(No Model.) 3 Sheets—Sheet 1.

J. J. SCHOLFIELD.

FEEDING MECHANISM FOR CLOTH FINISHING MACHINES.

No. 380,139. Patented Mar. 27, 1888.

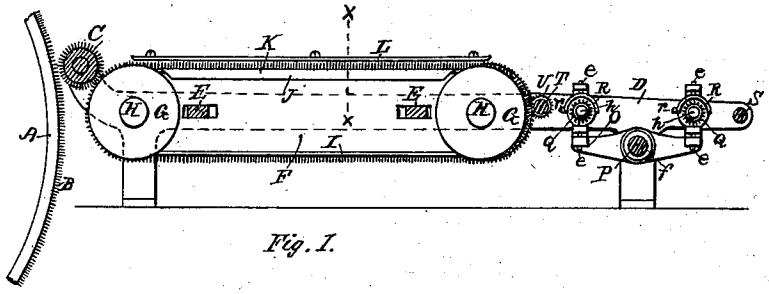


Fig. 1.

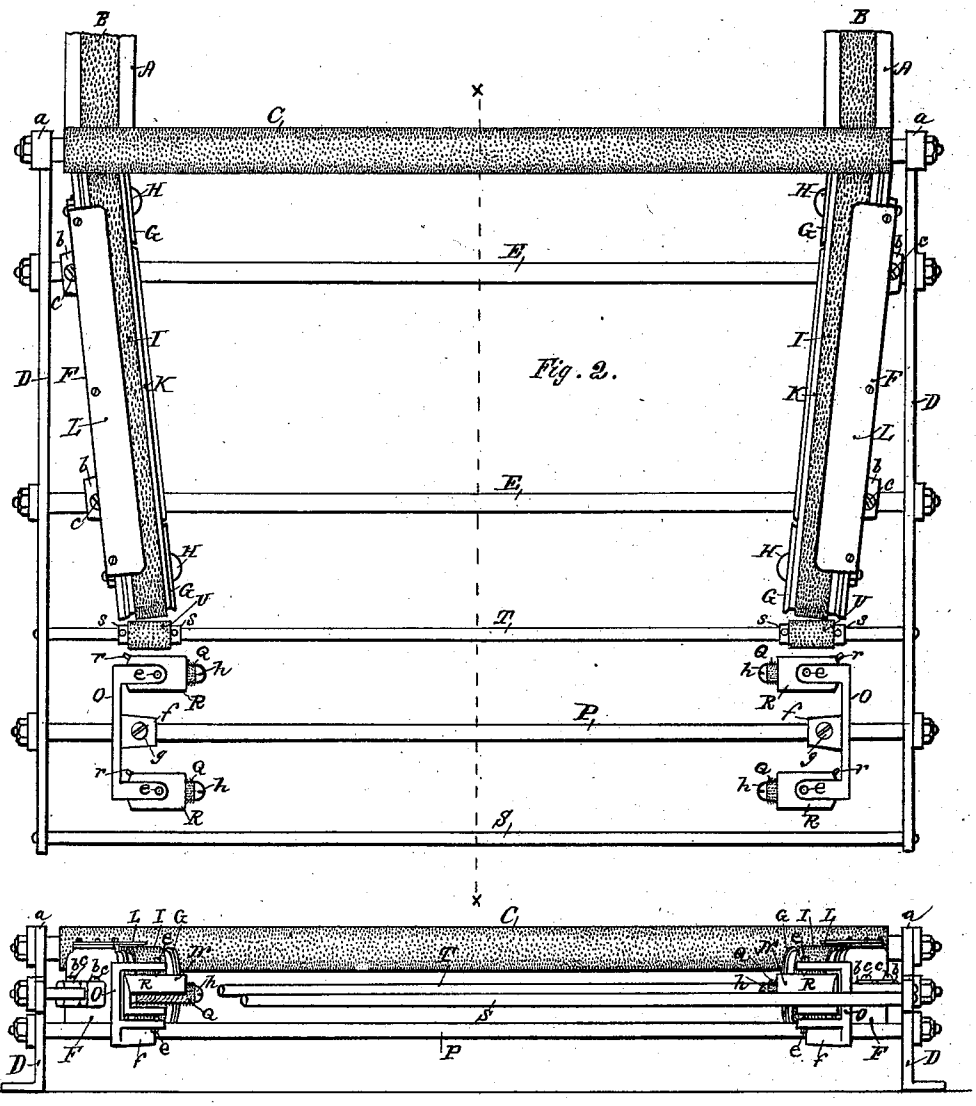


Fig. 2.

