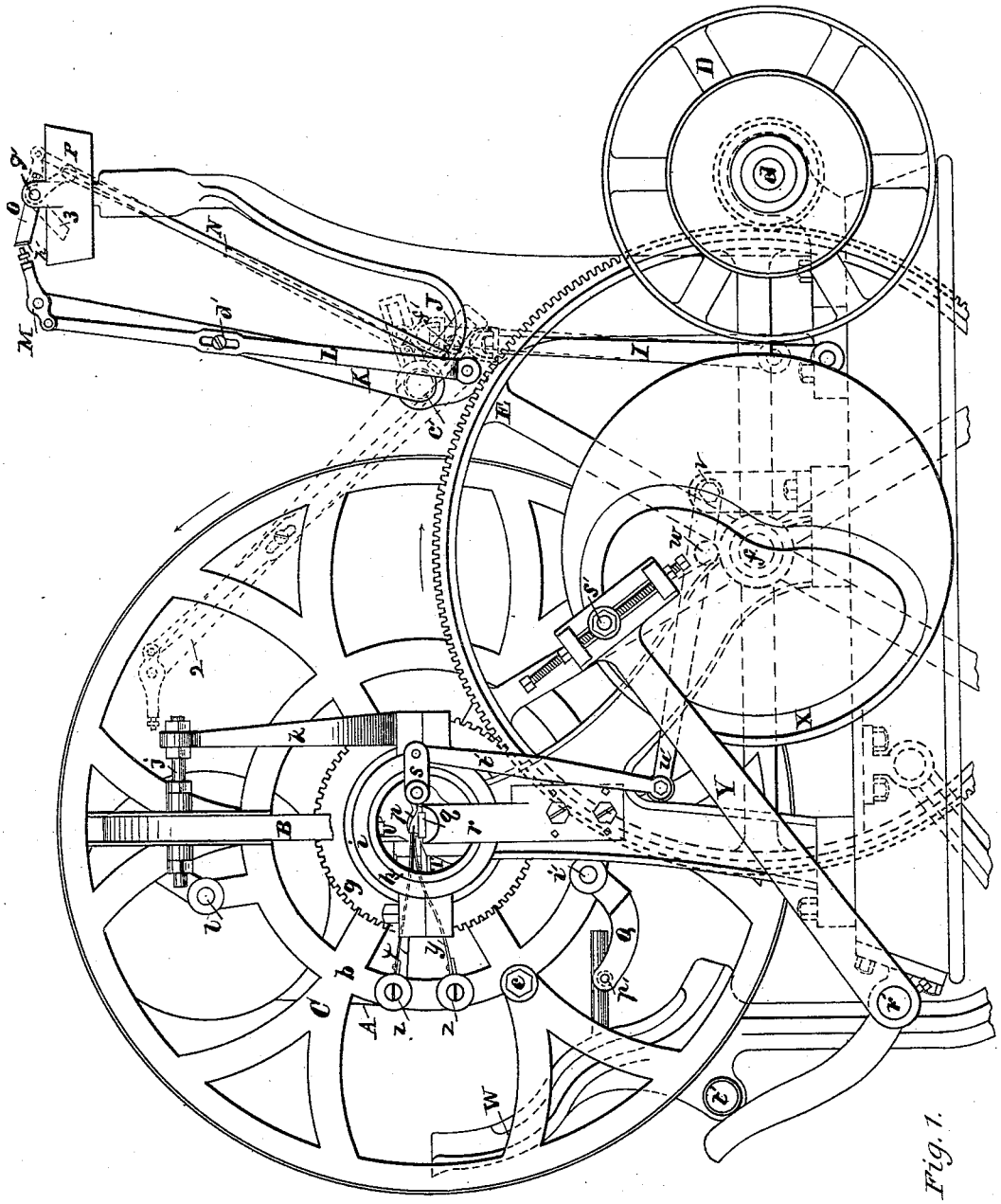

Fig. 1.

Witnesses:
Z. F. Bryant,
Fred'k W. McArdle

Inventor:
William C. Rand,
per Edw. Dummer, Atty.

