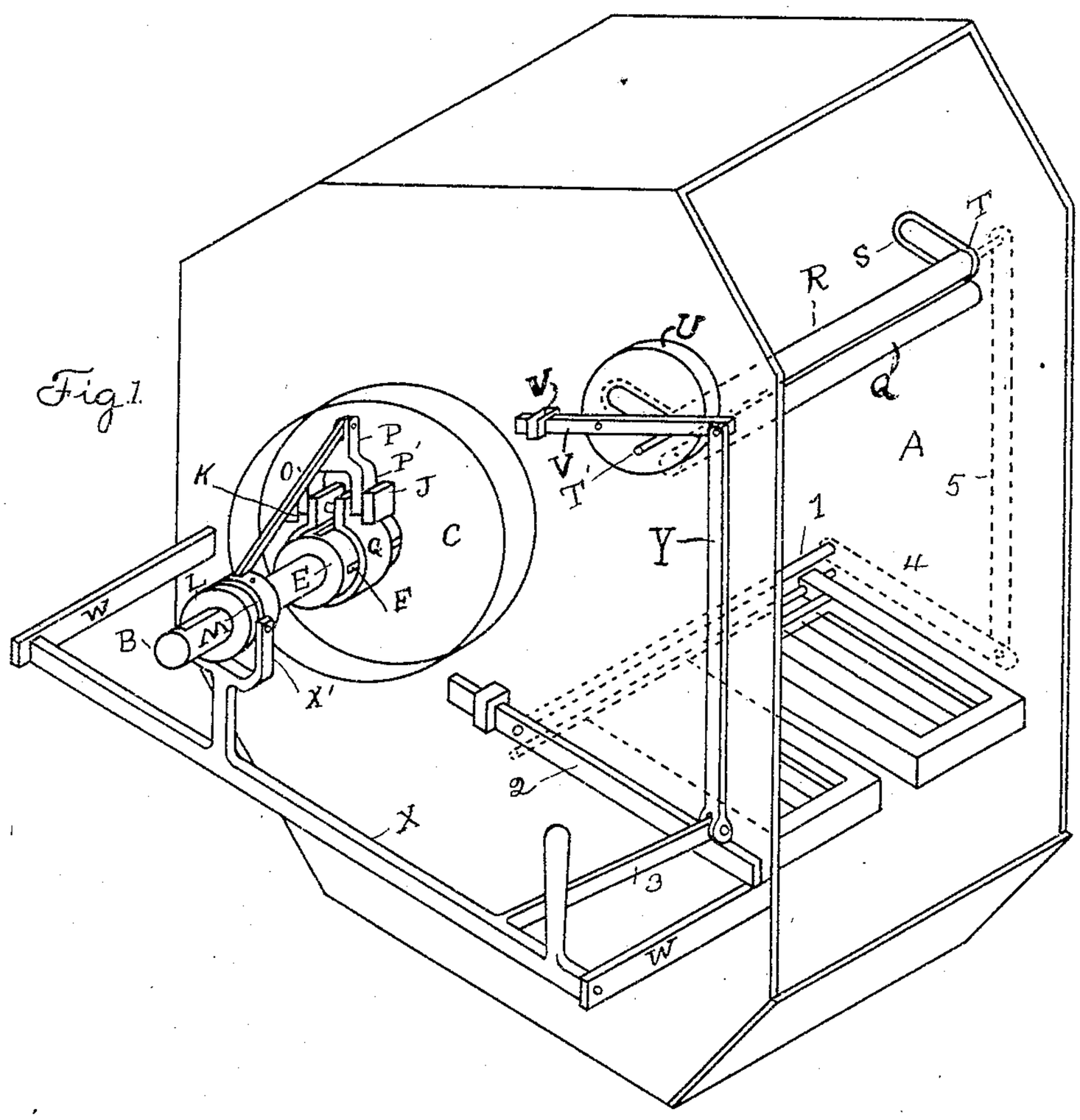
No. 779,657. PATENTED JAN. 10, 1905.

W. H. LEAVITT.

STOP MOTION FOR FULLING MACHINES.

APPLICATION FILED JAN. 8, 1904.

Fig. 1.



