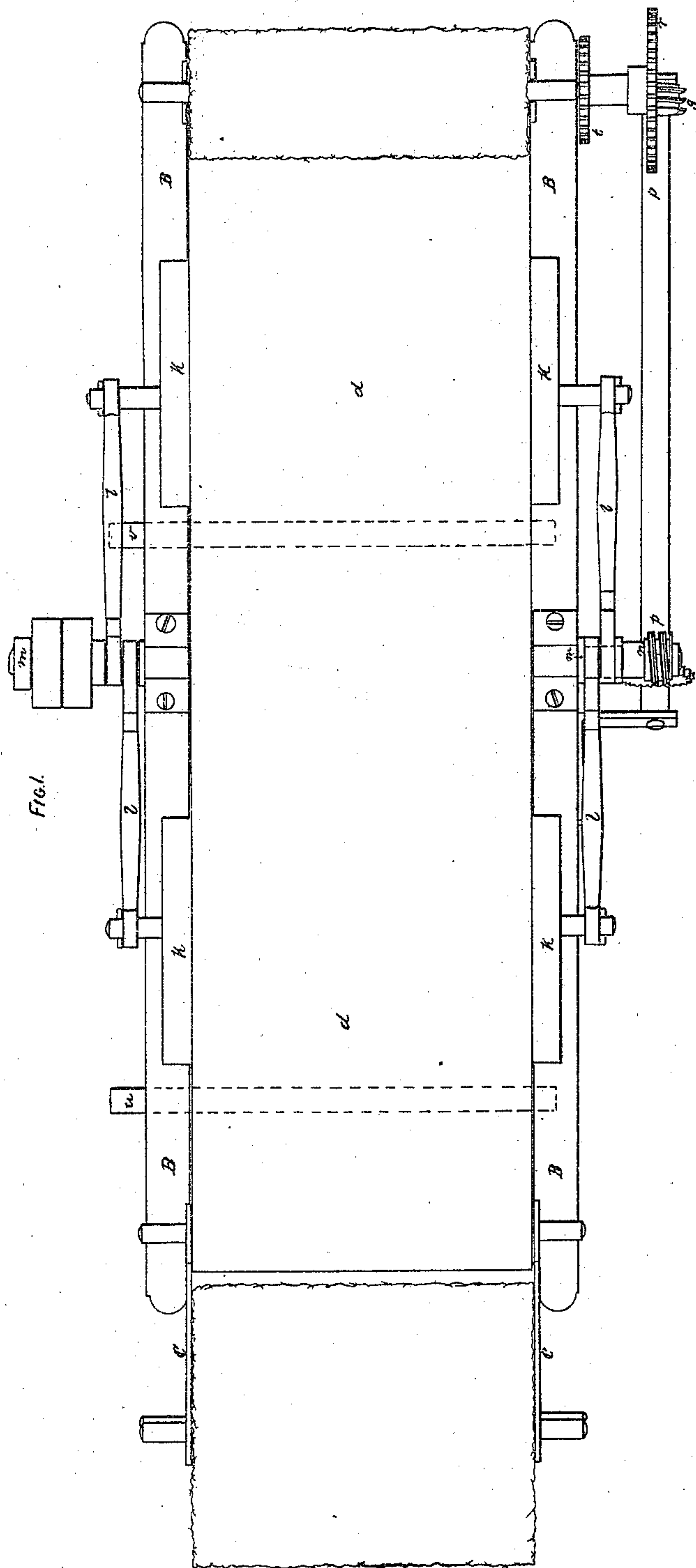


J. Weight.
Felting Machine.

N^o 8636

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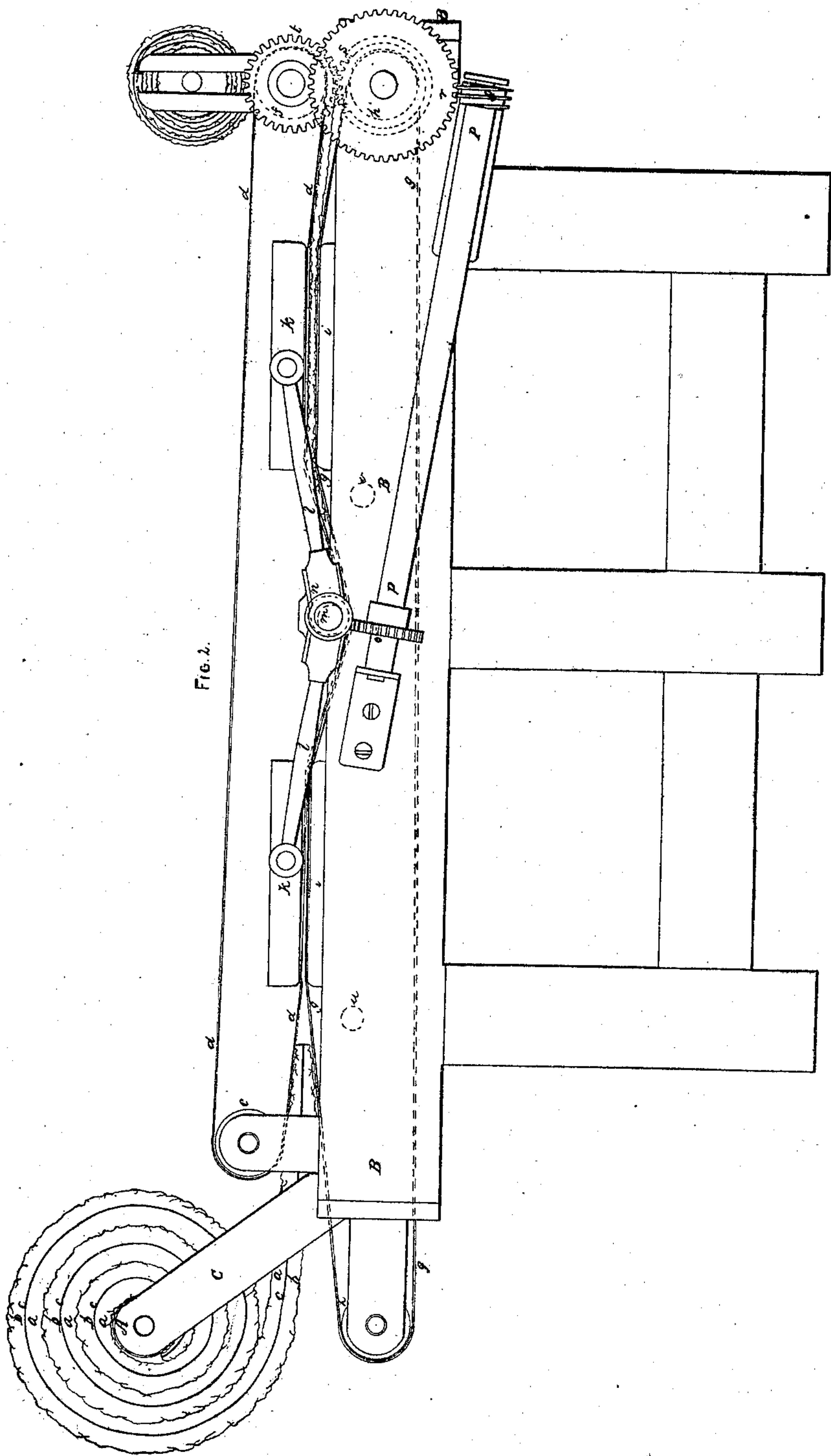


Fig. 2.

UNITED STATES PATENT OFFICE.

JOSEPH WEIGHT, OF LAWRENCE, MASSACHUSETTS, ASSIGNOR TO SAMUEL LAWRENCE,
OF BOSTON, MASSACHUSETTS.

FELTING CLOTH.

Specification of Letters Patent No. 8,636, dated January 6, 1852.

To all whom it may concern:

Be it known that I, JOSEPH WEIGHT, a subject of the Queen of Great Britain, but now residing in Lawrence, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in the Manufacture of Felted Fabrics, and that the following description, taken in connection with the accompanying drawings, hereinafter referred to, forms a full and exact specification of the same, wherein I have set forth the nature and principles of my said invention by which it may be distinguished from others of a similar class, together with such parts as I claim and desire to have secured to me by Letters Patent.

The figures of the accompanying plates of drawings represent the machinery which I use in my improvements in the manufacture of felted fabrics.

Figure 1, Plate 1, is a plan of the same, and Fig. 2, Plate 2, is a side elevation.

