No. 615,298. Patented Dec. 6, 1898.

L. D. MULLEN & W. C. SHANNON.

BANDAGE ROLLING MACHINE.

(Application filed Oct. 14, 1897.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

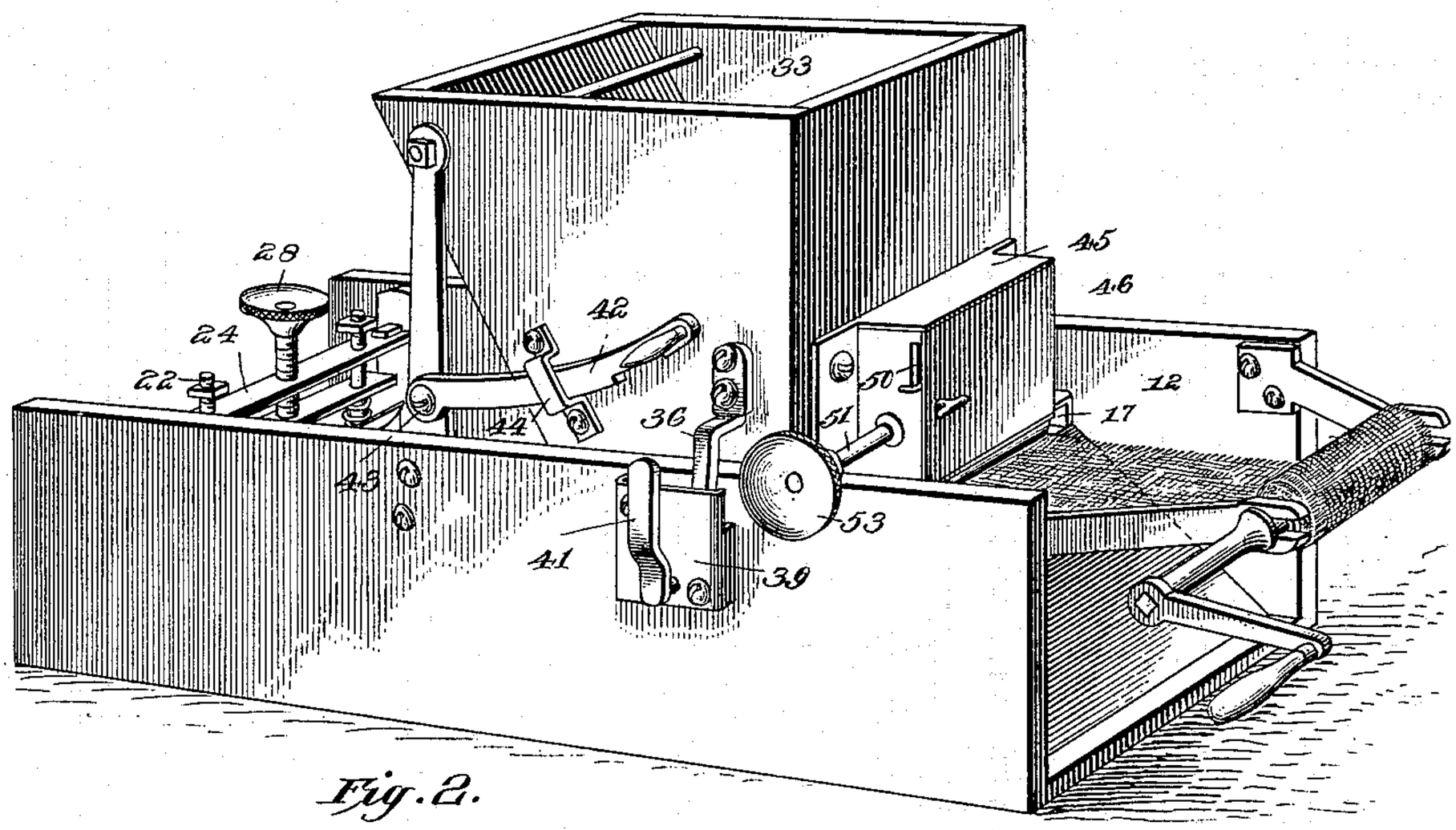

Fig. 2.