(No Model.) 4 Sheets—Sheet 2.

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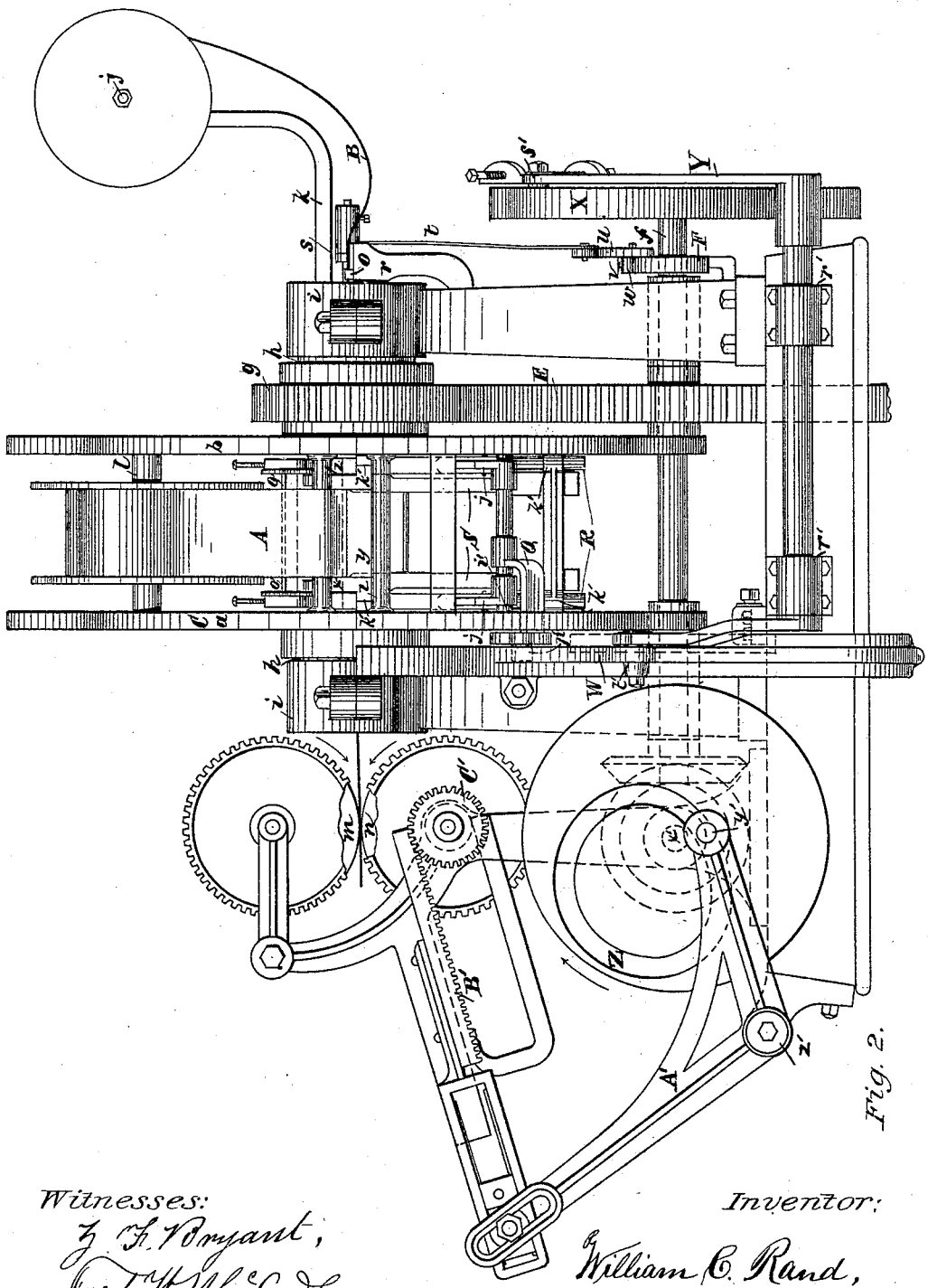

Fig. 2.

