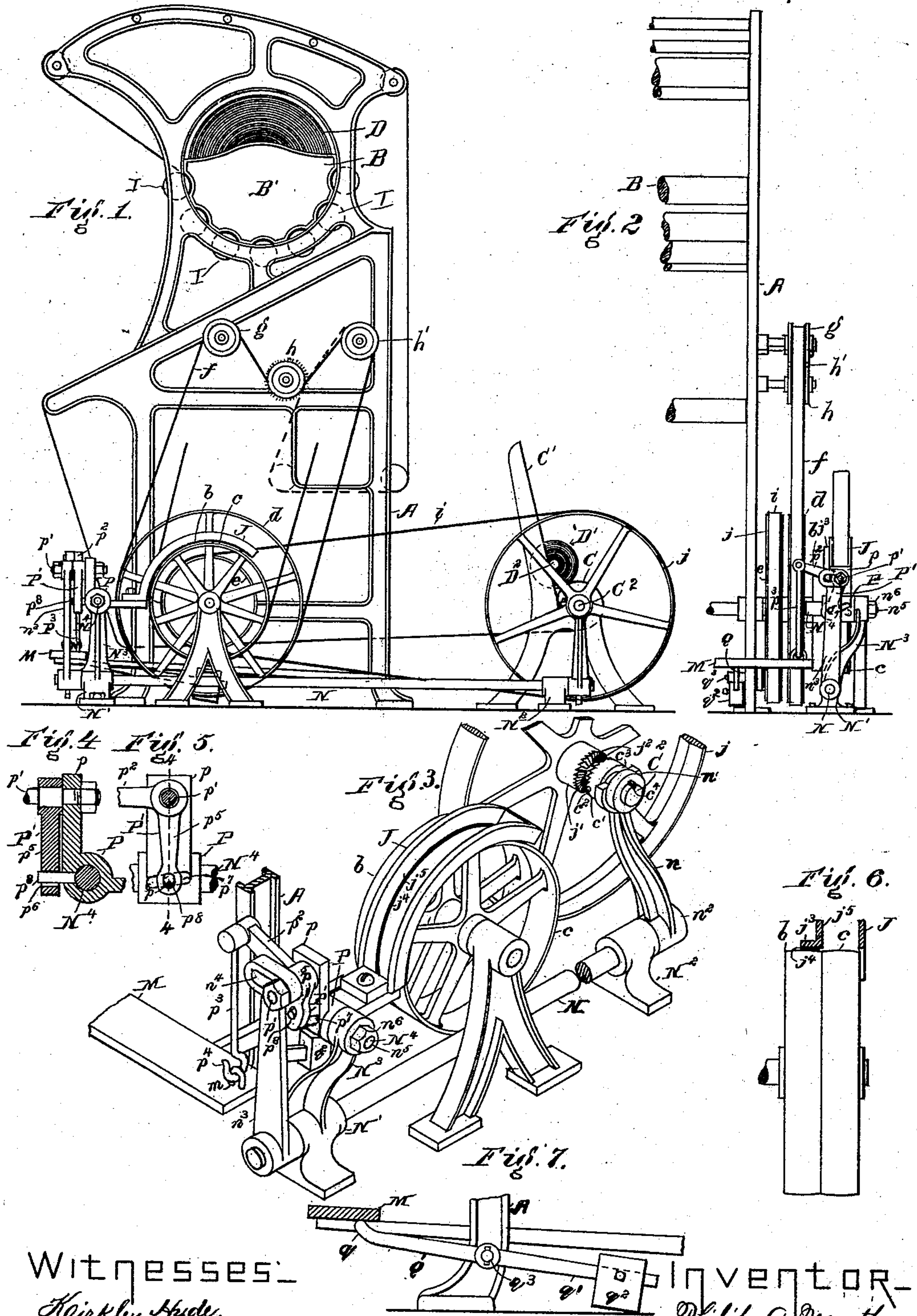


(No Model.)

P. A. MATHEWSON.
CLOTH INSPECTING AND TRIMMING MACHINE.

No. 506,706.

Patented Oct. 17, 1893.



Witnesses:
Herkley Hyde.
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UNITED STATES PATENT OFFICE.

PHILIP A. MATHEWSON, OF FALL RIVER, MASSACHUSETTS.

CLOTH INSPECTING AND TRIMMING MACHINE.

SPECIFICATION forming part of Letters Patent No. 506,706, dated October 17, 1893.

Application filed October 4, 1890. Serial No. 367,047. (No model.)

To all whom it may concern:

Be it known that I, PHILIP A. MATHEWSON, a citizen of the United States, residing at Fall River, in the county of Bristol and Commonwealth of Massachusetts, have invented a certain new and useful Improvement in Cloth Inspecting and Trimming Machines, of which the following is a specification.

