

No. 635,160.

Patented Oct. 17, 1899.

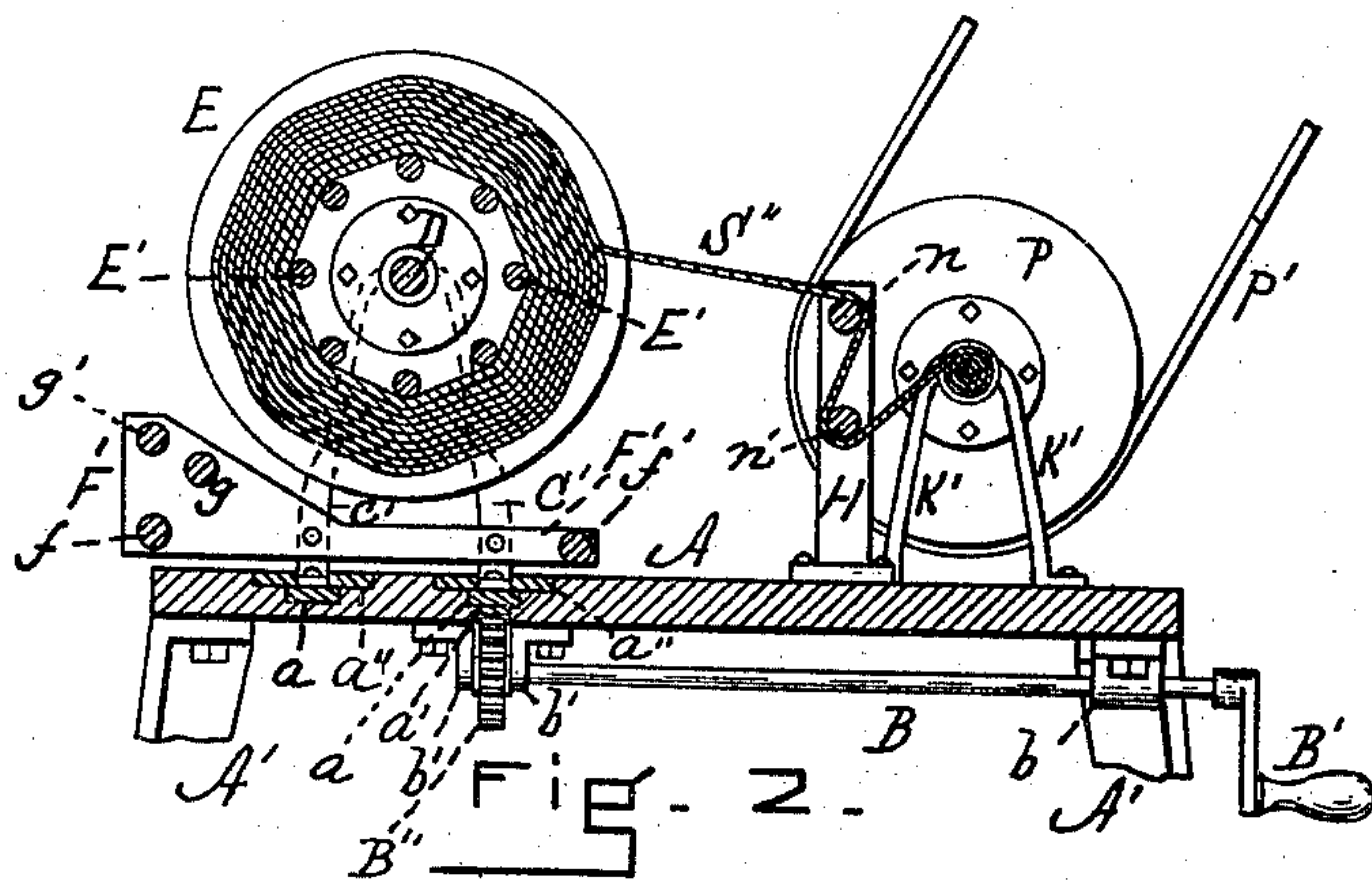
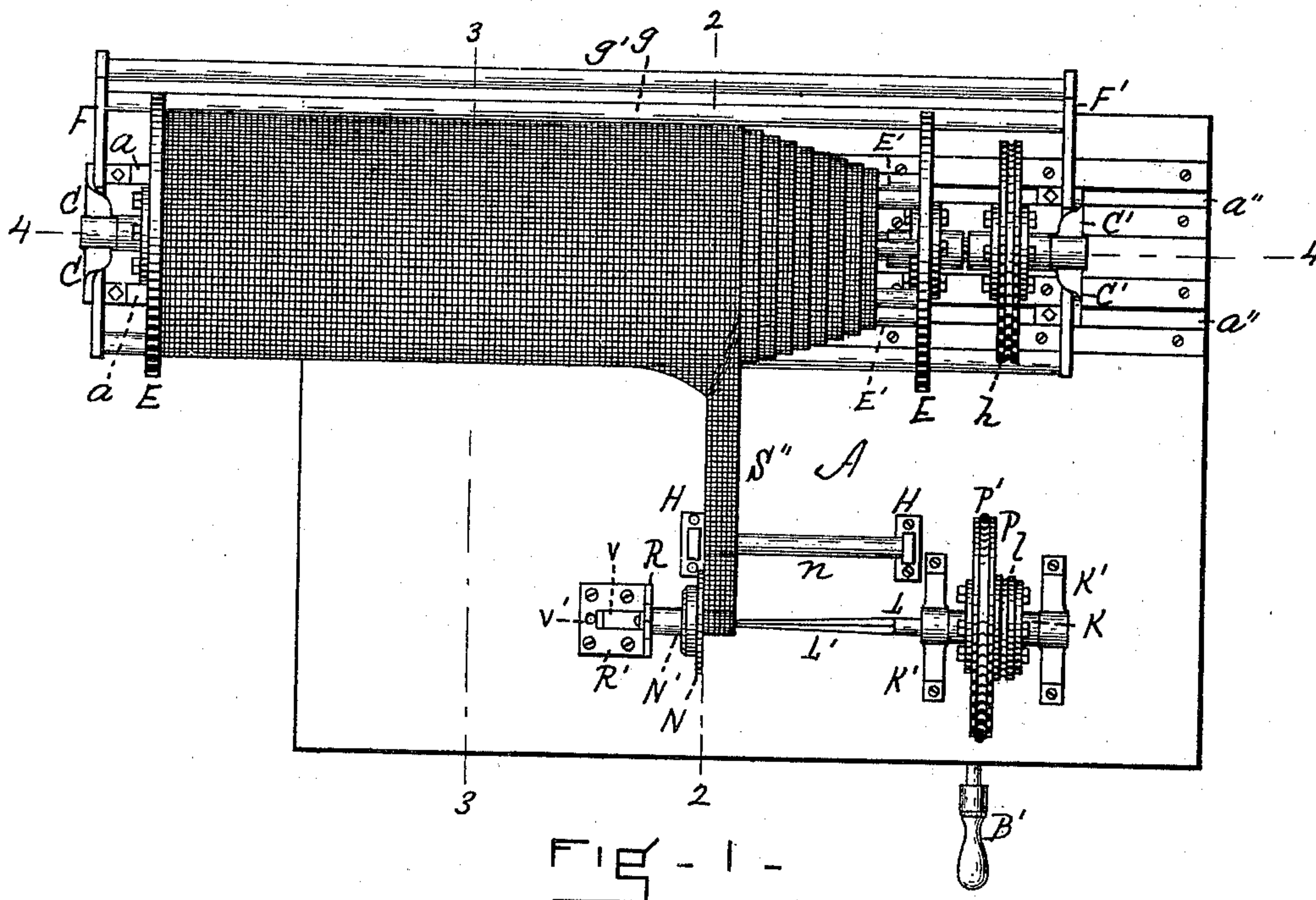
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MACHINE FOR MAKING AND WINDING SURGICAL BANDAGES.

