Sept. 11, 1928. 1,683,777

D. E. HENNESSY

FABRIC HANDLING

Filed April 22, 1925 2 Sheets-Sheet 1

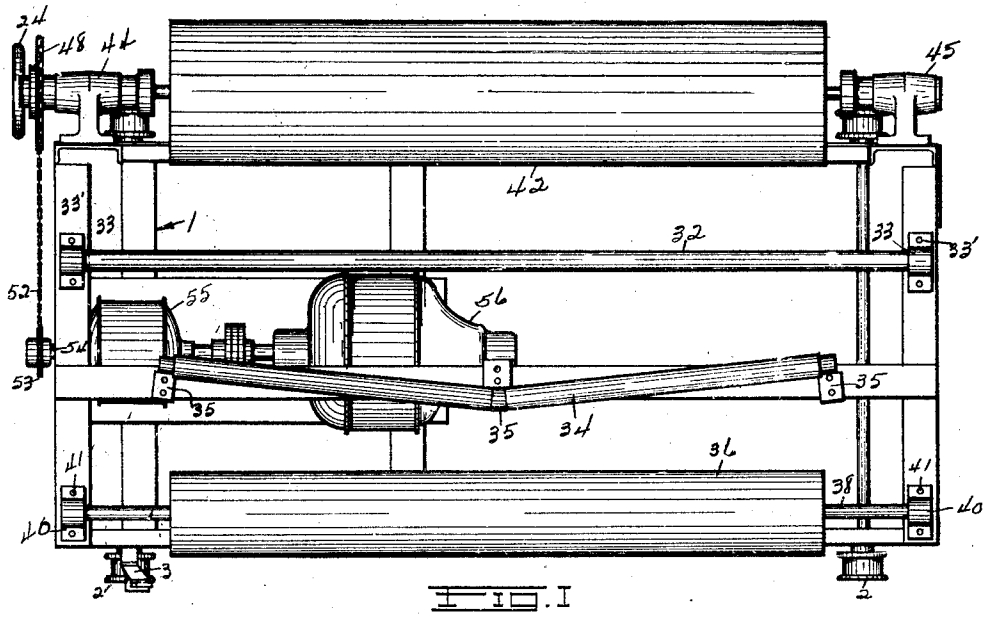


FIG. I

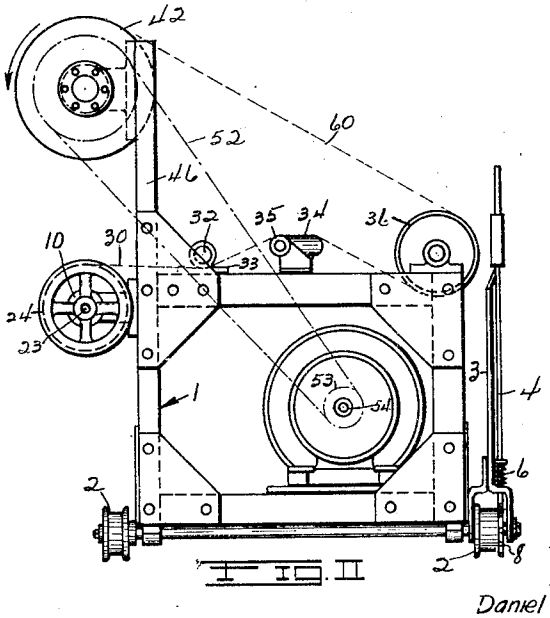


FIG. II

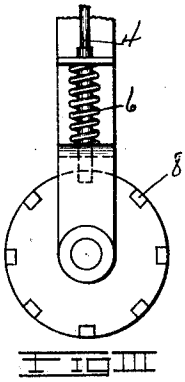


FIG. III

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FABRIC HANDLING

Filed April 22, 1925 2 Sheets-Sheet 2

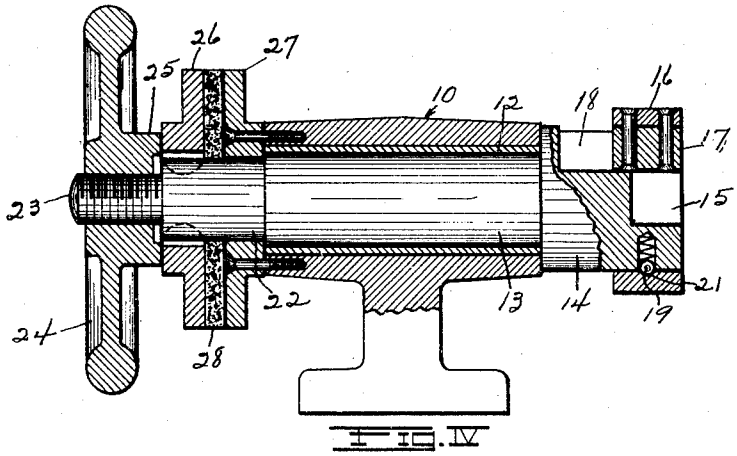


FIG. IV

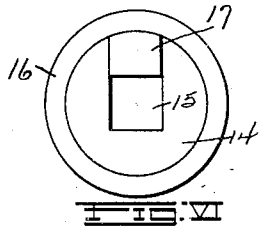


FIG. VI

FIG. V

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Patented Sept. 11, 1928. 1,683,777

UNITED STATES PATENT OFFICE.

DANIEL E. HENNESSY, OF AKRON, OHIO, ASSIGNOR TO THE FISK RUBBER COMPANY, OF CHICOPEE FALLS, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

FABRIC HANDLING.

Application filed April 22, 1925. Serial No. 25,166.