Fig. 3.

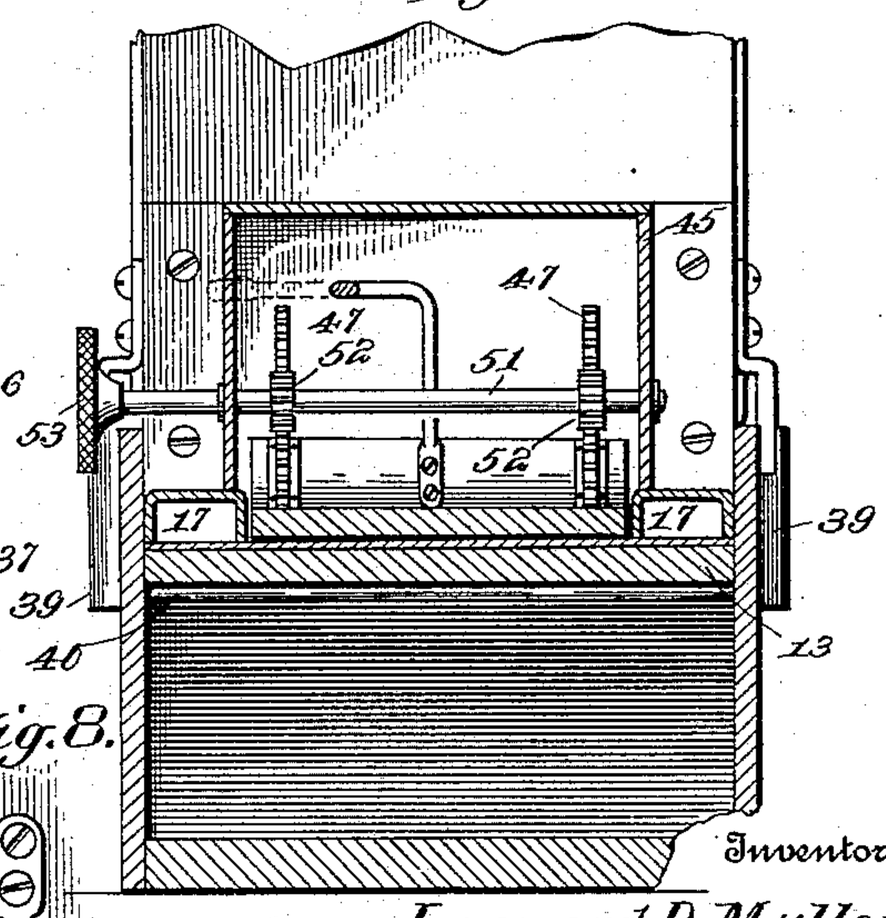

Fig. 8.

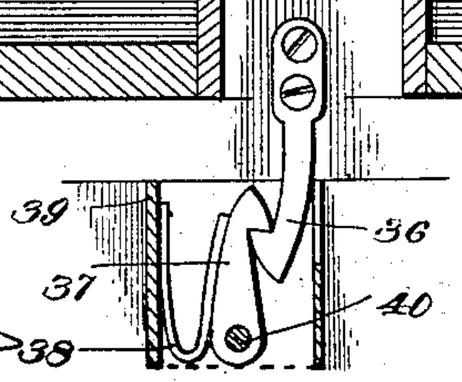

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Fig. 4.

