

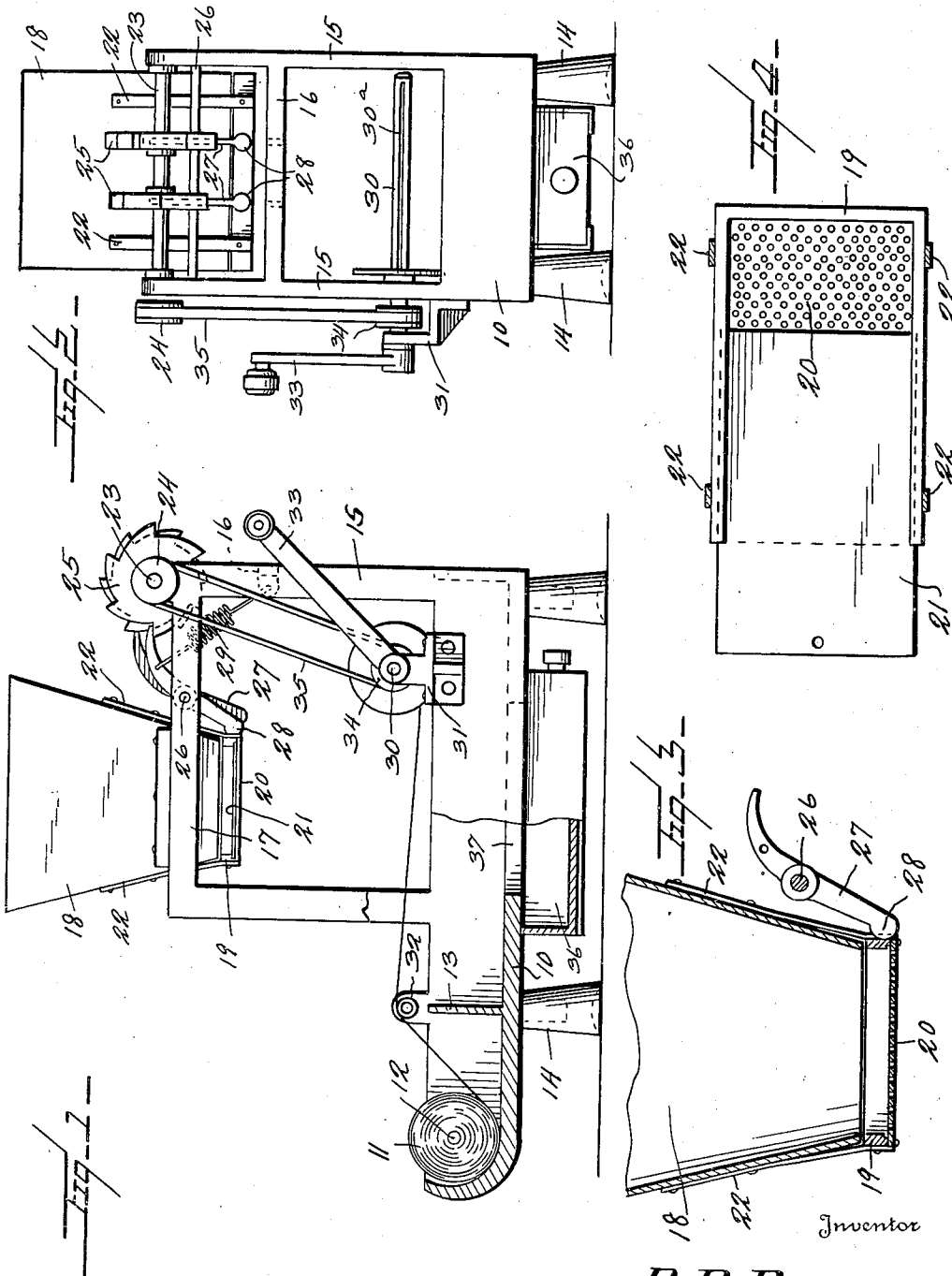
March 29, 1938.

