

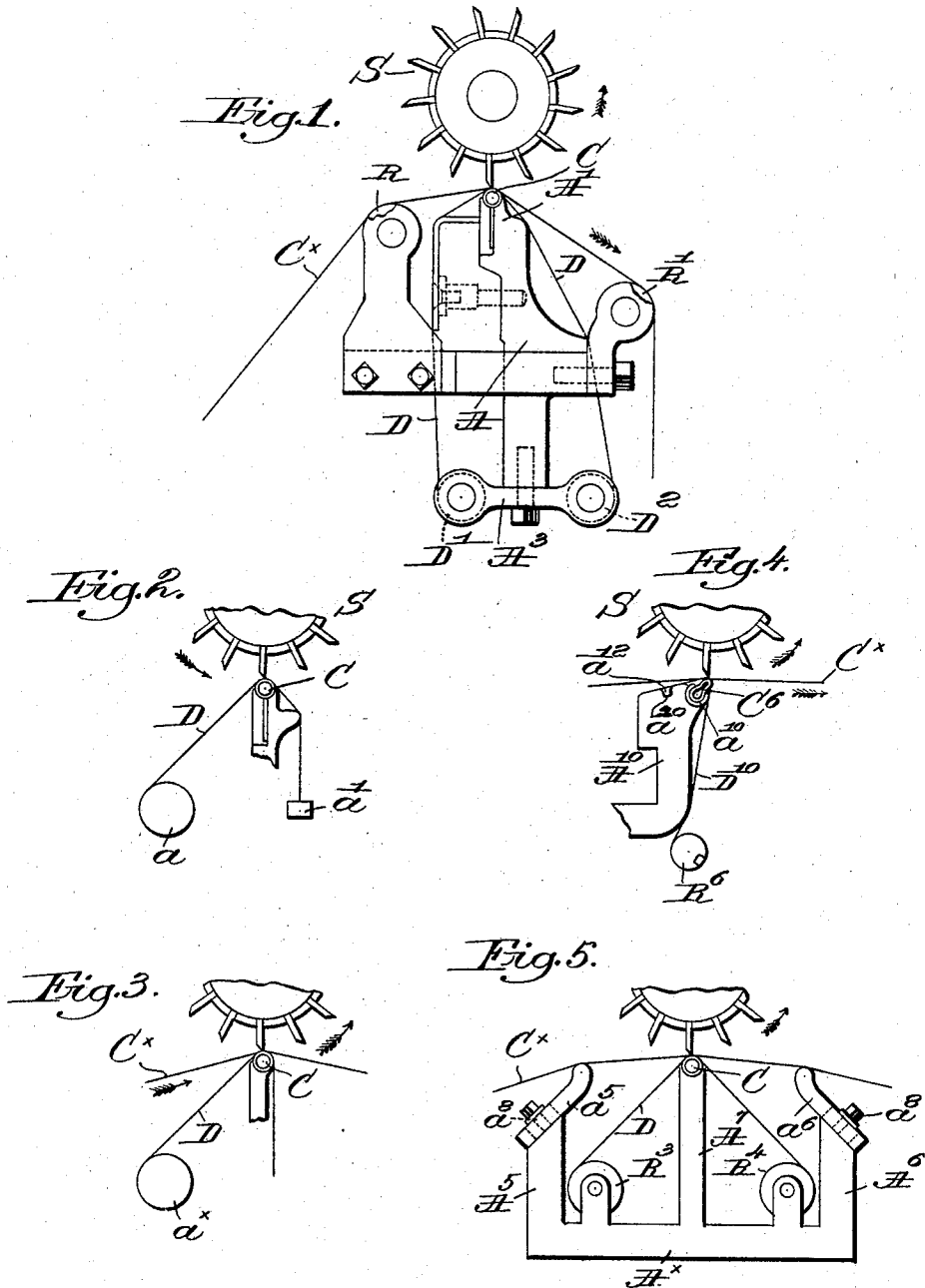
No. 609,166.

Patented Aug. 16, 1898.

C. E. RICHARDSON.
CLOTH SHEARING MACHINE.

(Application filed Dec. 10, 1897.)

(No Model.)



Witnesses:

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UNITED STATES PATENT OFFICE.

CHARLES E. RICHARDSON, OF SPRINGFIELD, VERMONT, ASSIGNOR TO THE
PARKS & WOOLSON MACHINE COMPANY, OF SAME PLACE.

CLOTH-SHEARING MACHINE.

SPECIFICATION forming part of Letters Patent No. 609,166, dated August 16, 1898.

Application filed December 10, 1897. Serial No. 661,348. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. RICHARDSON, of Springfield, county of Windsor, State of Vermont, have invented an Improvement in Cloth-Shearing Machines, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

10 This invention relates to that class of cloth shearing or cropping machines wherein the cloth to be treated passes over a stationary bed and is acted upon by a suitable shearing or cutting device. In order to prevent uneven or improper shearing, a yielding cushion is mounted on the bed in such manner as will prevent its rotation, the cushion yielding to any knot or hard substance at the back of or underneath the cloth. After the cushion has been properly leveled and straightened on its top surface it is important that it be maintained in such position, for if tampered with it will get out of level and the cloth will not be held evenly to the action of the shearing-blades, resulting in streaky shearing. So, too, if the tube should rotate, any slightly-flattened, oval, or other than exactly round section coming uppermost, the cloth would not be evenly presented and streaky shearing would be the result. Constant rotation of the cushion, usually a rubber tube, tends to lessen the diameter thereof, so that the cloth cannot be kept up properly to the shear-blades.