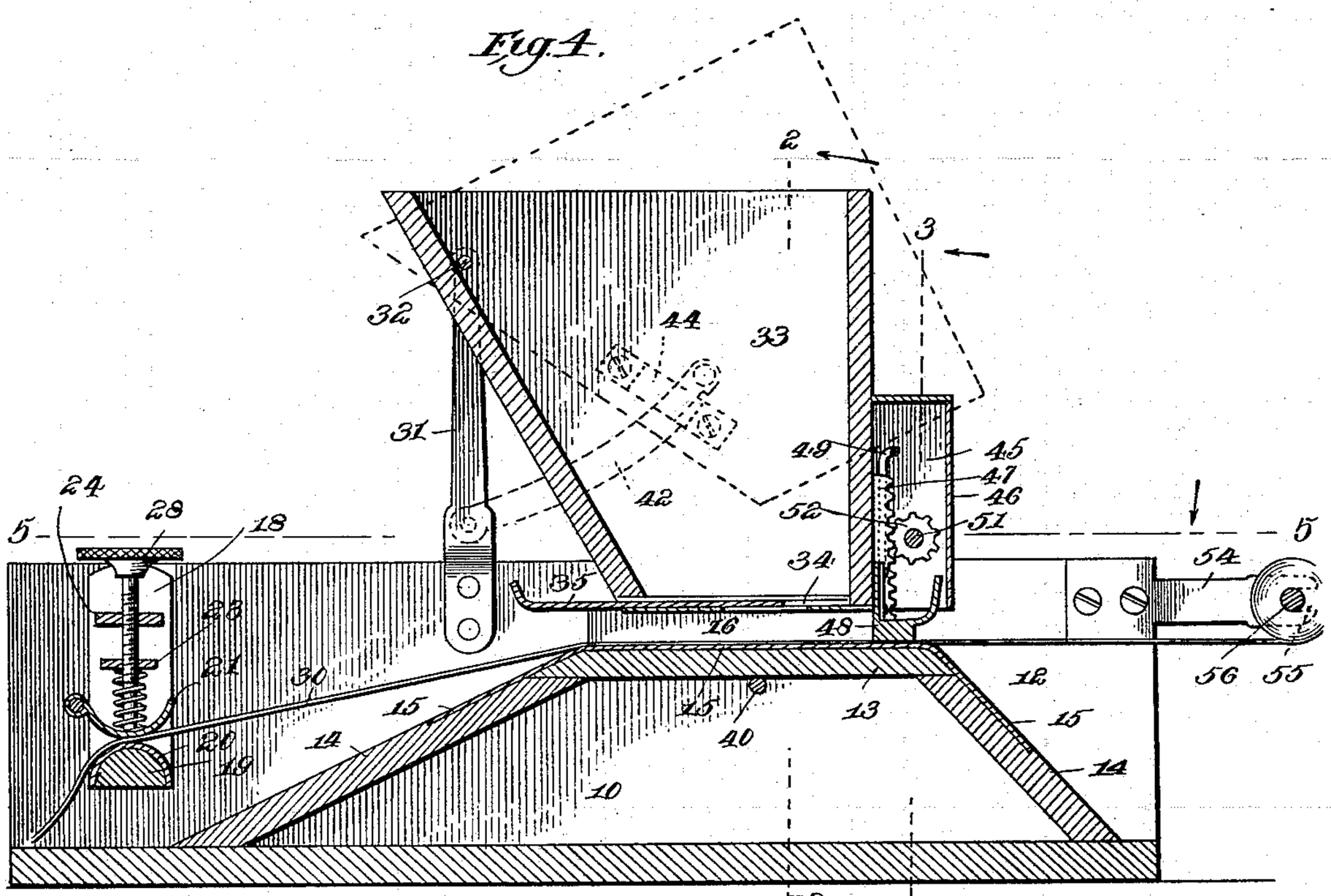


Fig. 5.