Fig. 3.

Witnesses.
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(No Model.) 3 Sheets—Sheet 2.

J. J. SCHOLFIELD.

FEEDING MECHANISM FOR CLOTH FINISHING MACHINES.

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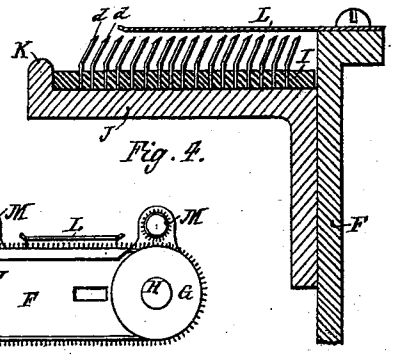


Fig. 4.

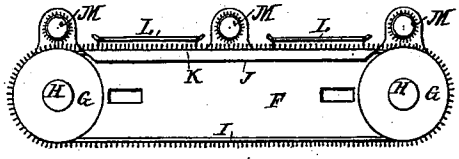


Fig. 7.

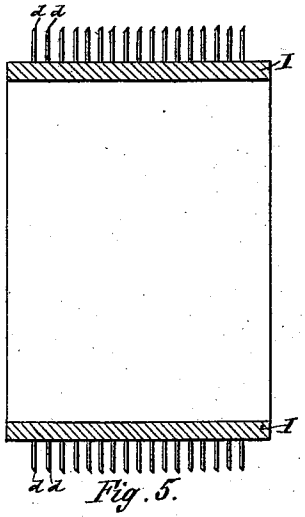


Fig. 5.

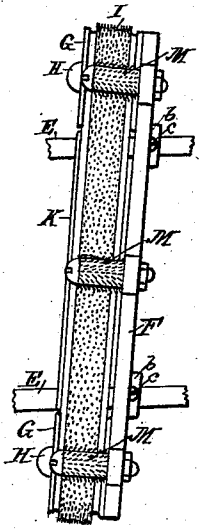


Fig. 8.

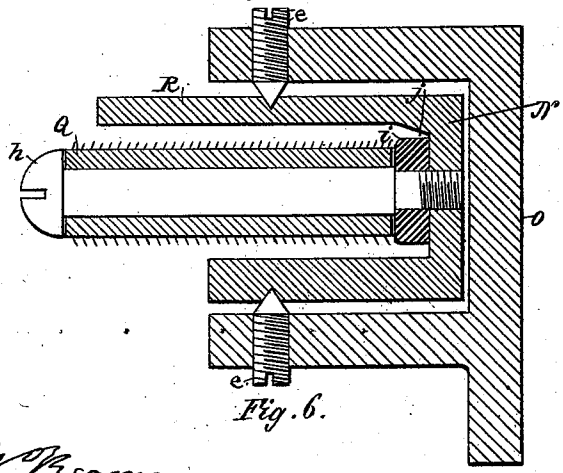


Fig. 6.

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(No Model.) 3 Sheets—Sheet 3.

J. J. SCHOLFIELD.

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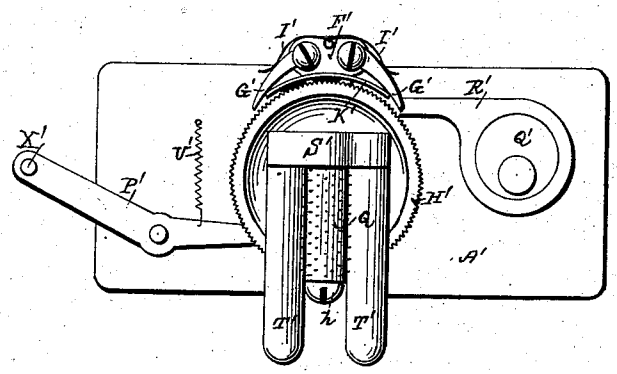


FIG. 9.