My invention consists, in the first place, in the manufacture of felted materials upon woven, netted or other fabrics of cotton or other fibrous material or materials, using for the felting substance wool or silk separately or combined, or wool or silk or both combined with cotton, linen or other fibrous materials, the same being felted on one side or both sides of the netted or woven fabrics, the meshes of which are sufficiently open to permit the intertwining therewith, on passing through, of the fibers of the material used for the felting surfaces. Secondly,—my invention consists in the machine, hereinafter described, for producing the effects above specified, namely, for putting a felting surface on one or both sides of a netted, or woven fabric, said machine consisting of the following essential parts, to wit; two endless bands of cloth passing round two sets of rollers and coming nearly together, as they pass between two sets of platens or rubbing surfaces, the lower set of said platens being stationary, and the other set having a reciprocating rectilinear motion imparted to them, and moving over the lower set with the material to be wrought upon, between them. In addition to these parts there are steam boxes arranged on the sides of the said platens, into which steam is introduced, and the heat from which serves to stir up the fibers of the

felting substance, so that they are more effectually wrought upon between the rubbing or hardening platens than they would otherwise be.

The wool, silk or other material used for the felting surfaces, should be first properly picked, and passed through a carding engine, and taken therefrom in a sliver which is laid upon a belt or table in a sufficient number of layers to form the desired thickness of the bat. The bat should then be properly broken, and the netted or woven fabric on which it is to be felted, of the same width as the bat, is spread thereon, and if a felted surface is to be made on both sides, a second bat similarly prepared is placed upon the netted fabric, and the whole, so prepared, is rolled upon a roller, A A, of suitable size, and is then ready for the machine.

The machine is constructed substantially as follows. B B B is the framework made in any suitably strong manner.

C C are two diagonal projections from the same, or bearing plates in proper holes or bearings in which the journals of the roller, A A, are placed.

The upper and lower felting bats are represented in the drawings at *a a a* &c. *b b b*, &c., and the intermediate woven or netted fabric by the full line at *c c c*.

d d d is the upper endless band of cloth stretched, and moving over and around the rollers, *e e*—*f f*, the journals of which have proper bearings in the framework at opposite ends of the machine.

g g g is a lower and similar endless band of cloth extending, and moving around the rollers, *h h* and *h' h'*, the journals of said rollers, like those of *e e* and *f f*, having proper bearings in the framework. The endless bands, *d d d* and *g g g* pass, as before suggested, between the stationary platens, *i i*, which are fastened to the top of the framework, and the moving or rubbing platens, *k k*, which are arranged, so as to slide forward and back, in the direction of the length of the machine, over said stationary platens. The adjacent surfaces of these platens may be horizontal or quite flat and parallel, which is the best way of arranging them; yet they may be round, or formed with a series of rounds, and work to advantage. The moving platens are operated by the several connecting rods, *l, l, l, l*, on

each side of the machine, and connected to proper eccentrics of the driving shaft *m m*, the whole arrangement being as shown in the drawings partially by dotted lines.

5 There is an endless screw, *n*, on the end of the driving shaft, which works in the teeth of a pinion, *o*, on one end of the long inclined shaft, *p p*, and turns said shaft.

10 An endless screw, *q*, on the other end of the shaft, *p p*, engages with the gear wheel, *r*, on the extension of one journal of the roller, *h' h'*, and turns said roller and cogged pinion, *s*, on the journal of the same roller, *h, h'*, and within the wheel, *r*, which pinion *s*
15 engages with a similar pinion, *t*, on one journal of the roller, *f f*. By this means or connection with the driving shaft, as will readily be understood, these rollers are turned, and the endless bands, *d d d* and *g g g*, are
20 made to move with an uniform velocity. The bats and netted fabric between the same pass between these bands which confine the material, and retain it between the rubbing platens; and the motions of said platens
25 have the effect to harden the felting substance, and interlace, or intertwine the fibers thereof with the meshes of said fabric, so as to make them one fabric; and the endless bands at the same time feed or advance the material between these platens
30 with proper speed for giving it the re-

quired hardness. The steam pipes or boxes before referred to, are arranged at *u u* and *v v*, just in front of the mouth of each pair of platens, for steaming the material before
35 it enters between them, thereby facilitating the process of felting.

Having thus described my improvements in the manufacture of felted fabrics, I shall state my claims as follows. I do not claim
40 the manufacture of felted cloth generally, nor do I claim the use of flat platens in felting cloth. But

What I do claim, and desire to have secured to me by Letters Patent is,—

1. The felting of wool or other fibrous materials upon a woven or netted fabric substantially as hereinabove set forth.

2. And I also claim the use of one or more moving platens having a reciprocating rectilinear motion, in the direction of
50 the length of the cloth to be made, over one or more stationary platens in combination with the endless cloth bands operated substantially as described for carrying forward
55 and regulating the motion of the material while under the action of the said platens, substantially as set forth.

JOSEPH WEIGHT.

Witnesses:—

EZRA LINCOLN,

GEORGE LAURENCE.