(Application filed July 22, 1898.)

(No Model.)

2 Sheets—Sheet 1.



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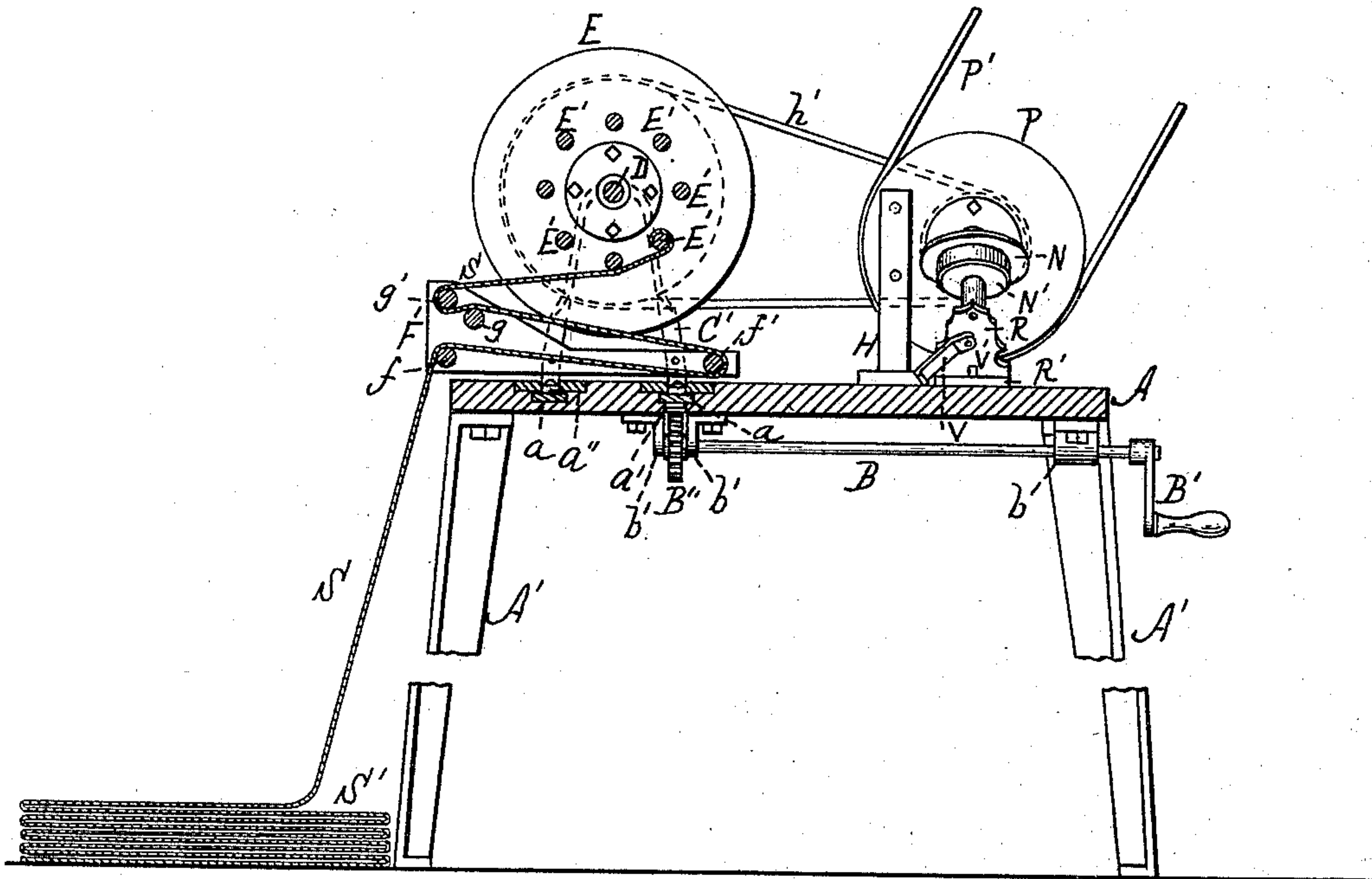


Fig. 3.