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2,112,759

APPARATUS FOR PREPARING BANDAGES

Filed Nov. 28, 1936



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UNITED STATES PATENT OFFICE

2,112,759

APPARATUS FOR PREPARING BANDAGES

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CanadaApplication November 28, 1936, Serial No. 113,269
In Canada December 14, 1935

2 Claims. (Cl. 91—43)

This invention relates to means for preparing bandages and particularly to means whereby, as a bandage is rolled upon a spindle, a powdered or finely comminuted material may be sprinkled uniformly over the face of the bandage.

Another object is to provide a structure of this character in which the sprinkling of the powdered material on the bandage is regulated in accordance with the speed of movement of the bandage to thus secure at all times a uniform distribution of the powdered material on the bandage.

A further object of the invention is to provide a mechanism of this character in which bandages of various widths may be treated and in which the amount of powder discharged from the hopper of the machine will be in accordance with the width of the bandage.

A still further object is to provide a mechanism of this character so constructed that excess powder sifting through the bandage or falling on either side thereof may be recovered.

Still another object is to provide in a bandage treating mechanism, a hopper having at its lower end a finely perforated or reticulated screen, provide means for drawing a bandage off one roll and re-rolling the bandage, and means operated by the bandage withdrawing means, acting to uniformly jar the screen to cause the discharge of powder through the screen onto the bandage.

Still another object is to provide a mechanism of this character which may be conveniently used in hospitals for the immediate preparation of bandages of any required length or width, as may be found necessary in an emergency.

Other objects will appear in the course of the following description.

My invention is illustrated in the accompanying drawing wherein:

Figure 1 is a side elevation of my bandage treating machine, part of the trough being broken away.

Figure 2 is an end elevation thereof, the pawl engaging springs being omitted.

Figure 3 is an enlarged fragmentary sectional view through the lower end of the hopper showing means for yieldingly supporting the screen.

Figure 4 is a top view of the screen frame and screen with the screen area reducing plate partially inserted.

Referring to the drawing, 10 designates a trough-shaped base portion, one end of which is formed for the support of a roll 11 of bandage material. This roll may be held at this end of the trough by any suitable means and is either

supported in the trough for free unrolling or the roll of bandages may be mounted upon a spindle 12. A partition 13 extends upward from the bottom of the trough more or less adjacent to that end of the trough which supports the bandage roll 11, this partition acting to prevent a free bandage roll from rolling out from this end of the trough. This trough is shown as supported upon legs 14. Extending upward from the side walls of the trough are the uprights 15 connected to each other at 16 by transverse bars and connected at their upper ends by longitudinal bars 17, these bars 15, 16 and 17 constituting a supporting frame.

Mounted in any suitable manner upon the upper end of this supporting frame is a hopper 18 and disposed beneath the lower end of this hopper is a rectangular frame 19 carrying a screen 20 of finely perforated or reticulated material. A slide 21 is adapted to be received within the frame 19 and to be shifted to more or less cover the screen 20. The screen supporting frame 19 is mounted upon the hopper by means of resilient straps 22, these straps permitting the screen to be oscillated relative to the hopper.

For the purpose of oscillating this screen, I mount upon the frame members 17 and in suitable bearings a transverse shaft 23 carrying upon it at one end the pulley 24 and also carrying upon it a pair of ratchet wheels 25. Pivotaly mounted on a transverse shaft 26 are a pair of hammers in the form of levers and designated 27. Each of these hammer-like levers is outwardly curved at its upper end and projects into the path of movement of the teeth of a corresponding ratchet wheel. The lower end of each lever 27 is formed with a head 28 which is projected against the screen frame 19 by means of a coiled contractile spring 29 mounted at one end upon the hopper supporting frame in any suitable position and at the other end connected to the upper end of a corresponding lever 27. Preferably the teeth of the ratchet wheels 25 are in staggered relation to each other and thus as the shaft 23 is rotated, the hammer levers 27 will be oscillated and will intermittently strike against the screen supporting frame 19 to thus rapidly vibrate or oscillate this frame and cause the sifting of powder in the hopper downward through the perforations of the screen onto the bandage.

The bandage material is withdrawn from the bandage roll 11 and carried across beneath the hopper by means of a spindle 30 rotatably mount-

ed upon a bracket 31 carried upon the side wall of the trough 10. This spindle is formed with a longitudinal slot 30^a which extends diametrically across the spindle so that one end of the bandage material from the roll 11 may be inserted in this slot and then the bandage material re-rolled upon the spindle 30, this bandage material, after it leaves the roll 11, passing over a roller 32 so that the bandage or gauze will be supported in more or less of a horizontal plane.