Witnesses:
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William C. Rand,
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(No Model.) 4 Sheets—Sheet 3.

W. C. RAND.

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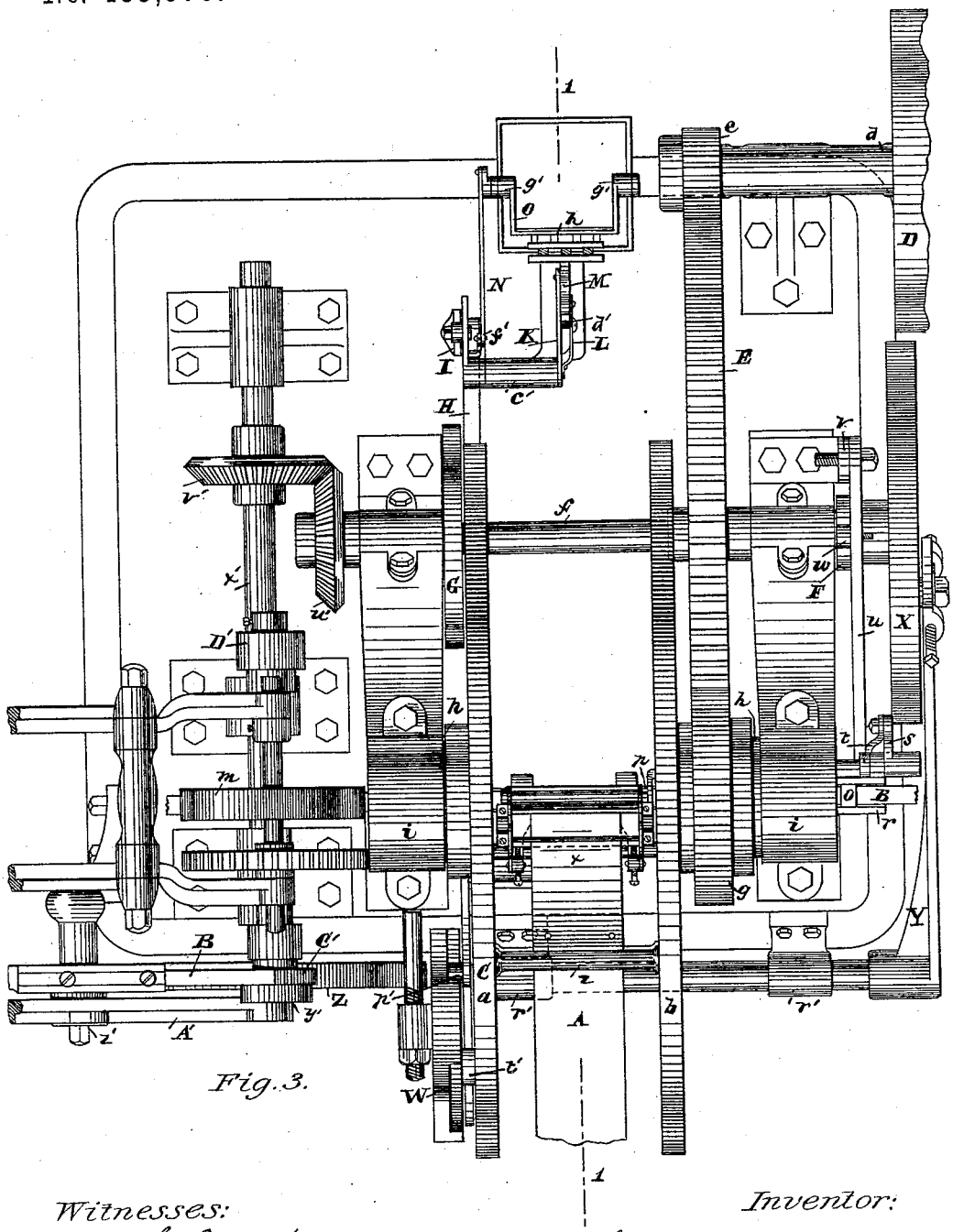

Fig. 3.

