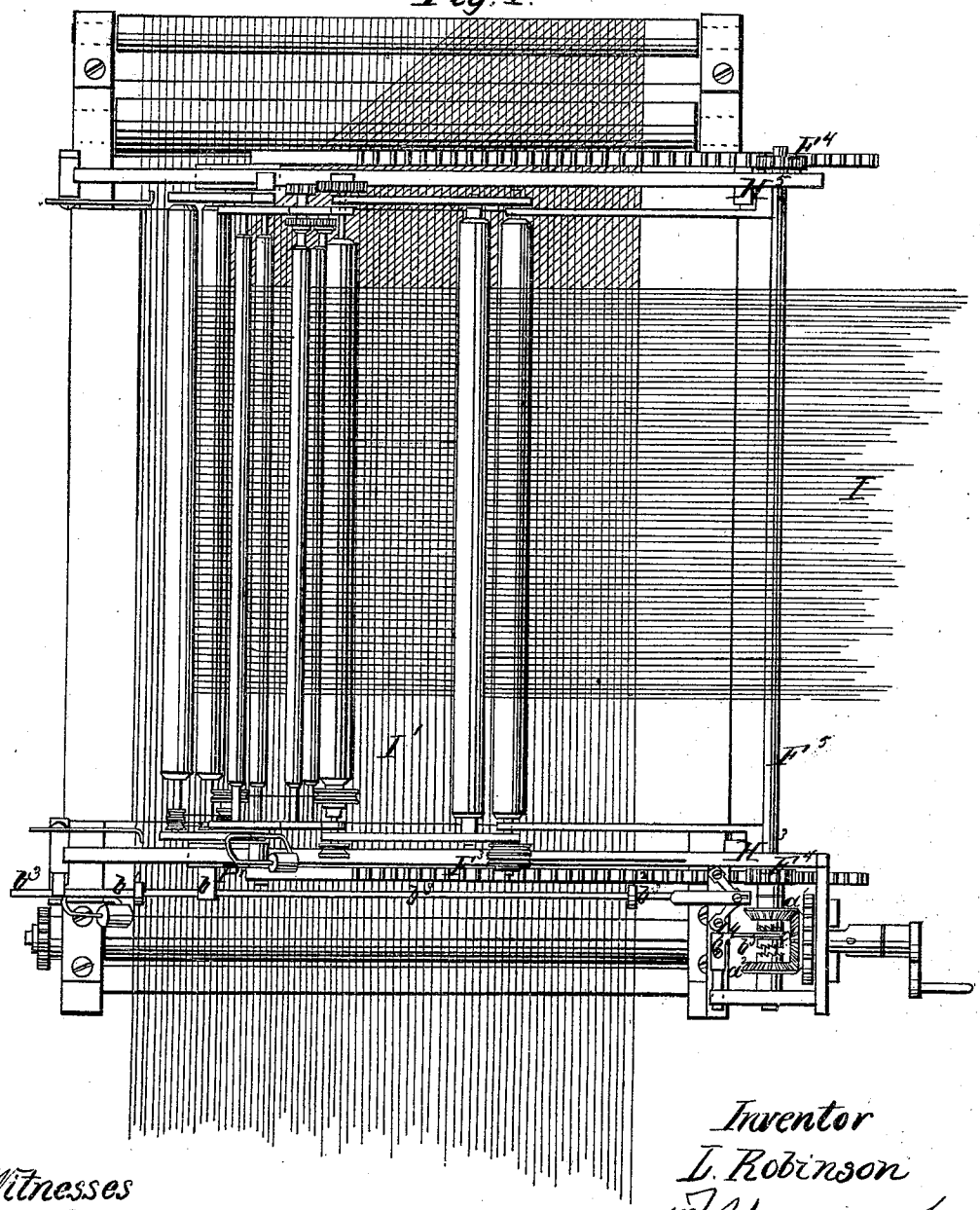
L. Robinson. Sheet 1, 2 Sheets.

Forming Bats.

No. 92,750. Patented Jul. 20, 1869.

Fig. 1.




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L. Robinson. Sheet 2, 2 Sheets.

Forming Bats.

No. 92,750. Patented Jul. 20, 1869.