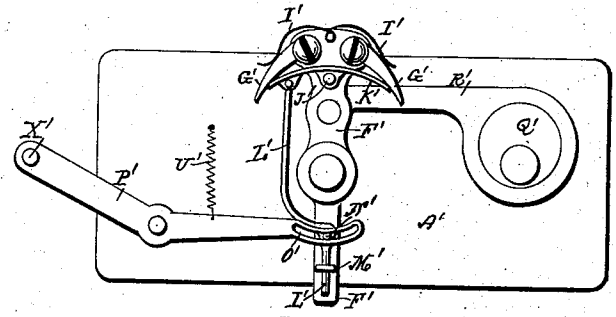


FIG. 10.

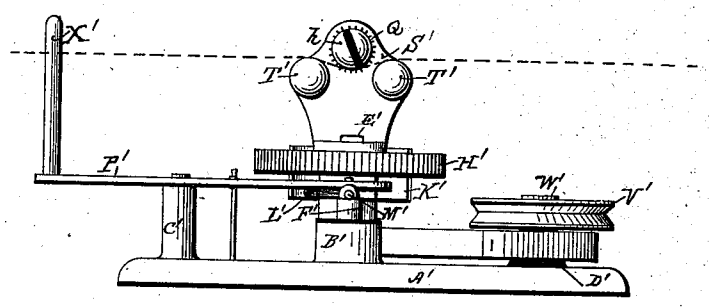


FIG. 11.

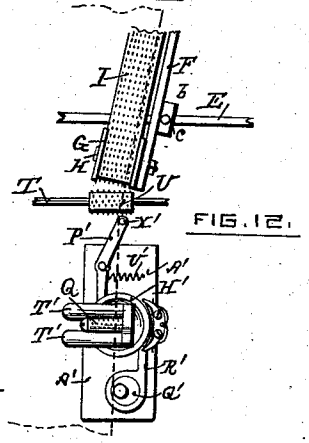


FIG. 12.

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UNITED STATES PATENT OFFICE.

JOSEPH J. SCHOLFIELD, OF PROVIDENCE, RHODE ISLAND.

FEEDING MECHANISM FOR CLOTH-FINISHING MACHINES.

SPECIFICATION forming part of Letters Patent No. 380,139, dated March 27, 1888.

Application filed November 27, 1886. Serial No. 220,092. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH J. SCHOLFIELD, a citizen of the United States, residing at Providence, in the State of Rhode Island, have invented a new and useful Improvement in Feeding Mechanism for Cloth-Finishing Machines, of which the following is a specification.

My invention consists in the combination of an endless spur-belt with a pivotally-held spur-roller or a pivotally-held roller provided with a friction-surface adapted to deliver the edge of the web to the spurs of the belt in an approximately-true line, and in the combination of the endless spur-belt, the pivotally-held spur-roller, and guide-rollers adapted to hold the edge of the web in contact with the spurs of the endless belt, and in the improved combination of the spur-roller with a pivoted temple-frame, as hereinafter fully set forth.

Figure 1 represents a vertical section taken in the line *x x* of Fig. 2. Fig. 2 is a plan view of my improvement as applied to feed a web of cloth to the drying-cylinder of a cloth-drying machine. Fig. 3 is an elevation of the feeding-in end of the mechanism. Fig. 4 represents an enlarged detail section taken transversely of the belt and the belt-carrier in the line *x x* of Fig. 1. Fig. 5 represents an enlarged transverse section of the endless belt, showing a modified form of the holding-spurs. Fig. 6 is an enlarged vertical section of the pivotally-held spur-roller and its supporting-bracket. Figs. 7 and 8 are detail views showing the combination of supplemental spur-rollers with the endless spur-belt. Fig. 9 is a top view of a pivoted spur-roller operated by means of a regulating mechanism, which serves to dispense a portion of the driving-power of the machine to move the roller upon its pivot, as required, the driving-pulley being removed. Fig. 10 is a plan view showing the regulating mechanism, the spur-roller and the ratchet-wheel and driving-pulley being removed. Fig. 11 is an elevation of the pivoted spur-roller and the regulating mechanism. Fig. 12 is a detail plan view showing the arrangement of the spur-belt with the pivoted spur-roller, which is operated by the regulating mechanism.