Witnesses:
J. F. Bryant,
Fred W. McArdle.

Inventor:
William C. Rand,
per Edw. Dummer, Atty

(No Model.) 4 Sheets—Sheet 4.

W. C. RAND.

MACHINE FOR COVERING WEBBING FOR BOOT STRAPS.

No. 453,976. Patented June 9, 1891.

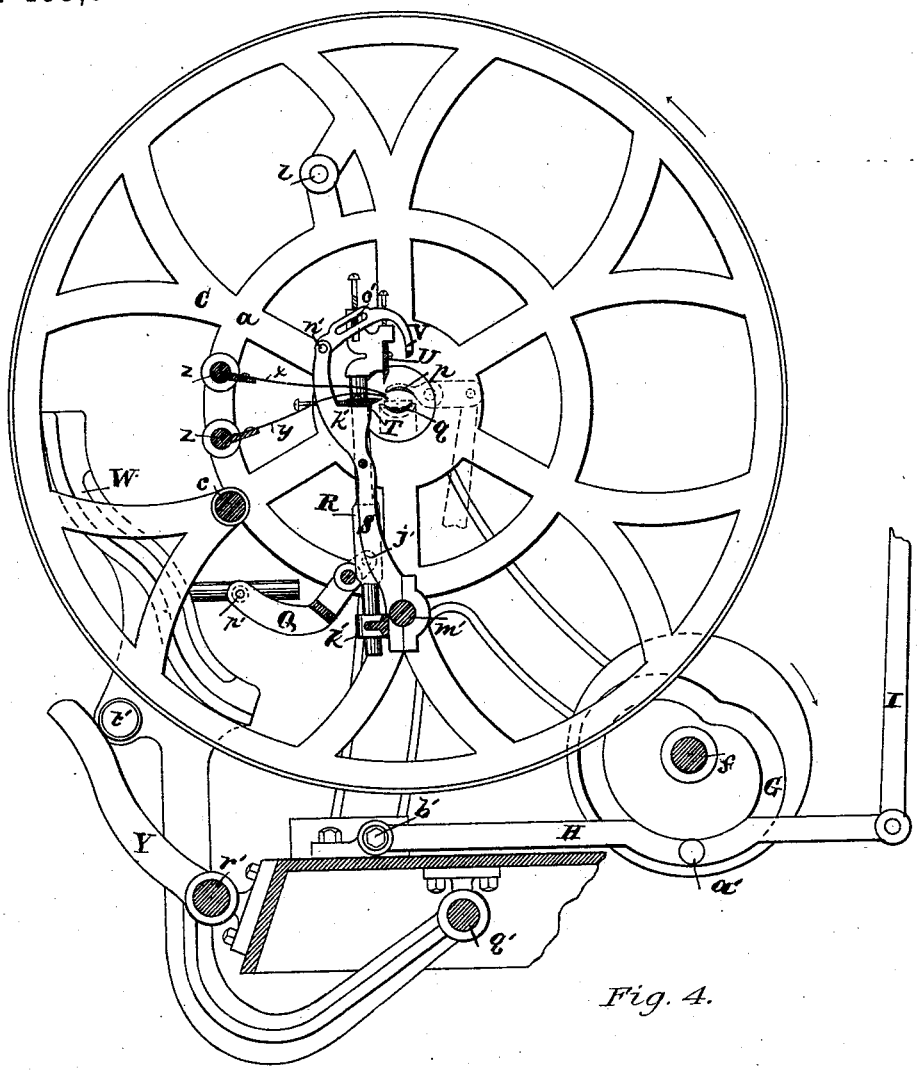

Fig. 4.

Witnesses:
F. F. Bryant,
Fred W. McCardle.

Inventor:
William C. Rand,
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UNITED STATES PATENT OFFICE.

WILLIAM C. RAND, OF LEWISTON, MAINE, ASSIGNOR OF ONE-HALF TO CLARENCE E. THURLOW, OF SAME PLACE.