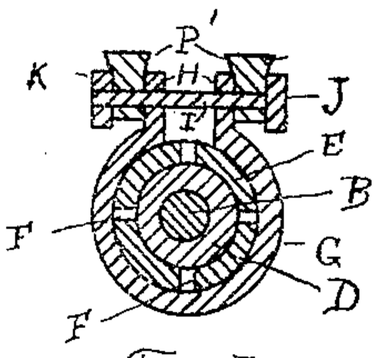


Fig. 3.

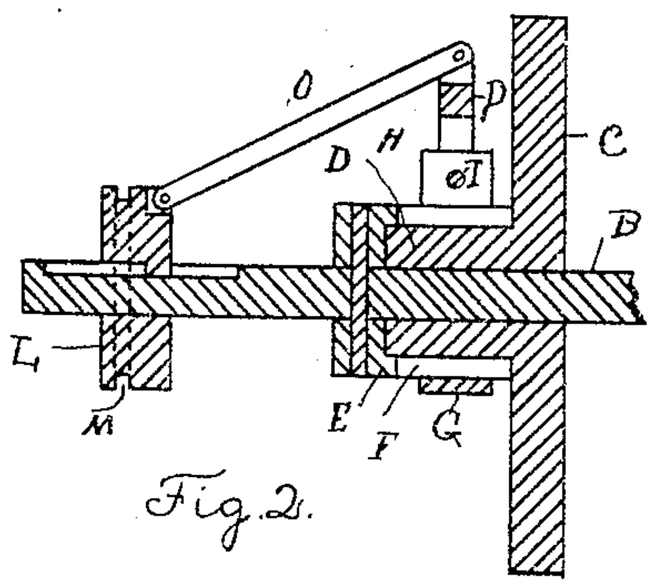


Fig. 2.

WITNESSES:
Marion Richards.
Lauren M. Fairbanks.

INVENTOR:
William H. Leavitt
by Clifford Verrill & Clifford
attorneys

PHOTO-LITHOGRAPHED BY SACKETT & WILHELMS LITHO. & PTG. CO. NEW YORK

No. 779,657. Patented January 10, 1905.

UNITED STATES PATENT OFFICE.

WILLIAM H. LEAVITT, OF NEWPORT, MAINE, ASSIGNOR OF SEVEN-EIGHTHS TO JOHN A. MERRILL, JUDSON E. OAKES, ARTHUR D. MANSELL, AND SIDNEY G. MERRILL, OF NEWPORT, MAINE, AND ALBERT R. BURRELL, OF AUGUSTA, MAINE.

STOP-MOTION FOR FULLING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 779,657, dated January 10, 1905.

Application filed January 8, 1904. Serial No. 188,185.

To all whom it may concern:

Be it known that I, WILLIAM H. LEAVITT, a citizen of the United States, residing at Newport, in the county of Penobscot and State of Maine, have invented certain new and useful Improvements in Stop-Motions for Fulling-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in stop-motions for fulling-machines. It is designed to provide such machines with automatically-operating stop-motions acting either independently of the separating device or auxiliary thereto.

In fulling-machines as at present constructed the stop-motion is operated by the knots or other obstructions in the cloth engaging the bars in the separating-rack, the movement of the bar-frame caused by the knots coming in contact with the bars being transmitted by a suitable series of connections to disengage the clutch which secures the driving-pulley to the shaft. It frequently happens that the smaller knots pass loosely between the bars and fail to operate the bar-frame. In my invention I overcome this difficulty by causing the cloth to pass between two bars, the upper one being loose so that when a knot or kink in the cloth passes between said bars it forces the upper away from the lower, which motion is transmitted through a series of connections to the clutch to disengage it.

In the drawings herewith accompanying and making a part of this application, Figure 1 is a perspective view of a fulling-machine with my stop-motion attached thereto, the end being shown open to expose a part of the interior structure of the machine. Fig. 2 is a longitudinal sectional view through the pulley, clutch, and clutch-operating levers; and Fig. 3 is a transverse sectional view taken through the clutch.

Same characters of reference refer to like parts.