In the accompanying drawings, A A represent a portion of the opposite heads of the drying-cylinder of a cloth-drying machine, the peripheries of which are provided with the attached bands of card-clothing B, which are adapted to hold the web in its outspread condition while being dried.

Near the surface of the card-clothing bands B B is placed the card-covered roller C, which extends from side to side of the machine, so as to embrace the full width of the web which is to be fed to the same. The roller C is loosely journaled in the bearings *a a* of the frame D, which is provided with the two parallel rods E E, upon which are placed the oppositely-inclined adjustable belt-carrier frames F F, which are provided with the slotted hubs *b b* and the set-screws *c c*, thus permitting the carriers to be set and firmly held at any desired degree of inclination to the axis of the web.

Upon the inner side of the belt-carrier frame F, and at its opposite ends, are placed the flat scored pulleys G G, which turn loosely upon the studs H H, and upon the scored faces of the pulleys G G is placed the endless spur-belt I, which is also supported at its working upper portion by means of the flange J of the carrier-frame, which flange is provided with an upwardly-turned rim, K, serving to support the edge of the belt against the transversely-directed drawing-strain of the web. Over the spurs of the belt I, and in close proximity thereto, so as to leave about the thickness of the edge portion of the web between them, is placed the plate L, which serves to hold the edge portion of the web firmly against the spurs of the belt, or the spur-rollers M M, set at right angles to the axis of the spur-belt, as shown in Figs. 7 and 8, may be employed for this purpose, the plates L shown in Fig. 7 being omitted in Fig. 8. The spurs *d d* of the flexible belt I are beveled outwardly, and also bent in the same direction, as shown in Fig. 4, in order to firmly hold upon the edge portion of the web; but in some cases the outward bending may be omitted, as shown in Fig. 5. The edge of the web may be guided upon the spurs of the belt I by means of one or more pivotally-held roller-temples, N N, which, by automatically turning upon their pivots when the edge of the web is being drawn through the said temples, will serve to keep the edge of the web in an approximately

true line for running onto the spurs of the belt.

The roller-temple N (shown in the enlarged section, Fig. 6) is pivoted to the adjustable furcated arm O by means of the pivot-screws *e e*, the said arm being provided with a hub, *f*, and set-screw *g*, so as to be capable of ready adjustment upon the tie-rod P of the frame D. The spur-roller Q of the temple is held loosely upon the screw-stud *h*, at the base of which is placed the collar *i*, the said stud being held in the pivoted frame R of the temple. The periphery of the collar *i* is preferably roughened, so as to cause friction when the edge of the web comes in contact therewith, and the corner *j* of the frame R is beveled, thus forming with the periphery of the collar *i* a wedge-formed groove for the reception of the edge of the web when running at its proper outward position. The portion of the roller Q which lies outside of a line joining the extremities of the pivot-screws *e e* is made longer than the inner portion of the same, so that when the edge portion of the web is inclined to run off of the roller Q the said roller and its frame R will turn upon the pivots *e e*, thus causing the edge of the web to again run onto the roller, and by this means preserving a nearly-uniform running-line for the edge of the web.

The roller-temple is to be so pivoted and set that the edge of the web will run in the wedge-shaped groove formed between the periphery of the collar *i* and the frame R, so that upon any excess in outward movement of the edge of the web the increased friction produced by the narrowed portion of the wedge-shaped groove upon the edge of the web will cause the roller and its pivoted frame to turn upon the pivots, so as to cause a slight backward movement of the said edge, thus tending to preserve the edge of the web in an approximately true running-line for guidance onto the spurs of the belt. The projecting stop *r* upon the rear of the roller-frame R serves to prevent excessive pivotal movement in the direction of the running web. The frame D is also provided with the tie-rods S and T, and upon the rod T, between the adjustable collars *s s*, are placed the card-covered rollers U U, which revolve loosely upon the rod T and serve to press the web against the adjacent ends of the spurs of the endless belts I I. The web in its passage through the machine passes from a loose pile over the rod S, thence through the roller-temples N N and under the rod T and rollers U U onto the inclined endless spur-belts I I, which serve to stretch the web widthwise, and thence under the card-covered roller C and onto the heads A A of the drying-cylinder. The pivotally-held temple-roller, instead of being operated by means of the tractive force of the web, may be operated by means of any suitable regulating mechanism, if preferred.