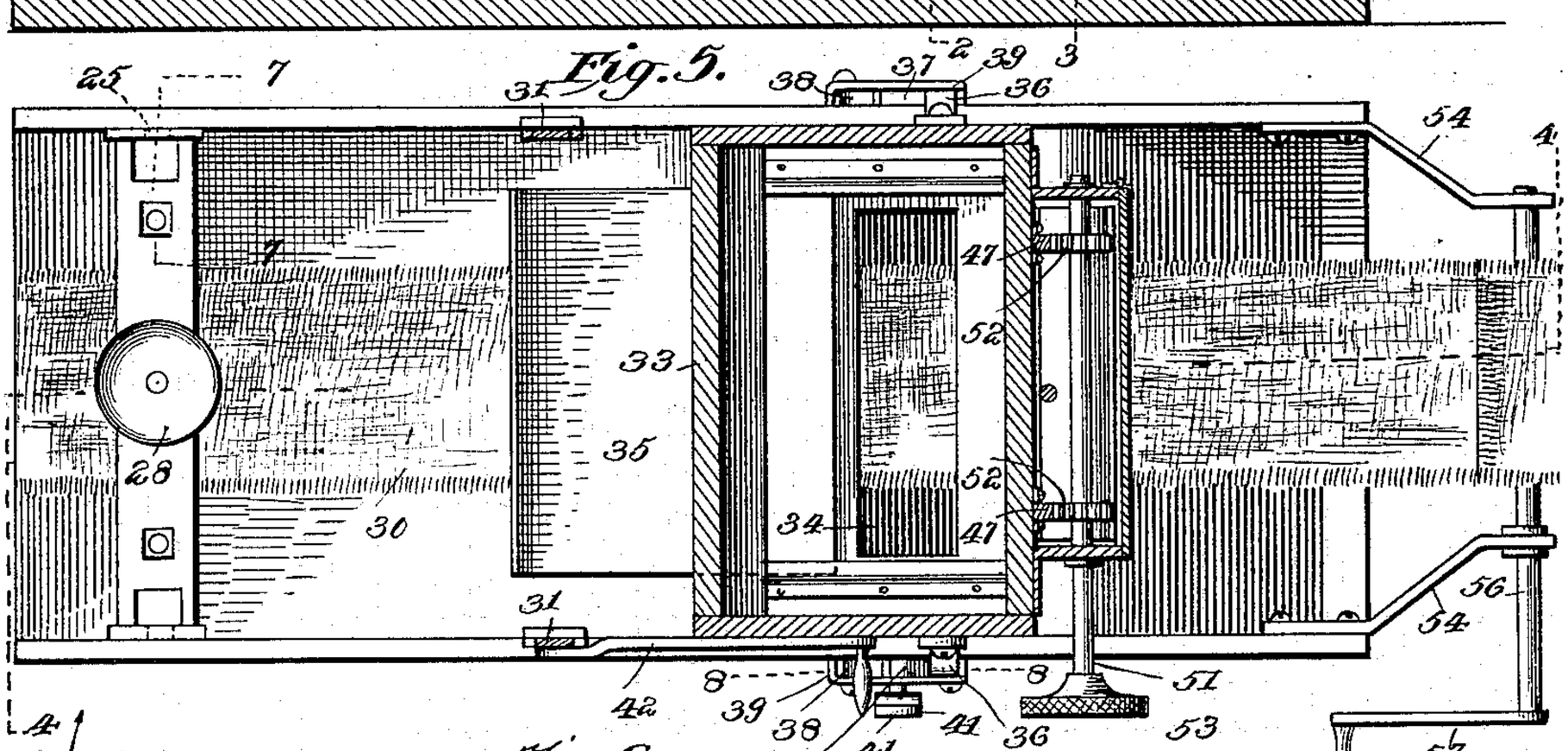


Fig. 6.