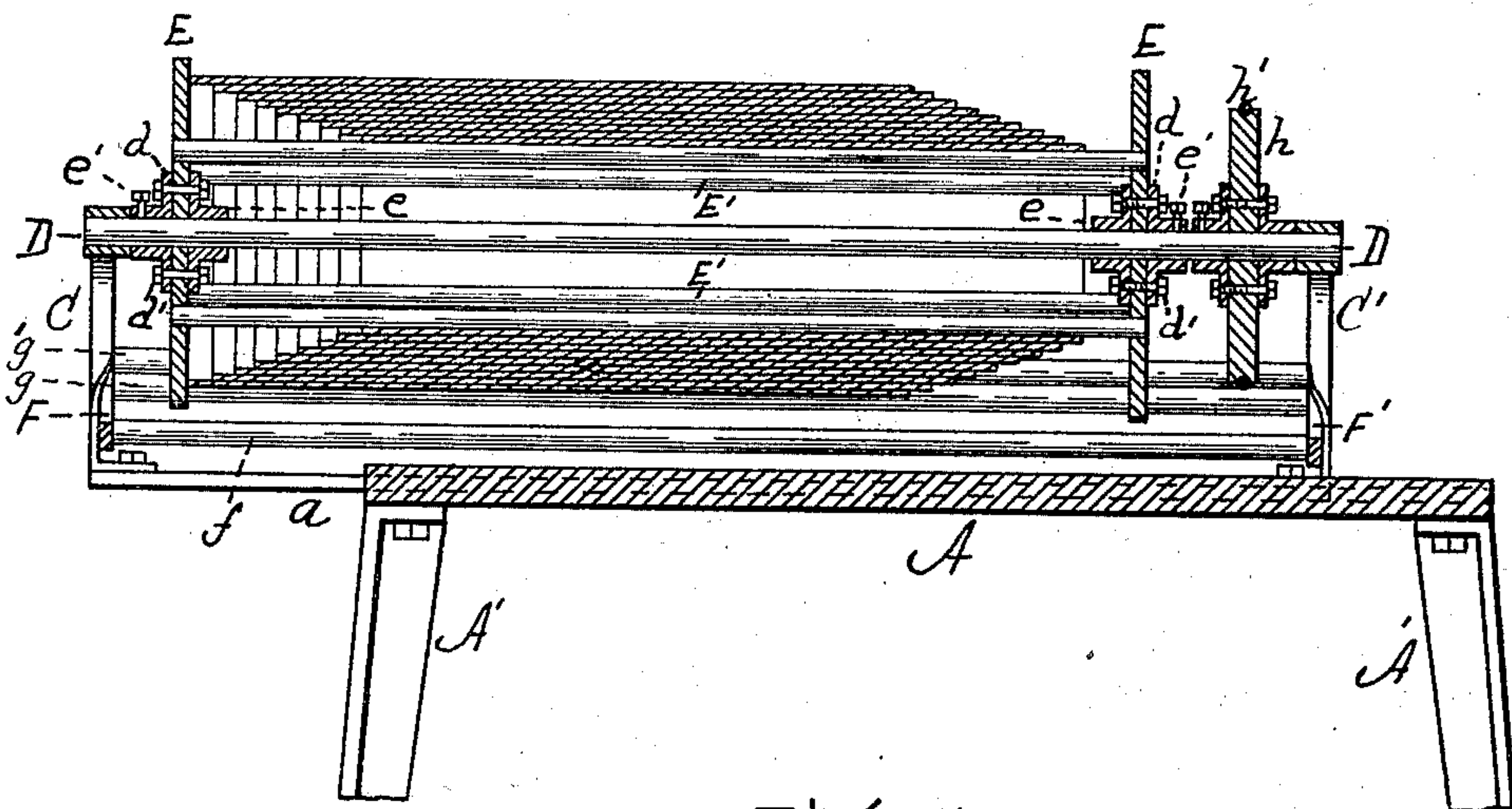


Fig. 4.

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# UNITED STATES PATENT OFFICE.

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## MACHINE FOR MAKING AND WINDING SURGICAL BANDAGES.

SPECIFICATION forming part of Letters Patent No. 635,160, dated October 17, 1899.

Application filed July 22, 1898. Serial No. 686,560. (No model.)

*To all whom it may concern:*

Be it known that I, PRESTON C. WEST, a citizen of the United States, residing in Boston, in the county of Suffolk and State of Massachusetts, have invented new and useful Improvements in Machines for Making and Winding Surgical Bandages, of which the following is a specification.

In producing bandages for surgical purposes the ordinary method is to tear strips longitudinally from the edge of a piece of cloth by hand and then wind each strip around the hand or finger or around a core or spool from which it is unwound when it is to be applied to the patient.

In this invention or improvement the entire piece of cloth is wound by mechanical means upon a reel, and then the strip is torn from the edge of the cloth and at the same time wound upon a spindle by the machine. After this strip has been wound into a roll it is in condition for sale and delivery. The bandage thus produced may then be removed from the spindle and another strip torn from the roll on the reel and wound upon the spindle. This may be continued until the entire roll of cloth on the reel is made into bandages.