The web when passing through the pivoted temples N N should be in a comparatively loose condition widthwise, for the reason that the strain upon the temples caused by the widthwise tension of the web tends to interfere with their proper pivotal action. The belt I, as shown in the accompanying drawings, is preferably made of leather or other flexible material, the spurs *d d* being inserted therein, as in card-clothing.

The pivoted spur-roller may be operated by means of a regulating mechanism which dispenses a portion of the driving-power of the machine to effect the required change in the angular position of the said roller, as shown in Figs. 9, 10, 11, and 12, in which A′ is a bed-plate provided with the hubs B′ C′ D′. Upon the stud E′, which enters the hub B′ and is secured thereto, is loosely placed the vibrating lever F′, one end of which is provided with the oppositely-arranged catches G′ G′, which, when in action, are held against the teeth of the ratchet-wheel H′ by means of the springs I′.

To the vibrating lever F′ at the point J′ is pivoted the catch-guard K′, to which is pivoted the rod L′, which is loosely held in the guide M′ at the opposite end of the lever F′, and which is provided with the stud-pin N′, which enters and loosely fits the circular slot O′ at one end of the detector-lever P′, the said lever P′ being pivoted to the hub C′ of the base-plate, so that a vibrating movement can be imparted to the lever F′ by means of the eccentric Q′ and connecting-rod R′ without imparting a corresponding movement to the connected detector-lever, the said eccentric being secured to a driving-pulley, V′, which is loosely held upon the stud W′, secured to the hub D′ of the bed-plate. The spur-roller Q is held to revolve upon a screw-stud, *h*, projecting at one side of a head, S′, which is secured to the ratchet-wheel H′, so as to move therewith, and is flanked on either side by the guiding-studs T′ T′, which serve to guide the edge portion of the web properly around a portion of the periphery of the said spur-roller Q, in order that a change in the angular position of the head S′ will cause the spur-roll to move the edge of the web, as required.

The combination of the mechanism above described with the spur-belt is shown in Fig. 12, in which the movement of the detector-lever outward against the action of the spring U′ by the pressure of the edge of the web against the pin X′ of the detector-lever will cause a tilting movement of the pivoted guard K′, which is attached to the vibrating lever F′, thus allowing one of the catches, G′, to act upon the teeth of the wheel H′ to cause the required change in the angular position of the spur-roller Q to cause the reverse movement of the edge of the web upon the spur-belt, and when the edge of the web has a tendency to run inwardly the detector-lever will be caused to follow up the said edge through the resilient action of the spring U′, so that the pivoted guard K′ will be caused to tilt in the opposite direction, whereby the opposite catch, G, will be caused to engage with the teeth of the ratchet-

wheel H', thus causing the reverse pivotal movement of the spur-roller Q to correct the said variation in the running edge of the web.

I claim as my invention—

1. The combination, with the obliquely-set spur-belt adapted to stretch the web widthwise, of the pivoted temple-roller adapted to deliver the edge of the web to the spurs of the belt in an approximately true line, substantially as described.

2. The combination, with the obliquely-set spur-belt, of the supplemental spur-rollers arranged at right angles to the axis of the spur-belt for holding the edge of the web upon the spurs of the belt, substantially as described.

3. The combination, with the obliquely-set spur-belt, of the pivotally-held temple-roller adapted to deliver the edge of the web to the spurs of the belt in an approximately true line and the intermediate roller for pressing the edge portion of the web against the spurs of the belt, substantially as described.

4. The combination, with the pivoted temple-roller frame provided with the wedge-shaped groove for applying friction to the edge of the web to cause the proper guidance of the same, of the temple-roller for guiding the edge of the web, substantially as described.

JOSEPH J. SCHOLFIELD.

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SOCRATES SCHOLFIELD.