No. 758,322. PATENTED APR. 26, 1904.

C. KRAUSE.

MACHINE FOR REROLLING CLOTH.

APPLICATION FILED NOV. 19, 1903.

NO MODEL.

Fig. 1.

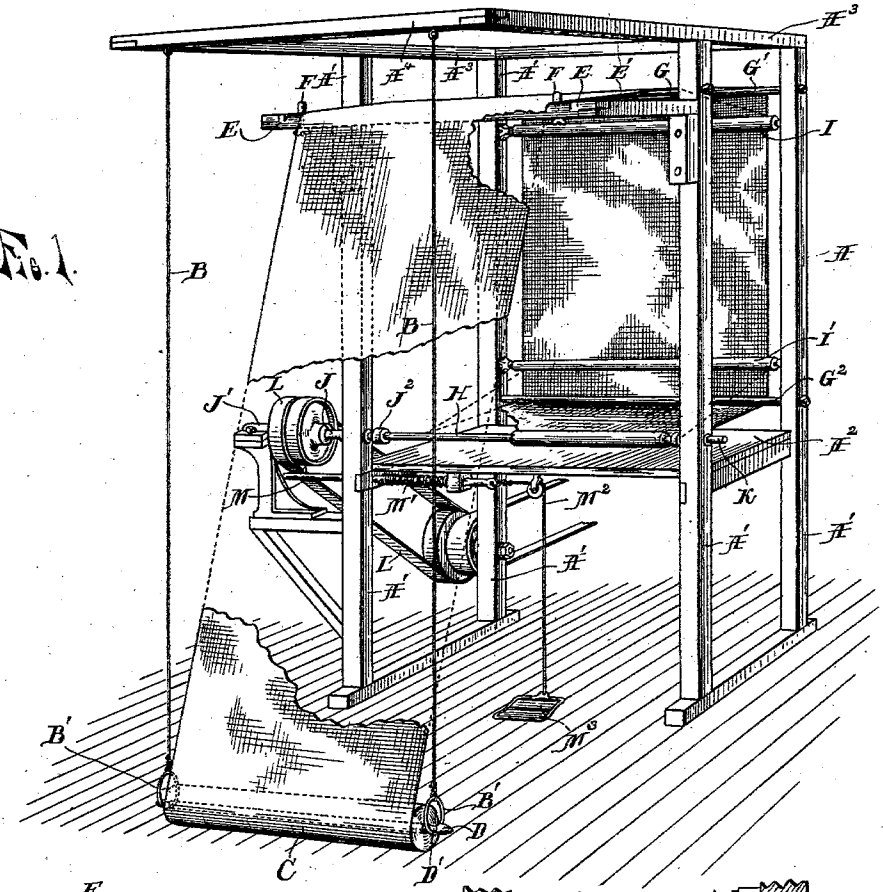


Fig. 2.

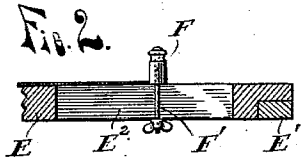


Fig. 4.

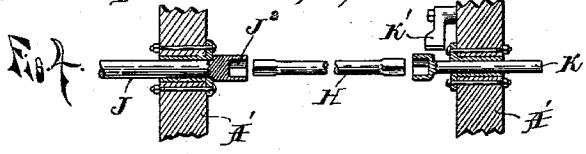


Fig. 3.

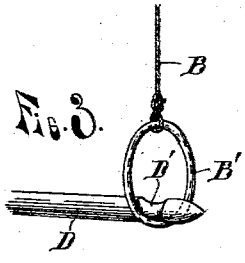
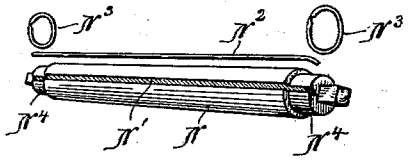


Fig. 5.



WITNESSES.

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No. 758,322. Patented April 26, 1904.

UNITED STATES PATENT OFFICE.

CHARLES KRAUSE, OF DETROIT, MICHIGAN.

MACHINE FOR REROLLING CLOTH.

SPECIFICATION forming part of Letters Patent No. 758,322, dated April 26, 1904.

Application filed November 19, 1903. Serial No. 181,818. (No model.)

