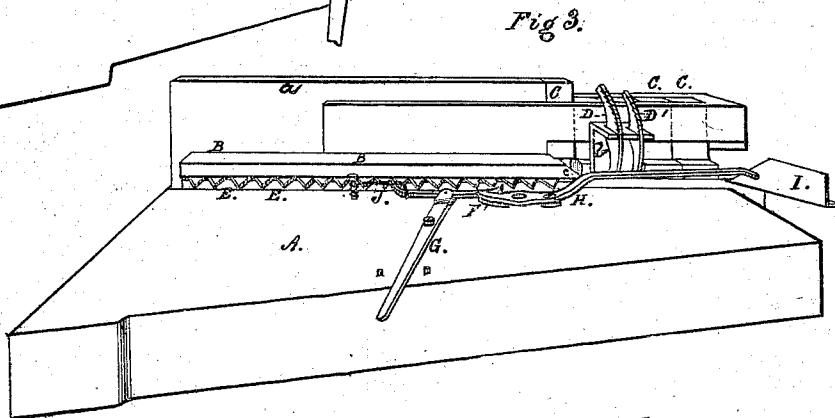
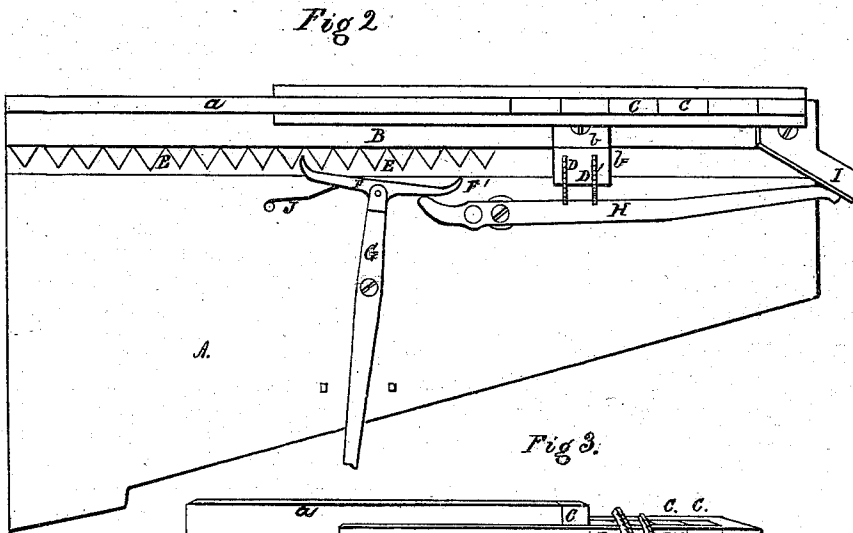
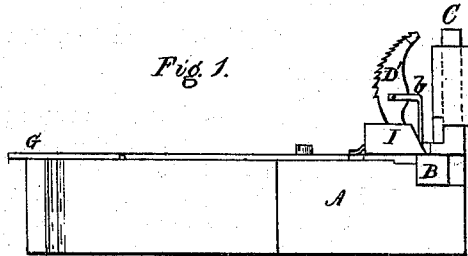


L. M. COLLINS.

Guiding Apparatus for Cloth Shearing Machines.

No. 125,722.

Patented April 16, 1872.



Witnesses.

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UNITED STATES PATENT OFFICE.

LAROE M. COLLINS, OF LEBANON, NEW HAMPSHIRE, ASSIGNOR TO AMASA WOOLSON, OF SPRINGFIELD, VERMONT.

IMPROVEMENT IN GUIDING APPARATUS FOR CLOTH-SHEARING MACHINES.

Specification forming part of Letters Patent No. 125,722, dated April 16, 1872.

Specification describing certain Improvements in Guiding Apparatus for Cloth-Shearing Machines, invented by LAROE M. COLLINS, of Lebanon, in the county of Grafton and State of New Hampshire.

This invention relates to certain improvements in the arrangement and operation of the "feelers" and "movable rests" in cloth-shearing machines which govern and direct the movements of the cloth in its passage through the machine; and it consists in the employment and combination of mechanism for producing an automatic movement of the "rests" in a better and simpler manner than has heretofore been done.

In the accompanying drawing a portion of one side of the machine only is shown, as its operation can be readily understood from these views by any cloth-manufacturer.

Figure 1 is a side elevation of a portion of the frame and mechanism on one side of the machine. Fig. 2 is a top view. Fig. 3 is a perspective view of the same.

General Description.