35 In my present invention, accordingly, I prevent the cushion from rotation on the bed, and in order to relieve the cushion from the wear of the cloth passing thereover I protect the same by a flexible apron interposed between the cushion and the cloth and held taut in any suitable manner, the apron being moved longitudinally from time to time to present a fresh wearing-surface.

45 Various other features of my invention will be hereinafter described in the specification and pointed out in the claims.

Figure 1 is an end elevation of one form of cloth-shearing machine embodying my invention, the yielding cushion, however, being shown in section. Figs. 2 and 3 are detail views of modified forms of mechanism for controlling the protective apron. Fig. 4

shows yet another modification with a yielding cushion non-cylindrical in cross-section; and Fig. 5 is an end elevation of a shearing-machine, showing another form of cloth-rest. 55

Referring to Fig. 1, the frame A, of suitable shape to support the operating parts of the machine, has at its upper portion a bed A', extended across the frame and provided at its top with a groove, in which is secured a yielding cushion C. This cushion may be conveniently made as a rubber tube and held from rotation by being cemented into the groove in the bed A' or in any other suitable manner. The upper portion of the cushion projects above the bed and forms a yielding or elastic support for the cloth C^x as it is passed thereover, so that when knots or other enlargements are on the back of the cloth the pressure of the cutter will cause such knots or enlargements to sink into the cushion, and thereby avoid injury to the cloth. 60 65 70

The cutter or shearing member S may be of any usual or well-known construction and operated by suitable mechanism. (Not shown and forming no part of my invention.) 75

In order to relieve the cushion from wear, and thereby prolong its life, I protect the same by a flexible apron D of suitable fabric, which is interposed between the cushion and the cloth and maintained taut by various means. 80

In Fig. 1 the frame has a depending portion A², provided at each end with bearings A³ for the journals of rolls D' D², upon which the ends of the apron are wound, the apron passing up from one roll over the cushion and down to the other roll. The roll-journals may fit tightly in the bearings, to be frictionally held thereby from normal rotation or by other suitable means, so that the apron is held taut and smooth over the yielding cushion C. As the apron wears it may be moved longitudinally from time to time, as often as necessary, to present a proper surface, over which the cloth passes as it is being sheared. So, too, by varying the tension of the apron the elasticity of the cushion may be regulated according to the character of the cloth being sheared, and the tendency of the cushion to rotate is also overcome. Rest-bars or supports R and R' are mounted, preferably ro- 85 90 95 100

tatably, in suitable portions of the frame-work, at front and back of the cushion, to support the cloth and prevent it from pressing too tightly upon the cushion and apron, thus preserving the sensitiveness of the cushion under the pressure of knots or lumps on the cloth and also reducing the wear upon the apron. The bars when rotatable present very little resistance to the passage of the cloth, and so do not retard it as it travels along between the cushion and the cutter.

In Fig. 2 the apron D is wound at one end upon a roll a , and after passing over the cushion C its free end is attached to a weight a' , which serves to maintain the apron taut. By letting off the apron from the roll a fresh portions are brought into position over the yielding cushion.

In Fig. 3 the weight is omitted, one end of the apron hanging free, the friction of the cloth as it passes in the direction of the arrow 10 maintaining the apron taut and smooth over the cushion. The roll a^x holds the apron in place against the pull of the cloth, and from the roll the apron can be let off as necessary.

The frame A^x in Fig. 5 is different from that shown in Fig. 1, said frame having up-rights $A^5 A^6$, beveled at their upper ends to receive rest-plates $a^5 a^6$, having rounded longitudinal upper edges, over which the cloth travels and by which it is supported. Bolts a^8 , extended through slots in the rest-plates, provide ready means for adjusting said rests as to height. The cushion C is mounted on the upturned bed A^7 , and the apron D is passed over the cushion and attached at its ends to rolls $R^3 R^4$, mounted on the frame between the uprights $A^5 A^6$.

In Fig. 4 the frame is upturned at A^{10} to form the bed and along one edge has a transverse holder a^{10} , slightly more than semicircular in cross-section, into which is forced a cushion C^6 , preferably a tube of rubber and of greater diameter than the interior of the holder. The cushion then assumes in cross-section substantially a pear shape, with the

smaller end extended outward and over which the cloth is to pass, and if the friction is sufficient to hold the cushion in place no cementing or other means for retaining it will be necessary. In front of the cushion the bed A^{10} has a transverse groove a^{20} therein, into which one end of the apron D^{10} is forced and held by a locking-bar a^{12} , the apron passing over the cushion and to a roll R^6 , from which it can be let off and a fresh portion secured to the bed. The inclined portion of the latter supports the apron adjacent the cushion C^6 and prevents too great pressure upon the latter.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a cloth-shearing machine, a bed and a cutter, a convex yielding or elastic cushion non-rotatably mounted on the bed and over which the cloth to be sheared passes, means to hold the cushion from rotation, a normally stationary longitudinally-adjustable flexible apron interposed between the cushion and the cloth, and means to support the cloth independently of the cushion, to prevent undue pressure of the cloth upon the apron and cushion.

2. In a cloth-shearing machine, a bed and a cutter, a convex yielding or elastic cushion mounted on the bed and over which the cloth to be sheared passes, means to prevent rotation of the cushion, a flexible apron under tension interposed between the cloth and the cushion, to reduce wear of the latter, and rests for the cloth at each side of the cushion, and between the apron and the cloth, to prevent undue pressure of the cloth upon the cushion and apron.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES E. RICHARDSON.

Witnesses:

C. G. RICHARDSON,
W. W. BROWN.