MACHINE FOR COVERING WEBBING FOR BOOT-STRAPS.

SPECIFICATION forming part of Letters Patent No. 453,976, dated June 9, 1891.

Application filed January 10, 1891. Serial No. 377,372. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM C. RAND, a citizen of the United States, and a resident of Lewiston, in the county of Androscoggin and State of Maine, have invented a new and useful Improvement in Machines for Covering Webbing for Boot-Straps, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to machines for covering webbing, designed especially for boot-straps with paper or the like to protect the webbing from being soiled during the manufacture of the boots and while otherwise exposed.

The object of the invention is a machine which will automatically wind the paper transversely around the strip of webbing as many times as desired, preferably two for each strap, paste the paper so wound, cut the paper thus wound from the continuous strip of paper, and put around the continuous strip of webbing such coverings at the intervals required so that each strap will have the parts thereof exposed and covered as desired.

My invention consists in the devices and combination of devices hereinafter described, and specifically pointed out in the claims.

In the drawings, (four sheets,) Figure 1 is a side elevation, Fig. 2 a front elevation, and Fig. 3 a plan view, of so much of a machine embodying my invention as is sufficient for an illustration of the same. Fig. 4 is a vertical section of certain parts, taken in the direction of lines 1 1 in Fig. 3.

The machine shown is designed to wrap paper A twice around the webbing B for each strap, and to have the carrier C, which consists of two plates or wheels *a* and *b* joined firmly together, as by means of braces *c*, make three revolutions in the direction of the arrow, while the necessary operations are performed on the portion of webbing required for one strap. Power may be applied by means of a pulley D on a shaft *d*, on which is a pinion *e*, which engages with a gear E on a shaft *f*. The shafts *d* and *f* have bearings on the frame of the machine, as shown. While the carrier C makes three revolutions, as above specified, the shaft *f* and gear E make one, motion being conveyed to a pinion *g*, fixed to the carrier to revolve about the same center, and in engagement with the gear E. The carrier has a hollow shaft or hubs *h*, which revolve in bearings *i*, fixed to the frame, and which have openings concentric with the hollow hubs, as shown. A roll of the webbing is placed on a stud *j* to revolve freely thereon, this stud being fixed to the stationary frame by means of a stand *k*. A roll of paper A is placed on a rod or stud *l* to revolve freely thereon, this rod or stud being supported by the revolving carrier. The webbing is fed along, as required, by being drawn nearly or quite centrally through the opening in the hubs by means of two feed-rollers *m* and *n*, the webbing being directed to the center of said hubs by means of a guide *o*, and passing between two clips *p* and *q*, extending longitudinally with them. The lower *q* of these clips remains stationary, being fixed at one end to a stand *r*. The upper *p* of these clips is pivoted at one end to the stand *r*, to swing slightly upward while continuing longitudinal with the other clip. This clip is swung by means of a lever *s*, rod *t'*, lever *u*, pivoted at *v*, and a stud *w*, bearing on a cam F on the shaft *f*. After the webbing has been drawn along by the rollers *m* and *n* a sufficient distance the clip *p* is swung to press down on the webbing, and after the paper has been wound the required number of times around the clips and webbing between them, pasted, and the tube of paper thus formed has been slid along from off the clips the clip *p* is swung up. The strip of paper extends from the roll thereof to and between two flexible plates *x* and *y*, each fastened at its outer end to a rod or stud *z*, fixed to the carrier C, the outer ends being at a distance apart, and the inner ends adjusted so as to spring one to the other. The one *x* of these plates is of such length that the inner end will drag on the upper clip *p* when the latter is swung up and the carrier is in motion, but will spring down so near the lower clip *q* as to cause the end of the paper thereat to fall on the clip *q* or webbing, and hence be pinched between these clips when the clip *p* is swung onto the clip *q*. On the continued revolution of the carrier

the paper will be wound around the clips p and q and the webbing between them.