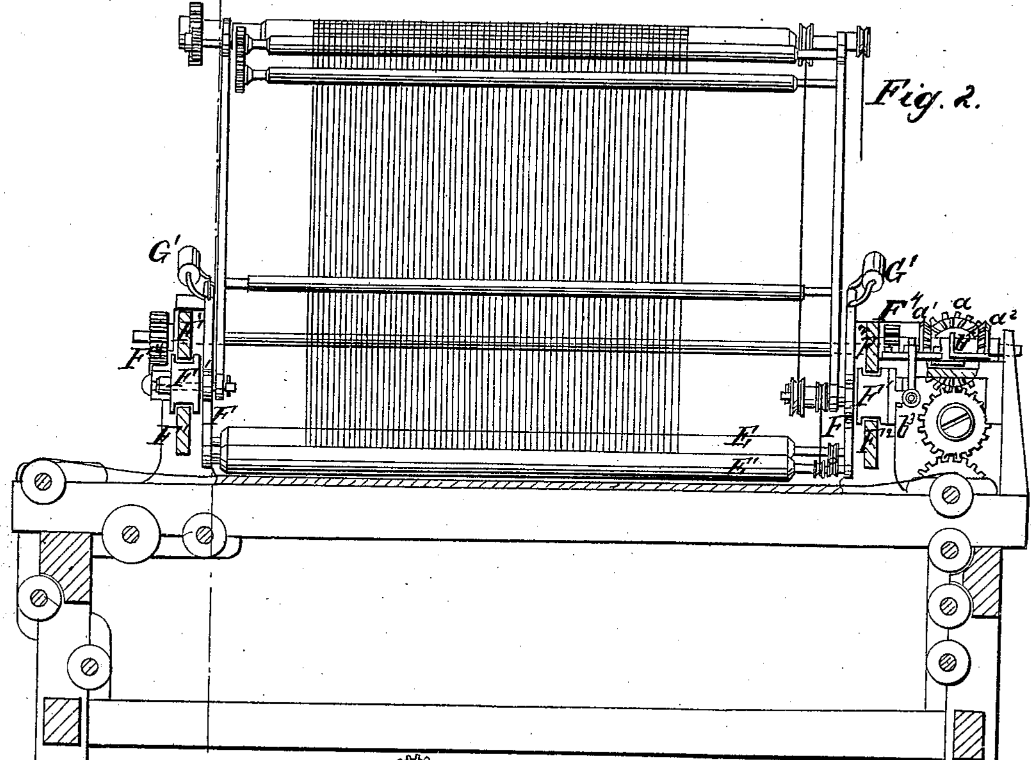


Fig. 2.

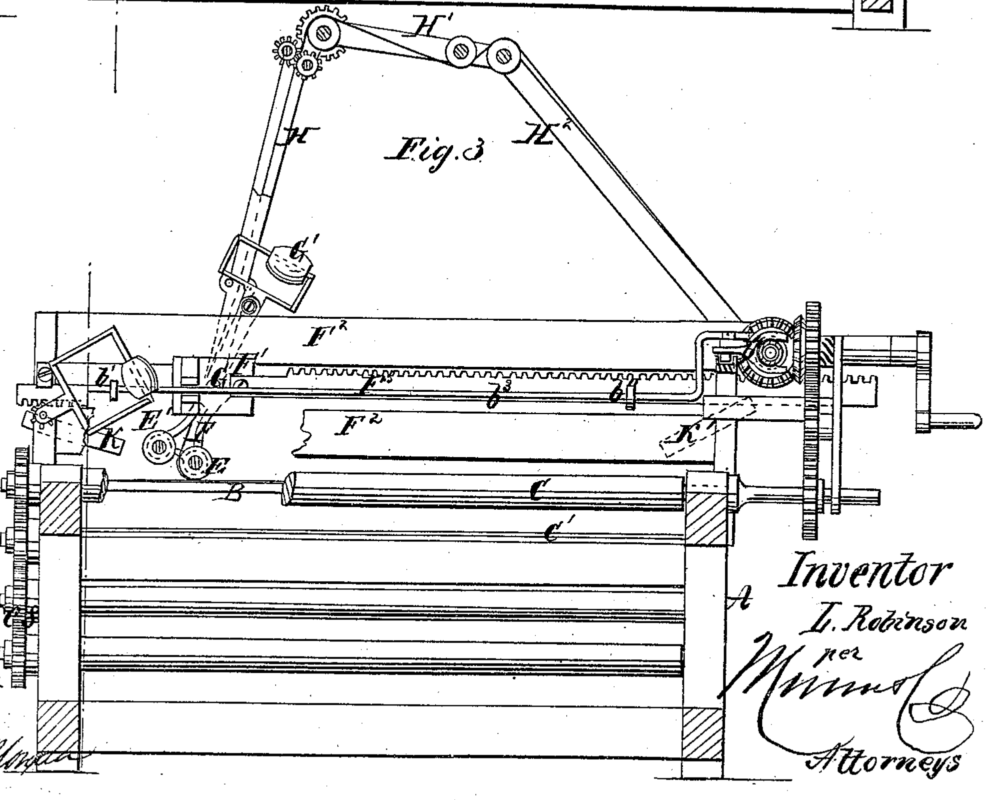


Fig. 3

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# United States Patent Office.

LYMAN ROBINSON, OF MATTEAWAN, NEW YORK, ASSIGNOR TO JOHN FALCONER, OF SAME PLACE.

*Letters Patent No.* 92,750, *dated July* 20, 1869.

## IMPROVEMENT IN MACHINES FOR CROSSING FIBRES IN FORMING BATS FOR FELTING.

The Schedule referred to in these Letters Patent and making part of the same.