My invention relates to cloth-inspecting and trimming machines, or machines which cause cloth to be drawn from a roll across an inspecting-table, where any defects may be observed by the operator, and in contact with revolving brushes which trim the cloth, either before or after it is inspected, and then cause said cloth to be wound upon a cloth-winding roll, the object of my invention being to stop the cloth instantly, at will, and to release the winding-up roll so that the cloth can be easily unwound therefrom or drawn back without reversing the movement of other parts of the machine.

In the accompanying drawings, Figure 1 is a right side elevation of such a machine, with my improvement, omitting the casing; Fig. 2, a front elevation of a part of the machine, at the right thereof, showing the actuating and shipping devices; Fig. 3, an isometric view of the actuating and shipping mechanism and a part of the cloth-winding roll and my improvement; Fig. 4, a section on the line 4 4 in Fig. 5; Fig. 5, a front elevation of the sleeve which carries the belt-shipping fork, the stud on which said sleeve slides, the slotted plate secured thereon, the bell-crank lever, pivoted on said plate, the pin which passes through the lower arm of said bell-crank lever, through the slot in said plate and into said stud; Fig. 6, a front elevation of the driving-pulley, the loose pulley, a part of the shaft of the driving-pulley and a vertical cross section of the shipping-fork in the plane of the axis of said shaft; Fig. 7, an enlarged inside elevation of part of one of the legs of the frame, part of the treadle and the weighted lever which restores the treadle to position when the operator's foot is removed therefrom.

The machine hereinafter described is in most respects like that described in Letters Patent of the United States, No. 325,581, granted September 1, 1885, to James H. Wil-

son, being a power-driven machine which draws the cloth from a cloth-roll over a table on which said cloth may be inspected by the operator and on which the cloth may be stopped, to allow a hole to be mended or darned or long threads to be trimmed, but it has been found that machines constructed according to said patent do not stop soon enough after the removal of the operator's foot from the treadle which throws on the belt, and that sometimes the defective place in the cloth gets below the table before the machine stops, requiring the machine to be run back by hand until the defective place is again upon the table.

The improvement hereinafter described not only shifts the belt from the fast to the loose pulley but disengages the winding-up roll from its pulley and puts a brake upon the driving pulley of the machine.

The frame A, fast and loose pulleys *b c*, creel B for holding the roll of cloth D, previous to inspection, the idle-rolls I, on which said roll D rests, the heads B' which may be adjustable to prevent the lateral movement of the cloth in the creel, the rotary brushes driven by the belt *f* from the pulley *d*, passing over the idle pulley *g* and pulleys *h h'* secured to said rotary brushes,—all are or may be substantially as shown and described in said patent. The winding-up roll C driven by the belt *i*, passing from the pulley *e* on the main-shaft or shaft of the driving-pulley *b*, around the pulley *j* on the shaft C² of the winding up roll C, the forwardly-inclined extensions C' (only one of which is shown, there being one at each side of the machine) of the supporting frame of the winding-up roll, against which extensions C' the ends of the iron rod or roller D² in the roll of cloth D' rest while the cloth is being wound up, are also substantially as shown in said patent, except that the pulley *j* is loose on the axle of the winding-up roll C.

The hub *j'* of the pulley *j* forms one part of a clutch, being provided with an annular ratchet *j*², and the counterpart of said clutch consists of a collar *c'*, sliding but not turning on the shaft C², said collar being provided with another annular ratchet *c*², adapted to engage the ratchet on said hub. The collar

c' is provided with an annular groove c^3 and is prevented from turning on the shaft C^2 of the winding-up roll by a spline or feather c^4 on said shaft. An arm n is provided at its upper end with a fork n' which enters the groove c^3 in the collar c' and at its lower end n^2 is secured to the rock-shaft N , so that rocking said shaft N will open and close the clutch $j' c'$. The rock-shaft N turns in suitable floor-brackets $N' N^2$ and has secured to its front end another upwardly-extending arm n^3 which has in its upper end a transverse slot n^4 . The floor-bracket N' has secured to it an upward extension N^3 above the shaft N , which extension supports a horizontal stud N^4 , the outer end of which is reduced and passed through the upper end of said extension N^3 and retained therein by a nut n^6 which turns on the reduced end n^5 of said stud outside of said extension. On the stud N^4 is a sleeve P capable of sliding and turning on said stud.