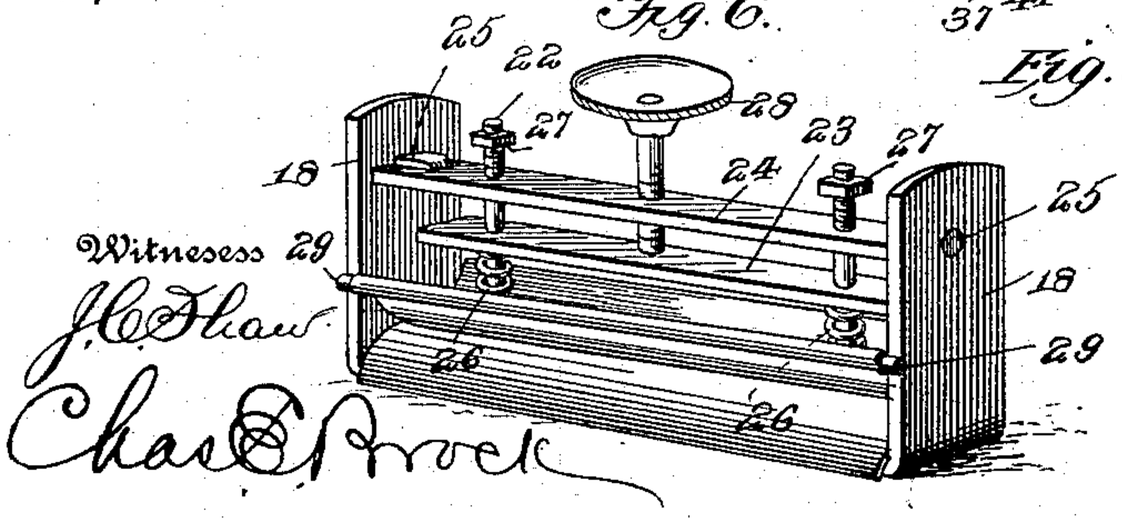
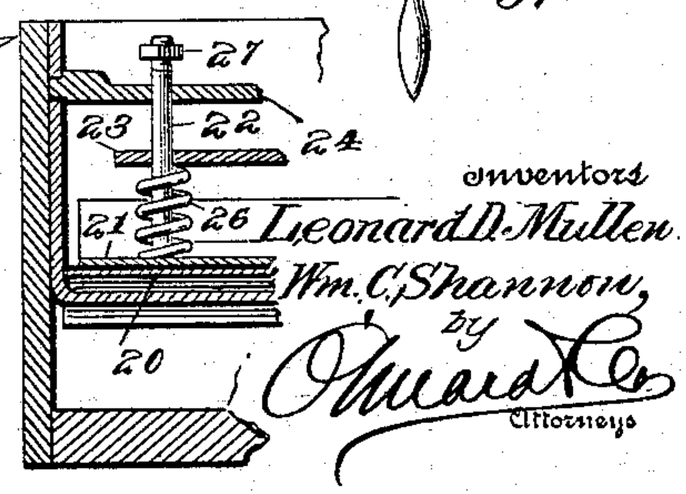


Fig. 7.



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UNITED STATES PATENT OFFICE.

LEONARD D. MULLEN AND WILLIAM C. SHANNON, OF SELMA, ALABAMA.

BANDAGE-ROLLING MACHINE.

SPECIFICATION forming part of Letters Patent No. 615,298, dated December 6, 1898.

Application filed October 14, 1897. Serial No. 655,123. (No model.)

To all whom it may concern:

Be it known that we, LEONARD D. MULLEN and WILLIAM C. SHANNON, residing at Selma, in the county of Dallas and State of Alabama, have invented a new and useful Bandage-Rolling Machine, of which the following is a specification.

Our invention is in the nature of a machine for rolling plaster-of-paris upon surgeons' bandages.

The object of the invention is to provide for the use of surgeons a compact device whereby bandages may be coated with plaster-of-paris in any desired quantity, there being provided means whereby the bandages are rolled through the machine smoothly and rapidly and for depositing a regulated amount of the plaster upon the bandage during its passage, the various working parts of the machine being provided with accurate adjusting means.