To all whom it may concern:

Be it known that I, CHARLES KRAUSE, a citizen of the United States of America, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Machines for Rerolling Cloth, &c., of which the following is a specification, reference being had therein to the accompanying drawings.

In the manufacture of certain fabrics the cloth is made up into large rolls, and this invention relates to an improved machine for rewinding these rolls for the purpose of inspection, measuring, &c.

The primary object of the invention is to provide a machine which will rewind the fabric with despatch and accuracy without wrinkling the goods, making the ends of the rewound roll as even as possible; and it is also an object of the invention to so lead the fabric through the machine as to bring it into such a position that the operator may look through it, and thus readily discover any imperfections, and also to wind the fabric with an even tension, which may be adjusted according to the kind and width to make a tightly-wound roll which will not be easily crushed in shipping.

To this end the invention consists in so supporting the roll of fabric to be rewound that it puts an even strain upon the cloth as it is wound therefrom, said roll being free to move longitudinally upon its support or laterally, one end at a time, to equalize the strain when one edge of the cloth is fuller than the other or has been stretched tighter in winding the original roll.

It also consists in leading the cloth over a series of rolls and bars supported by a suitable frame in such a manner that there will be a vertical stretch of the fabric interposed between the operator and the light, the rolls and bars also serving to create a frictional resistance to the winding, and thus the tightness with which the cloth will be wound may be regulated by changing the lead to run the cloth over different combinations of rolls and bars; and the invention further consists in providing certain other new and useful features, all as hereinafter more fully described, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of a device embodying the invention; Fig. 2, a detail showing the adjustable guide-studs; Fig. 3, a detail showing a perspective view of one end of the supporting-bar for the original roll and the manner of supporting said bar; Fig. 4, a sectional detail showing the rewinding-shaft and manner in which it is held and driven, and Fig. 5 a perspective view of a modified form of rewinding-shaft.

As shown in the drawings, A is a suitable frame consisting of four upright posts A′, connected by suitable cross-bars and a table A^2 and at their upper ends by forwardly-projecting side bars A^3, connected at their forward ends by the bar A^4. This bar A^4 is provided with two eyes for the attachment of two ropes B, provided with two common round iron rings B′, secured to their lower ends and hanging adjacent to the floor. C represents the roll of fabric to be rewound, which roll is supported upon a round bar or shaft D, provided with circumferential grooves D′ near its ends to engage the rings B′. The bar after being put through the roll is laid with its ends projecting through the rings and the grooves engaging the same, the roll being thus free to turn upon the rings and suspended from the bar A^4, or it may be supported from the ceiling, if desired.

Secured to the front posts A′ of the frame and near their upper ends are the brackets E′, which project forwardly from the frame, but not as far as the bars A^3, and the ends of these brackets are connected by a supporting-bar E, over which the cloth is led from the roll C, the forward edge of said bar being rounded to engage the cloth. To prevent the cloth from moving longitudinally of the bar and to form guides therefor, studs F, preferably of porcelain or similar material, are adjustably secured to the bar by providing the bar with longitudinal slots E^2 to receive the bolts F′, which pass through the studs and slots and are secured therein by winged nuts on their lower ends. From the supporting cross-bar E the cloth passes over a supporting-rod G,

which extends across between the forward posts A′ of the frame, thence over a similar rod G′ on the rear posts, downward and around a like rod G^2, which extends across the frame between the rear posts at a short distance above the table A^2, and thence forward above said table to the winding-shaft H. Mounted to turn freely upon bearings on the rear posts A′ and extending across between the same are the rolls I and I′, the roll I extending parallel with and adjacent to the lower side of the rod G′ and the roll I′ adjacent to the upper side of the rod G^2.

When it is found that too much strain is being put upon the fabric by the friction of passing over the stationary rods, and thus the cloth caused to wrinkle as it is wound upon the shaft H, it may be led around one of the rolls and one of the bars or both of the rolls and neither of the bars, thus reducing the friction and consequent strain sufficiently to prevent wrinkling and cause the cloth to wind smoothly and not too tightly.