In said drawings A represents the sides of the frame of a fulling-machine. Mounted therein is a driving-shaft B, having loosely mounted thereon a driving-pulley C, provided with a projecting hub D. Secured to the shaft and surrounding said hub and in frictional engagement therewith is a sleeve E, provided with one or more slits F. Around said friction-sleeve passes a tightening-band G, with upwardly-extending ears H, through which passes a bolt I, provided with a head J at one end and a nut K at the other end. Splined on the shaft is a sliding disk L, having a circumferential groove M therein. Pivotally attached to said disk is the end of one member, O, of a toggle-lever. The end of the other member, P, of said toggle-lever is bifurcated and pivotally mounted one fork between the head of the bolt and one ear of the tightening-band and the other fork between the nut and the other ear of the tightening-band. In cross-section the forked ends of the member P are wedge-shaped, as seen at P', Fig. 3. Upward movement of the member P tightens the friction-band and causes the shaft to rotate with the pulley. The return down movement of the member P releases the clutch. Any suitable clutch movement may be substituted, as my invention does not pertain to the clutch mechanism, but to the means for operating it.

Passing now to the mechanism for operating the clutch, I mount between the sides of the frame in front of the drawing-rolls (not shown) two bars. The lower, Q, should be stationary, but may be rotatable, if desired. The other, R, rests loosely upon the former and has its end loosely mounted in sockets S in the sides of the frame. For convenience and freedom of movement I make the ends of the bar rounded, as seen at T, and insert in the ends thereof small pins T', which project through a slotted plate U, secured to the sides, the slots in said plate registering with

the larger slots in the sides of the frame. On the outside of that side of the frame on which the driving-pulley is mounted is a pivoted lever V, extending across the path of the projecting pin of the movable bar. Lever V may have a sliding counterbalance-weight V'. Pivotally mounted on brackets W, secured to the frame, is an angle-lever X, one arm of the angle-lever being pivotally connected with the lever V by means of link Y and the other arm of said lever being provided with a bifurcated arm X' at right angles thereto and having its ends adapted to take into groove M in the sliding disk L on the driving-shaft. The operation of this part of my invention will be readily apparent from the drawings and foregoing description, it being readily seen that when a knot in the cloth reaches the bars R and Q it immediately causes the upper bar to rise, lifting the end of lever V and transmitting a similar movement, through the connecting-link Y, to the angle-lever, throwing the sliding sleeve outwardly on the shaft and releasing the tightening-band, and thereby the friction-sleeve, thus stopping the machine.

As usually constructed the machines are double, and so it is necessary to provide means for operating the clutch from the opposite side of the machine. For this purpose a transverse bar 1 is mounted in the frame, and on the end which projects through the side of the machine toward the pulley is rigidly secured a lever-arm 2, which extends under the arm 3 of the angle-lever X, which operates the clutch. On the opposite side of the frame of the machine is a corresponding lever-arm 4, rigidly secured to said transverse bar 1, and connecting the end of said lever-arm 4 and the end of the movable bar R is a pivoted link 5. The operation of this part of my machine is readily apparent, it being evident that when a knot on this side of the machine strikes the movable bar it causes it to rise, transmitting, through the connecting-link, a similar motion to the bar 1 and lever-arm 2, which in turn simultaneously raise the lever-arm 3, thus turning the angle-lever 4 and throwing the clutch, as before. It will be noted that the obstruction will lift that end of the rod to which it is nearest, thereby rendering its operation easier and more certain by reason of the large amount of leverage available at all positions of the obstruction.

Having thus described my invention and its use, I claim—

1. In a stop-motion for fulling-machines, two bars positioned in front of the drawing-rolls, each end of one bar resting loosely in slotted guides in the frame and means operable by said movable bar to stop the machine.

2. In a stop-motion for fulling-machines, two bars positioned in front of the drawing-rolls, one adapted to rest loosely upon the other, said loose bar having rounded ends projecting into slots in the sides of the frame of the machine and lugs projecting beyond the sides of the machine, and means operable by said moving bar for stopping the machine.

3. In a stop-motion for fulling-machines, two bars extending transversely of the machine in front of the drawing-rolls, one movable relative to the other, the ends of the movable bar extending through slotted guides in either side of the frame, a clutch, a lever for operating said clutch and independent mechanisms each operable by one end of the projecting roll for operating said clutch to stop the machine.

In testimony whereof I have hereto affixed my signature, in presence of two subscribing witnesses, this 26th day of December, 1903.

WILLIAM H. LEAVITT.

In presence of—
JUDSON E. OAKES,
JOHN A. MERRILL.