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E. H. MARBLE.

LIFTING MECHANISM FOR THE CUTTING PARTS OF CLOTH
SHEARING MACHINES.

APPLICATION FILED NOV. 17, 1902.

NO MODEL.

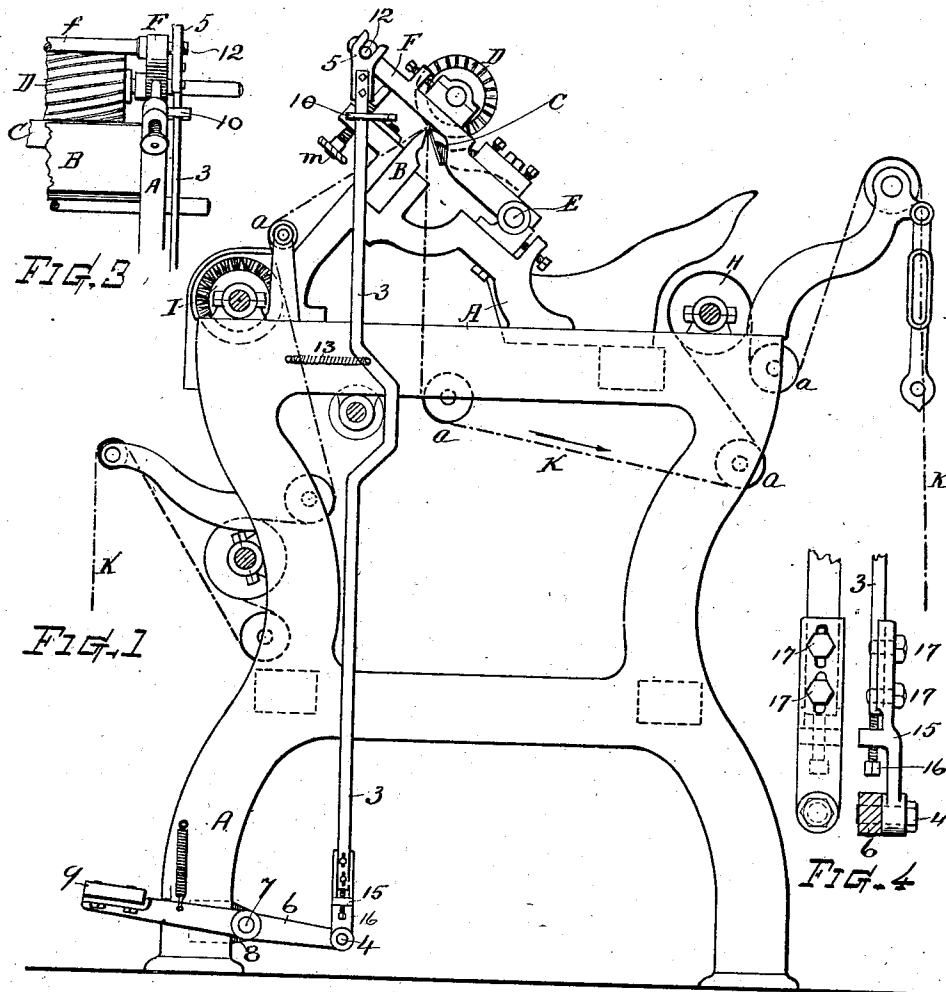


FIG. 3

FIG. 1

FIG. 4

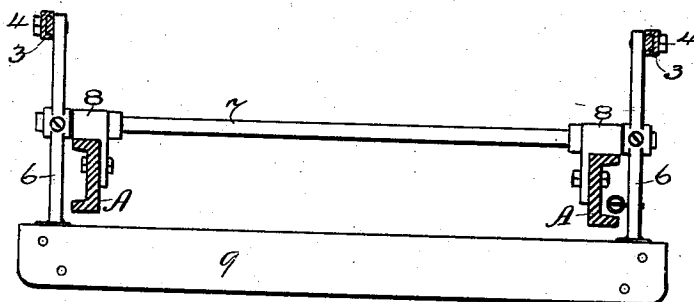


FIG. 2

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UNITED STATES PATENT OFFICE.