With this object in view our invention consists in a machine for rolling bandages, comprising a smooth flat surface of metal over which the bandage is passed while plaster-of-paris is being deposited upon its upper surface, an improved tension device to regulate the pull on the bandage in passing through the machine, so constructed as to be turned out of the way to insert the bandage and to drop back into position without disturbing its adjustment, improved means for regulating the deposit of the plaster on the bandage and the thickness of the coating thereon, improved means for rolling up the bandage, being a tapering drum or shaft to receive the bandage mounted in slots in the converged ends of side brackets projecting beyond the end of the machine, means for tilting the hopper upward, and means for securing it in position, all of which will be first fully described hereinafter, and the particular improved construction, arrangement, and combination of the various parts of which will be specifically pointed out in the appended claims.

In order to enable others skilled in the art to which our invention most nearly appertains to make and use the same, we will now proceed to describe its construction and operation, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a perspective view of a machine constructed in accordance with our invention. Fig. 2 is a transverse vertical section on the line 2 2 of Fig. 4. Fig. 3 is a transverse vertical section on the line 3 3 of Fig. 4. Fig. 4 is a vertical longitudinal section on the line 4 4 of Fig. 5. Fig. 5 is a horizontal section on the line 5 5 of Fig. 4. Fig. 6 is a detail perspective view of the tension mechanism. Fig. 7 is a detail sectional view on the line 7 7 of Fig. 5. Fig. 8 is a detail sectional view on the line 8 8 of Fig. 5.

Like numerals of reference mark the same parts wherever they occur in the different figures of the drawings.

Referring to the drawings by numerals, 10 is an open-ended box provided between its sides 11 and 12 with a horizontal platform 13 and inclines 14 at each end thereof, reaching to the bottom of the box. A sheet of smooth iron 15 is secured upon the top of the platform 13 and has its ends projecting over upon the inclines 14. Vertical flanges 16 are erected near each side of the plate 15, such flanges in this instance forming the inner sides of rectangular tubes 17, which form supports for the hopper to be hereinafter mentioned.

The bandage in passing through the machine first passes through the tension device, which will now be described.

18 18 indicate the sides, and 19 the bottom, of a loop or swing formed of a plate of brass or other metal and rigidly secured to the inner sides of the sides 11 and 12 of the frame or box of the machine, a curved plate 20 being soldered or otherwise secured upon the bottom 19 and supported by a wooden filling, if desired. A similar plate 21, reversely curved, in its normal position rests upon the top of the plate 20, the plate 21 being attached to the lower ends of the threaded rods 22, which pass upward through plates 23 and 24, the latter being pivoted at 25 in the sides 18. Springs 26 surround the lower portion of the threaded rods 22 between the plates 21 and 23. Nuts 27 on the threaded rods 22 limit the extent of movement of the rods through the plate 24. An adjusting-screw 28 is threaded through the central portion of the plate 24 and bears upon the top of the plate 23. The upper curved tension-plate 21 is provided with stops 29 to prevent it moving inward on

the bandage 30, which passes between it and the lower tension-plate 20, as clearly shown in Fig. 4.

31 indicates the vertical arms secured to the sides 11 and 12 of the box, the upper ends of which at 32 are pivoted to a hopper 33, which has the opening 34 in its bottom and a sliding door 35 to wholly or partially close said opening when desired. In its normal position the hopper 33, as before stated, rests upon the top of the tubes 17, as most clearly shown in Figs. 1 and 2, being secured in that position by means of latches 36, which engage pawls 37, normally held in position to engage the latches by springs 38, the pawls and springs being located in boxes 39, secured to the outside of the box or frame of the machine and mounted on a shaft 40, extending through the machine and provided on one or both sides with a hand-lever 41 for operating the pawls. The latch 42 is pivoted at 43 to one of the uprights 31 and passes through a keeper 44, secured to the side of the hopper, a suitable handle being provided by which to manipulate the latch. On one end of the hopper is secured a box 45, having a hinged door 46. Against the back of the box are secured vertical racks 47, which at their lower ends are secured to a plate 48, adapted to reciprocate vertically in the box and provided with a pointer or indicator 49, passing through a slot 50 in the side of the box. A shaft 51 is journaled in the side of the box and carries pinions 52, meshing with the racks 47, a handle 53 being provided on the outer end of the shaft, by means of which it may be turned and the rack and plate 48 lifted or depressed, as desired.