To the sleeve P is secured a belt-shipping fork J of the usual construction, except that the inner member j^5 , or one nearest the frame, of said fork is provided with a flange j^3 which has the effect of broadening the inner curved surface of said fork, to enable said fork to be used as a friction brake, and to said inner curved surface is secured any suitable rubber j^4 , as of leather, adapted to produce friction upon the fast pulley, when the fork is tipped backward, to bring said rubber against the face of said fast pulley. A plate p is rigidly secured to the sleeve P in a nearly vertical position and on a fulcrum stud p' , projecting from the upper end of said plate p , turns a bell-crank lever P' , the inner end of the nearly horizontal arm p^2 of which is pivoted to the upper end of a link p^3 , the lower end of said link being pivoted to the treadle M , as by a hook p^4 on the lower end of said link entering an eye or staple m secured to said treadle, so that depressing the treadle turns said bell-crank lever upon its fulcrum. The lower end of the nearly vertical arm p^5 of the bell-crank lever P' is provided with a vertical slot p^6 , through which and through a slot p^7 in the sleeve P projects a horizontal pin p^8 , rigidly secured in the stud N^4 , so that depressing the treadle moves the plate p , sleeve P and fork J inward and shifts the belt on to the fast pulley. The fulcrum-stud p' of the bell-crank lever P' extends through the slot n^4 in the upper end of the arm n^3 so that, when the belt is shipped to the fast pulley, as above described, said fulcrum-stud strikes the inner end of said slot n^4 , the length of the slot being adapted thereto, and draws the upper end of said arm n^3 inward or toward the frame and rocks the shaft N and couples the clutch $j' c'$ of the winding-up roll and sets the winding-up roll in operation.

When the operator wishes to stop the machine, he simply removes his foot from the treadle M which is then raised by a weighted lever Q , the front end q of which bears against

the under side of the treadle and the rear end q' of which carries a weight q^2 , said lever being pivoted at q^3 on one of the legs or posts of the frame. The rising of the treadle raises the link, turns the lever P' in the opposite direction from that above described, causing the sleeve P to slide outward, shifting the belt on to the loose pulley and at the same time opening the clutch $j' c'$ and thereby allowing the winding up roll to stop and, inasmuch as the cloth is drawn through the machine merely by the friction of the winding up roll thereon, allowing the cloth to stop.

It is desirable to stop the fast pulley instantly in order that the brushes may not continue to be rotated by the momentum of the driving pulley and connected revolving parts. This is accomplished by the application of the rubber j^4 of the friction-brake to the face of the fast pulley simultaneously with the shifting of the belt to the loose pulley, which is effected by making the slot p^7 in the sleeve P a spiral as shown in Fig. 5, instead of parallel with the axis of the stud N^4 , the inclination of said slot being inward and downward so that, as the sleeve moves outward to carry the belt on to the loose pulley, the free end of the fork is thrown backward and downward and the rubber is pressed upon the face of the fast pulley, but when the sleeve is moved in the other direction by the depression of the treadle the rubber is raised off from the fast pulley.

The construction above-described not only enables the cloth to be stopped almost instantly but also enables a defective portion of the cloth, which by inadvertence has passed over the inspecting-table, to be drawn back on to said table, unwinding the winding-up roll without reversing the movement of the other rotary parts of the machine, and thus rendering the operation of reversing the movement of the winding-up roll by hand very much easier than heretofore.

I claim as my invention—

1. The combination of the fast and loose pulleys, the driving belt, the belt-shipping fork normally holding said belt upon said loose pulley, the rock-shaft rocked by the movement of said fork, the winding-up roll, a pulley loosely turning on the shaft of said winding-up roll and having a hub which forms one member of a clutch, and a counterpart or other member of said clutch sliding without turning on said shaft and caused to engage said first-named member of said clutch by the movement of said fork in a direction to shift the belt from the loose to the fast pulley, the parts of said clutch being normally disengaged, as and for the purpose specified.

2. The combination of the fast and loose pulleys, the driving belt, the belt-shipping fork normally holding said belt upon said loose pulley, a rock-shaft, rocked by the movement of said fork, the winding-up roll, another pulley loose on the shaft of said winding-up roll and having a hub which forms one

member of a clutch, the other member of said clutch sliding upon the shaft of said winding-up roll but prevented from turning thereon by a spline with which said winding-up roll shaft is provided, and having an annular groove, said rock-shaft having an arm, provided with a fork, adapted to enter said groove and to close said clutch by the rocking of said shaft when said fork is moved in a direction

to shift the belt from the loose to the fast to pulley, as and for the purpose specified.

In witness whereof I have signed this specification, in the presence of two attesting witnesses, this 29th day of June, A. D. 1889.

PHILIP A. MATHEWSON.

Witnesses:

JOHN SMITH,

ARNOLD B. MATHEWSON.