*To all whom it may concern:*

Be it known that I, LYMAN ROBINSON, of Matteawan, in the county of Dutchess, and State of New York, have invented a new and improved Machine for Crossing the Fibre of Felts, Bats, Wadding, &c.; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

The object of this invention is to provide a machine for crossing the fibre of felted goods, whereby the same can be accomplished more expeditiously and uniformly than by the means at present in use.

It consists of a machine having a broad platform, over which the fabric is passed back and forth from the carding-machine, whereon suitable rolling or laying-mechanism is placed, to receive a thin webbing from another carding-machine, delivered in a direction perpendicular to that in which the first-named fabric moves, and deliver it under the pressure of the laying-rollers, moving back and forth, and laying it in a zigzag course as the fabric moves in one direction, the vacant angles being filled as the fabric is moved in the other direction.

Figure 1 represents a plan view of my improved machine.

Figure 2 represents a longitudinal elevation, taken on the line $x\,x$ of fig. 3.

Figure 3 represents an end elevation.

Similar letters of reference indicate corresponding parts.

A represents the framing, whereon a broad table, B, is arranged, and suitable drawing or feeding-rollers, C C'.

Through the said rollers the webbing forming the base of the fabric to be made is fed from a carding-machine on to the table B, over which it is drawn by other feeding or drawing-rollers, at the opposite end of the machine.

The said rollers C and C' are operated by suitable gear-wheels, deriving motion from the main shaft D, and those at the other end may be operated by any suitable means.

E and E' represent a pair of laying-rollers, supported and attached in crotched arms, F, pivoted to the slides F', at G, and provided with the sliding weights, G', at their upper ends.

The slides $F^1$ are arranged to move back and forth on the ways $F^2$, and are provided with toothed bars, $F^3$, to which a to-and fro movement is communicated, by pinions $F^4$, gearing into them, which are arranged on the shaft $F^5$, arranged to rotate in either direction, and which is changed from one direction to the other as the said slides arrive at each side, and communicate the necessary change to the system of change-wheels $a$, $a^1$, and $a^2$, by means of a lug, $b$, on one of the slides, striking the collars $b^1$ and $b^2$, on the rod $b^3$, connected to the slide $b^4$, by a toggle-joint, which moves the clutch $b^5$ alternately from wheel $a^1$ to $a^2$.

H represents arms, also pivoted, at their lower ends, to the slides $F^1$, at G, and supporting at their upper ends, by a jointed connection, the arms $H^1$, which are in turn jointed, at their other ends, to the fixed supports $H^2$, secured, at their lower ends, to the frame, at $H^3$.

This system of jointed arms supports a system of guiding and drawing-rollers, which receive the webbing I from a direction perpendicular to the fabric I', on which it is to be laid, and guides and delivers it to the laying-rollers E and E', as clearly represented in fig. 3.

K and K' represent stops, to change the position of the laying-rollers, as the direction of their motion is reversed; as, for instance, when they are moving toward the stop K, the roller E is the one required to lay the webbing I upon the other, and when moving in the other direction, it is necessary that the roller E' should be brought down into the operating-position, as is obvious.

This change is effected by the lower ends of the crotched supports F, striking against the stops K and K' simultaneously with the striking of the lugs $b$, on the collars $b^1$ and $b^2$ of rod $b^1$, and throwing them over into the position opposite to that in which they stand at the time of striking, as will be readily understood by inspection of fig. 3. The sliding weights G' maintain them in their positions after being changed, against the tension of the webbing, and furnish the necessary pressure of the rollers on the same.

By this arrangement, the web I is being continuously laid back and forth on the web I', as it passes over the table B, and will, consequently, be laid in an angular or zigzag course, leaving some of the web I' uncovered, and in order to lay it evenly on all parts of the web I', the latter is passed back and forth over the said table, care being taken, at each time of reversing its movement, to so adjust the relative movements of the two webs, that the parts of the web I' left uncovered at one movement will be covered at the next.

The operation may thus be continued until the fabric is laid up to any thickness, and the fibres will be thoroughly crossed and interlaid, as will be well understood.

Having thus described my invention,

I claim as new, and desire to secure by Letters Patent—

1. The improved method of crossing the fibre of felts, bats, &c., by means of laying-rollers, arranged to work to and fro across the main portion of the fabric, mov-

ing perpendicularly to the movement of the raid rollers, over a table, substantially as and for the purpose described.

2. The combination, with a table, B, of the laying-rollers E and E′, arranged to have a to-and-fro motion over the same, and to change their positions at the end of each movement, substantially as and for the purpose described.

3. The combination, with the laying-rollers, pivoted to the slides $F^1$, of the stops K and K′, substantially as and for the purpose described.

4. The combination, with the slides F, carrying the laying-rollers, of the racks $F^3$ and the system of change-gearing, and the means for changing it, substantially as and for the purpose described.

The above specification of my invention signed by me, this 4th day of September, 1868.

LYMAN ROBINSON.

Witnesses:

E. S. PHILLIPS,

WM. H. LAMENS.