In handling of rubberized fabric it is customary where, sheets of such fabric are superposed, to insert a sheet of canvas duck or other suitable material, termed a liner, between the adjacent surfaces of the rubberized fabric to prevent adhesion. Where the rubberized fabric is in the form of a web it is wound into a roll of liner material for the same purpose. My invention relates to a device for winding a web of liner material into a roll, and has for its object to provide a device of this character which may be conveniently used in connection with a calender, cutter or other mechanism, and by means of which rubberized fabric strips or a web of rubberized fabric may be wound into the liner in a more efficient and economical manner than has hitherto been possible and in a more compact form, resulting in maximum protection to the fabric and the utilization of the maximum capacity of the liner.

In the accompanying drawings which illustrate one embodiment of my invention,

Figure 1 is a plan view,

Figure 2 is an end elevation,

Figure 3 is a detail of means for accurately positioning my device, and

Figures 4, 5 and 6 are detail views partly in section of the bearings supporting the liner rolls.

Referring to the drawings 1 designates the frame of the device which is supported upon flanged wheels 2 adapted to run upon suitable rails placed in front of the machine in conjunction with which my device is used. In order to enable easy adjustment of the position of the device on the rails I prefer to provide one of the flanged rollers with a lever 3 mounted on the shaft of the flanged roller and provided with a pin 4 actuated by a spring 6 to engage suitable recesses 8 in one of the flanges of the roll. As will be evident a slight transverse movement along the rails may be imparted by rocking the lever 3 when pin 4 is in engagement with a suitably positioned recess 8.

At the rear of frame 1 I provide bearings generally indicated at 10 and 11, in which the shaft of the liner supply drum 5 is removably and rotatably mounted. As shown in Figure 4 bearing 10 is provided with a suitable bearing surface 12 in which is mounted a shaft 13 having an enlarged head 14 slotted at 15 to receive the squared end of the shaft of the liner supply roll. A collar 16 is fitted on head 14 and is provided with a block or key 17 sliding in a groove 18 forming an extension of groove 15. The block 17 in the position shown in Figure 4 closes groove 15 to lock the liner shaft in position but releases the latter when the collar 16 is moved to the left in said figure. The collar 16 is adapted to be releasably held in locking position by a spring pressed ball 19 secured in head 14 and engaged in a recess 21 in the collar 16. The opposite end of shaft 13 is provided with a reduced portion 22 and a threaded portion 23 upon which latter is mounted a hand wheel 24 provided with a shoulder 25 engaging a disc 26 splined on reduced portion 22. A second disc 27 is bolted to bearing 10 and a disc 28 of leather or other suitable material is interposed between members 26 and 27. As will be evident the tightening of hand wheel 24 will draw head 14 against bearing 10 to increase the friction between rotating disc 26 and stationary disc 27, thus creating a drag on the liner as it is unwound from the liner supply drum. Bearing 11 is similar to bearing 10 just described except that the brake mechanism may be omitted. It will also be understood that any suitable means may be used to produce and control drag on the liner web and I do not confine myself to the specific means just described, for that purpose.

From the drum 5 the liner, indicated at 30, passes under a guide rod 32, rotatably mounted in bearings 33 secured to frame 1 at 33′, over spreading rolls 34 angularly mounted to rotate in bearings 35, and thence around a drum 36 secured to shaft 38 freely rotatable in bearings 40 secured to the frame 1 at 41. The drum 36 is preferably of substantial diameter to minimize the tendency to throw wrinkles into the liner web as it is turned around the drum.

A liner receiving drum 42 is rotatably and removably mounted in bearings 44 and 45 secured to uprights 46 forming part of frame 1. Bearing 44, shown in detail in Figure 5 is similar to bearing 10 previously described except that the brake or drag mechanism of the latter has been replaced by a sprocket wheel 48 secured by bolts 49 to a hub 50 splined on the reduced portion 22′ of the stub shaft 13′. Sprocket 48 and consequently drum 42 is driven by a sprocket

chain 52 passing around sprocket 53 secured to shaft 54 of a conventional reduction gearing 55 driven by a motor 56 conveniently supported in frame 1. The speed of motor 56 is controlled by any conventional means. Drum 42 is thus positively driven in the direction of the arrow in Figure 2 and draws the liner material from drum 5 beneath rod 32, over spreading rolls 34 and around drum 36. Through manipulation of hand wheel 24 suitable tension is applied to the liner so that in its passage from roll 36 to drum 42 it forms a substantially smooth taut "table" as at 60, upon which strips or sheets of rubberized fabric may be laid or otherwise received and wound into the liner. Preferably the movement of the liner is continuous but obviously it may be intermittently operated if desired. If desired a web of rubberized fabric may be directly wound into the liner as shown, for example, in the drawings accompanying my co-pending application Serial Number 1,864, filed January 12, 1925. In addition to the advantages derived from presenting the liner in the form of "table" 60, by the use of my device the liner as it is rolled up is maintained under substantially uniform tension and as a result the liner and rubberized fabric are wound into a compact roll capable of resisting the rough usage incident to transporting the roll to the place where the rubberized fabric is to be utilized for manufacturing purposes. It is also possible to co-ordinate the speed of the windup mechanism to the output of the machine from which it is taken.

Having described one embodiment of my invention, I claim:

A device of the character described comprising a liner supply drum, a liner receiving drum, means for driving the latter and means, including tension applying means associated with the supply drum and a freely rotatable roll positioned in the path of travel of the liner, to form the span of the liner between said roll and the receiving drum into a substantially uniformly tensioned taut fabric receiving table having sufficient rigidity to support the fabric received thereon in the absence of other supporting means, the table so formed having a freely accessible edge defined by said roll.

In testimony whereof I have signed my name to the above specification.

DANIEL E. HENNESSY.