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LIFTING MECHANISM FOR THE CUTTING PARTS OF CLOTH-SHEARING MACHINES.

SPECIFICATION forming part of Letters Patent No. 721,903, dated March 3, 1903.

Application filed November 17, 1902. Serial No. 131,657. (No model.)

To all whom it may concern:

Be it known that I, EDWIN H. MARBLE, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Lifting Mechanism for the Cutting Parts of Cloth-Shearing Machines, of which the following, together with the accompanying drawings, is a specification sufficiently full, clear, and exact to enable persons skilled in the art to which this invention appertains to make and use the same.

In the operation of cloth-shearing machines it is customary to sew or otherwise secure the ends of several pieces of goods together for forming a long run or strip and for facilitating the continuous feed of the consecutive pieces of goods through the machine, and as the several end-uniting seams approach the shearing-cutters the latter have to be lifted or raised from the guide-rest to permit the additional thickness of cloth at the seamed portions to pass without being cut through the cloth. This lifting may be required once every five minutes, more or less, on a full-length web of cloth or several times a minute on some figured goods, such as madras curtain or similar short fabrics. Not only is a lift of the shearing-cutters required for allowing seams to pass, but in many kinds of goods, particularly those having a prominent figure or raised pattern, it is commonly necessary to lift the cutting parts several times during the run of each piece to avoid damage to the fabric, as such goods are liable to draw irregularly and require more or less straightening out by the hands of the attendant. The lifting of the cutting parts has heretofore been performed by the attendant taking hold of the cross-bar at the front of the frame on which the shearing revolver or cylinder is mounted, and this usually required the attendant to stand centrally in front of the machine, especially in the case of a broad shear, and also requiring generally the use of both hands to properly effect the lifting of the cutting parts.

The object of my present invention is to provide a cloth-shearing machine with practical and convenient means for facilitating

the lifting of the cutting parts, comprising the shearing-revolver and ledger-blade, away from the guide-rest for permitting free passage over the guide-rest of the end-connecting seams and similar excrescences in the fabric without interference or contact with the cutters or for any readjustment or correction in the running of the goods; also, to afford a cutter-lifting means, in combination with a cloth-shear, whereby the attendant is enabled to raise the shearing-cutters as required, while leaving both his hands at liberty for distending the cloth, removing wrinkles therefrom, or for otherwise manipulating the fabric or mechanism as may be at the time demanded. I attain these objects by the mechanism illustrated in the accompanying drawings, wherein—

Figure 1 represents a side view of such parts of a cloth-shearing machine embracing my improvement as will show the nature of my invention. Fig. 2 represents a horizontal sectional view showing the rocker-levers and foot-board. Fig. 3 represents a front view of a portion of the upper part of the machine, and Fig. 4 shows the detail of the connection-adjusting devices.

In referring to the drawings, A indicates the main frame of usual or suitable construction as employed in cloth-shearing machines for supporting the operating parts thereof.

B indicates the guiding-rest over which the fabric is drawn for presentation of its pile or nap to the shearing-cutters.

C indicates the ledger-blade, and D the shearing cylinder or revolver, which are arranged for operation in well-known manner, mounted upon the cutter-carrying frame F, that is hingedly connected to the stationary frame A by the shaft or axis E and is adapted to swing upward or away from the guide-rest B. Its forward end is provided with the transverse hand-bar *f*, as usually employed.

H indicates the feed or draft roll, I the brush, and *a* the guide-rollers for directing the cloth (represented by the dot-and-dash line K) through the machine in the direction indicated.

It will be understood that the pulleys, belts, and means for rotating the shearing-revolver

and operating and controlling the feeding and brushing devices of the shearing-machine may be of usual construction; but such parts are omitted from the present drawings, since they are well known and do not constitute an essential feature of my invention.

In accordance with my invention there is provided at each side of the machine a lifting connection 3, having an upper end or head 5 operatively engageable with the cutter-carrying frame F, while its lower end is joined by a pivot-stud 4 to the rear arm of a rocker-lever 6, that is mounted on a fulcrum axis or shaft 7, supported in suitable stationary bearings 8, fixed to the lower part of the frame A, said shaft preferably being movable in its bearings and extending across the frames for uniting the rocker-levers at each side of the machine to rock in unison.