My invention consists in the means whereby the bandage is torn from the roll and at the same time wound into a small roll for delivery and in certain constructions and arrangements of parts whereby this operation is facilitated, the bandage wound tightly, the reel adjusted to the desired positions, and the bandage torn from the roll in such a manner as to produce a clean and even strip.

The nature of my invention is fully described in detail below and illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of the device with the reel filled and a strip or bandage being torn from the edge of the cloth and wound upon the spindle. Fig. 2 is a cross vertical section taken on line 2, Fig. 1. Fig. 3 is a cross vertical section taken on line 3, Fig. 1, the reel being unfilled and the end of the cloth being caught and ready to be wound thereupon. Fig. 4 is a longitudinal vertical section taken on line 4, Fig. 1, with the reel filled.

Similar letters of reference indicate corresponding parts.

A represents a table supported by suitable legs A'. The surface of this table is longitudinally grooved to receive a pair of slides  $\alpha$ , to the under side of one of which is rigidly secured a rack  $\alpha'$ , Figs. 2 and 3. A horizontal rod B, provided with a suitable crank B', has its bearings in the bracket  $b$  and the brackets  $b'$ , secured to the under side of the table. A gear-wheel B'' is mounted on this rod or shaft B between the brackets  $b'$  and engages one of the racks  $\alpha'$  through a suitable opening on the under side of the table. These slides  $\alpha$  extend for nearly or quite the length of the table and have secured to them the lower ends of the two pairs of legs which constitute the two bifurcated upright frames C and C'. The upper ends of these frames constitute bearings for the horizontal shaft D, upon which are mounted the disks E, which form the ends of a reel consisting of said disks and a number (eight being shown in the drawings) of horizontal connecting-rods E', whose ends are secured in said disks. Each of said disks or ends E is provided on opposite sides with the two parts  $d$   $e$  of a hub, said parts being clamped together through the disks by the bolts  $d'$  and said part  $d$  being fixed on the shaft D by a set-screw  $e'$ . Thus the reel is adjustably secured to the shaft D. Rigidly secured to the frames C C' are two horizontal frames or carriers F F', set transversely over the table and connected by the horizontal rods  $f$   $f'$   $g$   $g'$ . A pulley  $h$  is fast on the shaft D and is connected by a belt  $h'$  with a pulley  $l$ , rigidly connected with a pulley P, which is fast on a shaft K, whose opposite ends have their bearings in frames or standards K'. This pulley P is connected by a belt P' with any suitable power.

To wind the cloth S from the pile S' upon the reel, one end of said cloth is passed over the rod  $f$ , around the rod  $f'$ , over the rod  $g$ , and around the rod  $g'$  to one of the rods E', to which it is secured in any desired manner, all as illustrated in Fig. 3. By starting the belt P' in the proper direction the cloth S is wound tightly and smoothly upon the reel, as indicated in Figs. 1, 2, and 4. It will be no-



ticed that the reel is considerably longer than the width of the cloth, which is necessarily shown with exaggerated thickness in the drawings. This is for the purpose of enabling the attendant to guide the cloth as it is wound upon the reel into spirally-arranged folds, as shown in Figs. 1 and 4, so that one end of the roll of cloth is approximately cone-shaped. The object of so guiding the folds is to provide a solid base beneath the outer fold at the edge from which the strip or bandage is to be removed. By this means there is always an even underlying support for the edge from which the strip is being removed by the mechanism below described, such support continuing until the last layer is unrolled, inasmuch as the strip is always removed from the convex end of the roll. By means of this even underlying solid support the strip  $S''$  is torn off evenly and cleanly and a superior bandage produced with clean edges free from threads or ravelings. The bandage thus produced is passed over a horizontal rod  $n$  and under a horizontal rod  $n'$ , both of which are supported at their opposite ends in uprights  $H$ , mounted on the table. From the lower rod  $n'$  the end of the strip or bandage is caught in any desired manner upon the squared portion  $L'$  of a horizontal spindle  $L$ , which extends from and may be integral with the shaft  $K$ , upon which the pulley  $P$  is fast. By applying power in the proper direction to the belt  $P'$  the spindle  $L$  is rotated and winds the strip or bandage  $S''$  upon its squared portion  $L'$  until the end of the roll upon the reel is reached.