On the shaft f is another cam G, being a groove in a disk, as shown, in which moves a stud a' on a lever H, pivoted at b' and having pivoted thereto a rod I. The other end of this rod is pivoted to a lever J, which is pivoted to a fixed stand at c', and has fixed thereto at the other end of the pivot at c' an arm K. To this arm K is pivoted another lever L at d', there being a slot in the lever L for the movement of the pivot d'. The lower end of the lever L is also pivoted to the fixed stand. To the outer ends of the arm K and lever L is pivoted a short lever M, as shown, the outer end of which carries a dauber. To the lever J is also pivoted a rod N at f'. The other end of the rod N is pivoted to a short lever O, which is pivoted to a fixed stand at g'. The lever O carries a pad h', which is located at a suitable position above the fixed box P for the paste.

The operation of the cam G, levers, and rods just described is such that after the paper has been wound about the clips p and q and the webbing the dauber will be carried down onto the paper lying on the upper clip p to leave paste thereon, and will then be carried back and swung over to meet the pad h', this pad having in the meantime been swung down so as to dip into the paste-box P.

Dotted lines at 2 in Fig. 1 indicate a position of dauber and levers connected thereon while moving toward the clips, and dotted lines at 3 in the same figure indicate the pad while in the paste-box.

To the carrier C is pivoted at i' a lever Q, to the inner short arm of which is pivoted at j' a bar R, which slides in guides, as at k', fixed to the lever S. The lever S is pivoted to the carrier C at m'. To the lever S is fixed a blade T and to the bar R a blade U. These blades are set with reference to each other to the clips p and q and to the plates x and y, as shown, and so as to cut, when brought together as a pair of shears, the paper between them.

To the lever S is pivoted, at n', a presser V, which has a slot, and is pivoted at o' to the bar R.

The lever Q is operated by means of a pin p' thereon, which moves in the cam or slot W. This cam is only in position to receive the pin p' during a certain part of the time, the arm or lever bearing the same being pivoted to the frame at q' to swing as required. This arm or lever is swung by means of a cam X on the shaft f and lever Y, pivoted at r', one end of this lever bearing a stud s', which moves in the slot of the cam X, and the other end of the lever working against a pin t' on the arm or lever of the cam W.

The operation of the cams X and W, levers, rods, blades, and presser just described is such that after the paper has been wound around the clips and webbing therebetween a sufficient number of times—two in this case—the presser V comes down onto the paper, pressing the latter onto itself and the upper clip p, so as to cause the paper to adhere, as required, by means of the paste previously put thereon. Thereafter the blades come together, cutting the paper strip, leaving the tube of paper formed by the several windings and by the pasting on the clips and the webbing.

By means of miter-gears u' and v' a shaft x' is driven at the same speed with the shaft f. On the shaft x' is a wheel having a cam-groove Z, in which moves a pin y' on a lever A, pivoted at z'. To the other end of this lever is pivoted a slide bearing a rack B, which engages with a pinion C. This pinion is located concentric with the shaft of the feed-roller n. The connection of this pinion and the feed-roller or shaft thereof, details of which being inclosed in the casing D, are not shown in the drawings, is such as is well known for the purpose of getting an intermittent revolution of a wheel or shaft in one direction through means of another wheel or shaft moving alternately in reverse directions.

The feed-roller m is caused to revolve with the roller n by means of the gears on their several shafts, as shown. Thus by means of the cam Z the rack B, and gears the feed-rollers m and n are caused to revolve in the direction of the arrows when required—namely, to draw along a sufficient length of webbing for one strap having wound thereon paper for the required part thereof, and therefore to draw into position another length of webbing for another strap to receive the paper as before, and so on.

Adjustment of the several parts of the mechanism may be such as is shown and required and as will be apparent to a skilled mechanic. So, also, there may be modification of the mechanism without departing from the invention, the several operations of which may be summed up as follows: The webbing is drawn from a roll on a stationary support. The paper is drawn from a roll which is supported by a carrier. This carrier revolves about a central line at which is that part of the webbing operated upon. The webbing passes between clips longitudinal therewith and closed onto the same, so that the paper is wound around both the clamp formed by the clips and the webbing. The clips also hold the free end of the paper, which is forced therebetween. The paper is wound once around, pasted, wound again around, and then pressed and the strip cut so as to form a tube. The webbing is drawn along intermittently to remove, as required, the part having the desired covering of paper thereon, and to put into position the part to be operated on.