A represents a portion of the frame of the machine, and *a* the part forming the stationary rest over which the cloth moves. B is a sliding bar moving in a groove in the frame, and provided with a ratchet, E. C C are the movable "rests," arranged in line with the stationary edge *a*, and working in a slot in the frame. They are raised by the end of the sliding bar B, which is made with an incline, *c*, Fig. 3, so that as it moves forward it readily passes under the end of each "rest" and raises them into proper position in relation to the stationary edge *a*. When these "rests" are in their normal position their upper ends are below the level of the stationary edge *a*; but as soon as the sliding bar B moves beneath them they are raised up in line with the edge. The movements of the sliding bar B are effected by the vibrating pawl-lever G, operating with a continuous vibratory motion produced by some proper working part of the machine. The double pawl F F', pivoted to this lever G, is caused to engage with the teeth of the ratchet E and move the sliding bar B either forward or backward as these arms F F' of the pawl are thrown in contact with the ratchet. The feelers D D'

are composed of two curved plates, serrated on their upper edges, and pivoted in the bracket *b* secured to the sliding bar B. They are arranged in pairs independent of each other at each end of the machine, the ones D being the inside and the others, D', the outside "feelers." When the cloth, in the operation of shearing, is running properly over the stationary edge *a*, the edges or "list" of the cloth is in contact and engages with the serrated edge of the inner "feeler," D, at each side of the machine, and the pulling action of the cloth as it is drawn over the "feeler" causes the upper part of the feeler to be depressed and its lower curved end to be thrown outward and held in contact with the lever H pivoted to the frame of the machine, and operating to control the movements of the pawl F F'. The pressure of the end of this "feeler" D upon the lever H holds its short arm against the pawl F' with sufficient force to counteract the effect of the spring J upon the other pawl F and keep both pawls clear of the ratchet E, so that, although the lever G vibrates continuously, it gives no movement to the sliding bar B, because the pawls are not in action. But as soon as the cloth begins to run irregularly, and the "list" or edge on either side runs out of line, it will come in contact with the outer "feeler," D', and engages with its serrated ends. This action of the "list" upon the "feeler" D', as the cloth continues to be drawn through the machine, causes the lower end of this "feeler" to be thrown out against the lever H, and in this manner throws the arm F' of the vibrating pawl into working contact with the ratchet E. The vibrating motion of the lever G then actuates the pawl to cause the sliding bar to move outward and raise the "rests" by sliding beneath them. This movement of the "rests" continues as long as the feeler D' is held against the lever H, and until the bar B has reached the end of its travel, unless the edge of the cloth draws away from the outer "feeler," D', before. As soon as this occurs the feeler D', being free from the action of the cloth, drops back from contact with the lever H and allows the pressure of the short arm of the lever to be removed from the arm F' by the action of the spring J, which acts to throw the arm F of the pawl into action with the ratchet E,

and to draw the other arm, F, out of action. In this position the pawl of the lever G moves the sliding bar B back again and causes the "rests" to drop back again below the level of the stationary edge *a*, and this movement of the bar B continues until the end of the "inner feeler," D, (which, being held in the bracket secured to the sliding bar B, moves back and forth with the bar,) comes in contact with the long arm of the lever H and presses against it sufficiently to make its short arm bear against the pawl, and with force enough to depress the arm F' and raise the arm F clear of the ratchet-teeth.

From this description of the operation of the "feelers," it will be seen that, as long as the cloth is running properly through the machine and keeps in contact with the "inner feelers," D, (one at each side of the machine,) the pawl F F' is held clear of the ratchet-teeth by the spring J and the short arm of the lever H; but when the cloth runs out of line and comes in contact with the serrated teeth of either of the outer feelers, D' D', the sliding bar comes into action and operates the "rests" to change the travel of the cloth. The cam-plate I, secured upon the end of the sliding bar B, is brought against the long arm of the lever H when the bar reaches the end of its backward movement, and acts to throw the short arm of the lever H against the arm F' of the pawl, so as to arrest the further motion of the ratchet E, by raising or withdrawing the arm F from contact with its teeth.

I am aware of the patents granted Amasa Woolson May 28, 1859, and August 16, 1864,

and I disclaim the devices described and claimed in said patent.

Claims.

1. The combination, with the bar B provided with the incline *c*, of the "feelers" D D', constructed and operating substantially as described and specified.

2. The combination, with the "feelers" D D' and bar B with its incline *c* and its ratchet E, of the double-acting vibrating pawl-lever G, constructed and operating substantially as described and specified.

3. The combination, with the feelers D D', of the lever H, pawl F F', and spring J, for actuating the sliding bar B in both directions, substantially as described.

4. The combination, with the lever H and double-acting pawl F F', of the cam-plate J on the bar B, for stopping the movement of the bar B, substantially as described.

5. The combination, in a cloth-shearing machine, of the following parts, namely: the "feelers" D D' and the movable "rests" C C to control the travel of the cloth, the bar B with its incline *c* to operate the movable rests, the double-acting pawl F F' and reciprocating lever G and the vibrating lever H to operate the bar B in both directions, all co-operating together substantially in the manner described and specified.

LAROE M. COLLINS.

Witnesses:

E. J. DURANT,
J. M. PERKINS.