The winding-shaft H is driven by a short driving-shaft J, provided with a tight and a loose pulley and mounted in a bearing J′ on the frame and a bearing in the adjacent post A′, said driving-shaft being provided at its inner end with a squared socket J^2 to receive the squared end of the shaft or bar H, the opposite end of said shaft H, which is also squared, being engaged by a squared socket on the end of a short longitudinally-movable shaft K, mounted in a bearing in the opposite post A′ at the front of the frame. One squared end of the shaft H is inserted in the socket J^2 and then the shaft K moved longitudinally to engage its socket with the opposite squared end, in which position the shaft K is held to hold the winding-shaft in place by a pawl K′, which drops behind a shoulder on the shaft K and holds the same from moving out of engagement with the winding-shaft.

The driving-shaft J is driven in any suitable manner, as by the belt L, which is normally held in engagement with the loose pulley on said shaft by a shifting-bar M, longitudinally movable in bearings on the frame. A coiled spring M′ on said bar exerts a force to hold the same shifted to a position to hold the belt in engagement with the loose pulley and is moved against the action of said spring to shift the belt to the tight pulley and drive the winding-shaft by a cable M^2, secured to the end of said bar and passing over a pulley on the frame to a treadle M^3 on the floor beneath.

In winding certain kinds of fabrics it is found necessary to provide means for securing the inner end of the cloth to the winding-shaft in starting, and in Fig. 5 a shaft provided with such means is shown. The shaft N is provided with a longitudinal groove N′ to receive a binding-bar N^2, which is held in place within said groove to clamp the cloth therein by rings N^3, fitting over the reduced ends N^4 of the shaft.

The roll of fabric to be rewound being suspended as described, when one edge of the fabric is tighter than the other the end of the roll at that side of the fabric which is tightest will swing inward, thus compensating for such difference and giving an even strain on the fabric, and by providing the combination of rolls and rods the tension under which the fabric is fed to the winding-shaft is easily regulated for various widths of goods.

Having thus fully described my invention, what I claim is—

1. In a rewinding-machine, the combination with a winding-shaft and means for actuating the same, of a bar for supporting the roll to be rewound, and means whereby the bar is supported and permitted to move horizontally in any direction.

2. In a rewinding-machine, the combination with a winding-shaft and means for actuating the same, of a bar for supporting the roll to be rewound, and means engaging said bar to suspend the same and allow it to freely swing.

3. In a rewinding-machine, the combination with a winding-shaft and means for actuating said shaft, means for supporting and guiding the strip of material to be wound, a bar for supporting the roll of material to be rewound, and vertically-extending flexible means for supporting said bar attached to the ends thereof and secured to a suitable support at a distance above the roll.

4. In a rewinding-machine, the combination with a winding-shaft and means for actuating said shaft, of a bar for supporting the roll to be rewound and a flexible support to engage and support each end of said bar.

5. In a rewinding-machine, the combination with a winding-shaft and means for actuating said shaft, of means over which the strip of material to be wound is led to put a strain thereon, a bar for supporting the roll to be rewound, and ropes secured at their upper ends to a suitable support and at their lower ends, attached to the ends of said bar to suspend the same.

6. In a rewinding-machine, the combination with the frame, ropes secured to a support forward of the frame and near the upper end thereof, rings on the lower ends of said ropes, a bar for supporting the roll to be rewound adapted to engage said rings at its ends, means on the frame over which the strip from the roll is led to put a frictional strain thereon, a winding-shaft mounted in bearings on the frame, and means for actuating said shaft.

7. In a rewinding-machine, the combination with a frame thereof, of means for suspending the roll to be rewound at the forward side of the frame and free to swing, a supporting cross-bar on the frame near the upper end

thereof provided with slots, studs having bolts extending through said slots and provided with nuts to engage the bar, rods extending across the frame at the rear side thereof over which the strip may be led vertically, rolls journaled in bearings on the frame adjacent to said rods, a driving-shaft provided with a socket mounted in bearings at the forward side of the frame, a tight and a loose pulley on said shaft, a longitudinally-movable shaft having a socket, a winding-shaft having squared ends to engage said sockets, means for preventing the longitudinally-movable shaft from moving longitudinally, a shifting-bar for shifting the belt on said pulleys, a spring for actuating said bar in one direction, and a treadle for actuating the same in the opposite direction.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES KRAUSE.

Witnesses:
OTTO F. BARTHEL,
OLIVER E. BARTHEL.