I claim as my invention—

1. In a machine for covering webbing with paper, the combination of clips pivoted with reference to each other and on a stationary support for holding the webbing, and a car-

rier supporting the paper, revoluble about a central line at which is that part of the webbing which is held by said clips, substantially as set forth.

2. The combination of a stationary clip, a movable clip to close onto the stationary clip, a carrier revoluble about said clips, which are at or near the center of said carrier, and a pivot for a roll of paper supported by said carrier, substantially as specified.

3. The combination of a clamp suitable for holding webbing, formed of a stationary clip and a pivoted clip, a cam and means for operating the pivoted clip, and a carrier suitable for supporting a strip of paper and revoluble about said clamp, which is at or near the center of said carrier, substantially as specified.

4. The combination of a clamp for webbing, of which one element or clip thereof is movable, a carrier for a strip of paper revoluble around said clamp, and plates supported by said carrier between which the paper passes to said clamp, one of said plates being in position to put the free end of the paper between the clips during a part of the revolution of the carrier and while the elements or clips of the clamps are apart, substantially as set forth.

5. The combination of a clamp for webbing, a revoluble carrier to support paper and to wind the strip thereof revoluble about said clamp, and cutting-blades supported by said carrier and in suitable position with reference to said clamp as to cut the strip of paper continuing around said clamp, substantially as set forth.

6. The combination of a clamp for webbing on a stationary support, a carrier for paper revoluble about said clamp, and an arm or a lever supporting a dauber and pivoted on a stationary support in such relation to said carrier and clamp as to close down onto said clamp or paper thereon, substantially as set forth.

7. The combination of a clamp for holding webbing in such relation to a carrier for a strip of paper as to be covered by winding paper transversely around the clamp and webbing and two levers pivoted to a stationary support and to an arm or lever supporting a dauber, said two levers being also pivoted to each other, whereby on the swinging of said levers the dauber is reversed, carried onto said clamp or paper thereon, and brought in position to meet a pad alternately, substantially as set forth.

8. The combination of a clamp for holding webbing in such relation to a carrier for a strip of paper as to have the paper wound transversely thereon, two swinging levers pivoted to each other, to a stationary support, and to an arm or lever supporting a dauber, and a pad pivoted in suitable relation to a box, whereby said dauber will be carried and reversed to meet said clamp or paper thereon and said pad, the latter also being swung alternately in and out of said box, substantially as specified.

9. The combination of a revoluble carrier for a strip of paper, a clamp for a strip of webbing at the center of said carrier, feed-rollers for the webbing, and mechanism to open and close said clamp and move said feed-rollers intermittently, substantially as specified.

10. The combination of a revoluble carrier to support a roll of paper, clips or a clamp for a strip of webbing at or near the center of said carrier, whereby the paper will be carried around the webbing, a stationary support for a roll of the webbing, and feed-rollers for the webbing, intermittently revolved, substantially as specified.

11. The combination of a revoluble carrier to support a roll of paper, clips or a clamp for webbing at or near the center of said carrier, whereby the paper will be carried around the webbing, a stationary support for a roll of the webbing, a guide for the webbing to direct the same to said clamp, and a cam for operating a clip or member of said clamp, substantially as set forth.

12. The combination of a clamp for a strip of webbing, a cam for operating a member of said clamp, a carrier for a roll of paper revoluble about said clamp, blades connected with said carrier to revolve therewith, and a cam for operating one of said blades, substantially as set forth.

13. The combination of a revoluble carrier, two clips to form a clamp at the center of said carrier, a cam to operate one of said clips, two blades and a presser near said clamp and carried by said carrier, a cam for operating one of the blades, a dauber and levers and a cam for operating the same, and feed-rollers to draw the material between said clips, substantially as described.

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Witnesses:
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CLARENCE E. THURLOW.