A pedal-bar or foot-board 9 is supported upon the forwardly-projecting arms of the rocker-levers 6 and extends across the front of the machine, as shown.

The upper part of the connecting-bar 3 is supported to slide freely in a guide 10, attached to machine-frame, and the head 5 of the bar is furnished with a jaw or upwardly furcated, the fork thereof being adapted to engage with a projection or stud 12, fixed in the end of the cutter-carrying frame. The slot or opening through the guide 10 is elongated to permit limited backward-and-forward swing of the bar 3 to accommodate the curved line of movement of the hinged frame F, and a small spring 13 may when desired be attached to the connecting-bar to normally draw it to the front end of said slot.

The jaw of the forked head 5 is best disposed in inclined position or arranged to approximately correspond with the arc or line of movement of the swinging end of the frame F, and said jaw is open upwardly, but engages beneath the stud 12, so that while an upward movement of the connection-bars 3 will lift the cutter-carrying frame said frame can also be lifted independently by hand by the bar/ without reference to the connections 3, the studs 12 passing out of the forks 5 and returning thereinto when the frame is again dropped to working position.

The connecting-rods 3 are best provided at either their upper or lower ends with adjusting means for varying the length thereof. Such means is shown in Fig. 4 in detail, consisting of a grooved bracket or joint member 15, embracing the bar 3 and provided with an end-wise-adjusting screw 16, fitted in a lug thereon, and clamping-screws 17, arranged through longitudinal slots in the plate of the member 15 for holding and releasing the adjustment.

In the operation of a cloth-shearing machine embodying my invention the attendant by placing his foot upon the foot-board 9 effects the lifting of the cutting parts away from the guide-rest whenever necessary or desired without passing to the central front

of the machine, and this can be accomplished while his hands may be occupied in manipulating the fabric or correcting the draft thereof.

What I claim as of my invention, and desire to secure by Letters Patent, is—

1. In a cloth-shearing machine, in combination with the cutter-carrying frame, and the shearing-revolver and ledger-blade mounted on said frame; a cutter-lifting mechanism comprising a pair of rocking levers, a fulcrum therefor supported on the main frame, a treadle-board or foot-piece supported on said rocker-levers, connecting-bars pivoted to the rear arms of said rocker-levers, and having their other ends connectedly engaging with the ends of said cutter-carrying frame, for operation substantially as set forth.

2. In combination with the hingedly-supported cutter-carrying frame, and cloth-guiding rest, in a cloth-shearing machine; a lifting mechanism comprising a treadle mechanism and lift-rods actuated thereby, said lift-rods adapted for unattached engagement with said cutter-carrying frame for lifting action, guides for supporting said lift-rods in relation to the frame, and means for adjusting the working length of said lift-rods, substantially as set forth.

3. In a cloth-shearing machine, in combination with the guiding-rest, and the movable cutter-carrying frame having the ledger-blade and the revoluble shear-cylinder mounted thereon, said frame having studs or projections at the ends thereof; a pair of lifting-bars having bifurcated ends that engage the studs or projections on said carrying-frame, guides for said lift-bars attached to the main frame, pivotally-supported rocker-levers connected with the foot of said lift-bars, and a foot-board or tread-piece carried upon the opposite ends of said rocker-levers.

4. In a cloth-shearing machine, in combination with the cutter-carrying frame, and the shearing-revolver and ledger-blade supported thereon, said frame provided with projections or engaging studs at its respective ends; a cutter-lifting mechanism comprising a fulcrum-shaft mounted in bearings near the foot of the machine-frame, pedal-levers arranged on said shaft, a foot-board upon and uniting said levers, lifting bars or connections pivoted to said levers, and provided with open forked heads, the slots of said forked heads formed with an inclination or curvature to accommodate the release movement of said engaging studs to permit said cutter-carrying frame to be swung upward independently of the lifting connections; or raised by the action of said lifting connections.

Witness my hand this 13th day of November, 1902.

EDWIN H. MARBLE.

Witnesses:

CHAS. H. BURLEIGH,
ELLA P. BLENUM.