Any desired means may be used for rotating the spindle 30 but I have shown for this purpose a crank handle 33 mounted upon the spindle and I have also shown, for the purpose of driving the shaft 23, a pulley 34 mounted upon the spindle, and I have also shown a band 35 extending around the pulley 34 and around the pulley 24. This construction is important as by driving the shaft 23 at a speed corresponding to that of the spindle 30, the discharge of powdered material from the hopper corresponds with the speed with which the gauze or bandage material is withdrawn from the roll 11 and rewound. Thus, whether the bandage is rapidly withdrawn and re-rolled or slowly withdrawn and re-rolled, approximately the same amount of material will be discharged onto the face of the bandage. By this construction, I prevent the powdered material from being thicker in some places than in others, which would be very undesirable.

In order that no powdered material which may sift through the bandage or be discharged on either side thereof shall be lost, I provide a drawer 36 mounted in guides beneath the trough 33, the trough having an opening 37 immediately above the drawer. Thus the powder which may collect within the drawer 36 may be discharged into the hopper for re-use.

The operation of this mechanism will be obvious from what has gone before. The fresh bandage in its rolled condition is placed within the end of the trough and the bandage passed over the roll 32 and the end of the bandage inserted in the slit 31. As the bandage is being re-rolled upon the spindle 30, the ratchet wheels will rotate and will cause the hammers 27 to intermittently strike against the screen supporting frame, jarring this frame and agitating the powdered material upon the screen so that it will sift downward through the screen uniformly onto the traveling bandage.

The machine will be constructed so as to receive and treat a bandage of maximum width, but it will be seen, of course, that bandages of any desired width below this maximum may be covered with powder and that by adjusting the plate 21 over the screen 20, the area of the screen may be limited to correspond with the width of the bandage being treated. This mechanism is particularly suitable for sprinkling plaster of Paris upon bandages which are designed to be used for casts in hospitals, and it is obvious that any desired length of bandage may be unrolled

upon the roll 11, powdered and then cut off, so that thus the material is suitable for treating either short lengths or long lengths of bandages.

While I have illustrated the supporting frame for the hopper and the trough as being open, yet if desired, the entire mechanism may be entirely enclosed so as to prevent any possible contamination of the bandage by unsterile matter. Obviously the bandages may be powdered with any antiseptic material as well as with plaster of Paris.

This device entirely obviates the usual slow and tedious preparation of bandages by hand and furthermore, inasmuch as the bandages are not touched by the hand until they are entirely prepared, the inner face of the bandage is not likely to become contaminated or rendered septic.

What is claimed is:—

1. Mechanism of the character described, comprising a supporting frame, a trough, having a bandage roll supporting compartment at one end, a hopper carried by said frame and discharging toward the trough, a finely perforated screen forming the lower end of the hopper, a spindle mounted upon the frame above the opposite end of the trough from said compartment and having means whereby it may be manually rotated and having means whereby one end of the roll of bandage material may be supported within the trough and may be engaged for winding upon the spindle, means for agitating the screen to thereby discharge powdered material from the hopper onto the moving bandage, rotatable means for operating said screen agitating means, the rotatable means being operatively connected with the spindle and driven thereby whereby the powdered material is discharged onto the bandage uniformly in accordance with the speed of movement of the bandage.

2. A mechanism of the character described, including a supporting frame, a hopper mounted upon the frame, a screen carried by the lower end of the hopper, a trough carried by the frame and extending beneath the hopper, the trough at one end having an end wall and an adjacent up-standing partition wall defining a compartment within which a roll of bandages may rest, a spindle mounted on the frame above the opposite end of the trough, the spindle having a single bearing and being longitudinally split to receive one end of the bandage and withdraw it from the roll and re-roll it to thus cause the bandage to travel across the trough beneath the screen, means driven by the spindle for constantly and uniformly agitating the screen to thus cause the uniform discharge of powdered material onto the traveling bandage, the trough having an opening immediately below the screen, and a receptacle removably mounted upon the trough below said opening whereby to catch powdered material sifting through or past the bandage being treated.

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