Secured to the inner sides of the box, at the delivery end thereof, are brackets 54, whose arms converge toward each other and are provided with slots 55 at their outer ends, in which is mounted a tapered shaft or drum 56, provided with a suitable crank 57, by which it may be turned.

In the operation of the machine the hopper 33 is supplied with pulverized plaster-of-paris in its dry state, which is permitted to pass in predetermined quantities through the regulated opening 34 in the bottom of the hopper upon the bandage 30, passing through the machine, the amount retained on the bandage being regulated by the adjustment of the plate 48, as before described.

To prepare the machine for operation, the tension device is swung outward on its pivot 25, which leaves a space between the two tension-plates 19 and 21, through which the end of the bandage 30 is passed. The latches 36 are released, by means of the lever 41, from engagement with the pawls or catches 47, when the hopper may be tilted up on its pivot 32 in the position shown in dotted lines in Fig. 4, the sliding gate 35 being closed during this operation, if desired. The box 46 is raised with the hopper, together with the plate 48, and an open space is left between the hopper and the plate 15 for the further passage of the bandage 30, which is drawn through and wound slightly upon the shaft or drum 56. The tension device and the hopper being again adjusted in position and regulated to suit the particular instance, the shaft or drum 56 is rotated by means of its crank-handle 57 winding the bandage 30 upon it and drawing the bandage through between the tension-plates 19 and 21, over the smooth metallic surface 15, and under the plate 48. During this movement the plaster-of-paris drops through the opening 34 upon the upper surface of the bandage, and the coating is rendered smooth and even and regulated in thickness by the plate 48, as before described, and wound upon the shaft or drum 56. This drum being tapered, the roll of bandage can readily be removed off its small end.

From the foregoing description the construction and operation of the bandage-rolling machine will be clearly understood, and it will be obvious that I have provided a neat, simple, handy, and cheap machine by means of which surgeons may prepare bandages, for the setting of broken limbs and other analogous purposes, of any thickness, width, grade, or quality to suit their own desires or wants.

By means of this machine a bandage can be prepared in a very short period of time when wanted, so that it will always be fresh and not affected by the atmosphere, which has a tendency, especially during damp weather, to set the plaster before the bandage is used.

While we have illustrated and described the best means now known to us for carrying out our invention, we do not wish to be understood as restricting ourselves to the exact details of construction shown and described, but hold that any slight changes or variations, such as might suggest themselves to the ordinary mechanic, would properly fall within the limit and scope of our invention.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a bandage-rolling machine, the combination with a hopper, a platform having a smooth surface, over which the bandage is passed, beneath said hopper, a winding device, and a tension device consisting of two curved metallic friction-plates held together by spring-pressure applied to one of them, substantially as described.

2. The combination of a metallic swing or loop consisting of sides 18 and bottom 19 secured to the inner sides of a box or frame, a curved metal plate secured on the bottom 19 and a second curved metal plate provided with tension devices and pivotally secured between the sides of the loop or swing above the bottom 19, substantially as described.

3. The combination of the loop or swing composed of bottom 19 and sides 18 secured to the inner side of a frame or box, a curved metal plate 20 secured to the bottom 19, a

second curved metal plate 21 adapted to engage with the plate 20, provided with stops 29, a plate 24 pivotally secured in the ends 18, threaded rods 22 provided with nuts 27 and passing through the plate 24, an intermediate plate 23 mounted on said rods, and spring 26 around said rods between the curved plate 20 and the intermediate plate 23, substantially as described.

4. The combination in a bandage-rolling machine with means for passing the bandage through and for depositing pulverized material thereon, of the regulating-plate 48, the racks 47 secured thereto, the indicator 49 also secured thereto, and the handled shaft 51 carrying pinions 52 meshing with said racks to raise or lower the regulating-plate, substantially as described.

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WILLIAM C. SHANNON.

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