The outer or pointed end of the spindle  $L'$  bears against and extends slightly into the face of a disk  $N$ , Figs. 1 and 3, which is supported by a suitable holder  $N'$ , extending horizontally from a plate  $R$ . This plate is hinged at its lower end to a base  $R'$ , which is secured to the surface of the table. When the machine is in operation, this hinged plate  $R$  is held in a vertical position, as illustrated in Fig. 1, by means of a spring  $V$ , which is connected by a pin at its upper end with the plate  $R$  and bears at its lower end against the stop  $V'$  on the base-plate  $R'$ . By this means the outer end of the spindle is supported as it is rotated for the purpose of tearing off a bandage from the roll.

After one strip or bandage  $S''$  has been torn from the roll in the manner above described and at the same time wound around the spindle  $L'$  the spring  $V$  is swung from the position indicated in Fig. 1 to that indicated in Fig. 3, so that its lower end no longer rests against the stop  $V'$ , and the hinged plate  $R$  is swung down, thus withdrawing the disk  $N$  from the outer end of the spindle  $L'$ . The roll of bandage is then slipped off the spindle  $L'$ . By replacing the parts in the position shown in Fig. 1 the spindle is ready to remove another strip or bandage from the roll.

As the strips are removed one after another it becomes necessary to move the reel longi-

tudinally in order that the cone-shaped end of the roll may be opposite the spindle. This is accomplished by turning the crank  $B'$ , thus moving the slides  $a$  in the table. The slide provided with the rack  $a'$  being connected by the bifurcated frames  $C$   $C'$  with the other slide, both slides are moved together and carry with them the reel and also the frames or carriers  $F$   $F'$ .

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

1. In a machine of the character described, a table or base; a slide sustained thereby and adapted to move horizontally thereon; standards supported by said slide; a reel supported by said standards and adapted to receive a roll of cloth to be made into bandages; a spindle adapted to receive and have wound upon it a strip torn from the edge of said roll for use as a bandage; and mechanism for rotating said spindle thereby tearing the strip from the roll of cloth on the reel and winding it upon the spindle, substantially as set forth.

2. In a machine of the character described, a table or base; slides  $a$  adapted to be moved horizontally thereon; a reel mounted on standards supported by the slides and adapted to receive a roll of cloth to be made into bandages; the carriers  $F$ ,  $F'$  secured to said standards; the rods  $f$ ,  $f'$ ,  $g$  and  $g'$  connecting said carriers and adapted to guide and hold taut the cloth as it is wound upon the reel; a spindle adapted to receive and have wound upon it a strip torn from the edge of said roll for use as a bandage; and mechanism for rotating said spindle thereby tearing the strip from the roll of cloth on the reel and winding it upon the spindle, substantially as described.

3. In a machine of the character described, a reel or core adapted to receive a roll of cloth to be made into bandages; a spindle adapted to receive and have wound upon it a strip torn from the edge of said roll for use as a bandage; mechanism for rotating said spindle thereby tearing the strip from the roll of cloth on the reel and winding it upon the spindle; slides sustained by the table and connected with the reel and adapted to move horizontally with relation to said table; and mechanism for sliding the reel longitudinally in order to adjust it with relation to the spindle as the strips are torn from its edge, substantially as set forth.

4. The herein-described improved machine for making and winding surgical bandages, comprising the table provided with longitudinal parallel grooves; the slides  $a$  within said grooves; a rack secured to the under side of one of said slides and adapted to be engaged through an opening in the table; the gear-wheel  $B''$  in engagement with said rack and mounted on the shaft  $B$ ; the frames or supports  $C$ ,  $C'$  constituting bearings for the horizontal shaft  $D$ ; the reel consisting of the disks  $E$  and connecting-rods  $E'$ , the former



mounted on said shaft D; the carriers F, F' set transversely over the table and connected by the horizontal rods *f*, *f'*, *g*, *g'* arranged substantially as described; the pulley *h* fast  
5 on the shaft D; the shaft K mounted in frames or standards K' supported by the table opposite the reel; the pulleys P and *l* fast on

said shaft K; and a belt connecting said pulleys *l* and *h*, substantially as described.

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Witnesses:

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