J. Spalding.
Cloth Folding Mach.

No. 2,230. Patented Aug. 28, 1841.

Fig. 1.

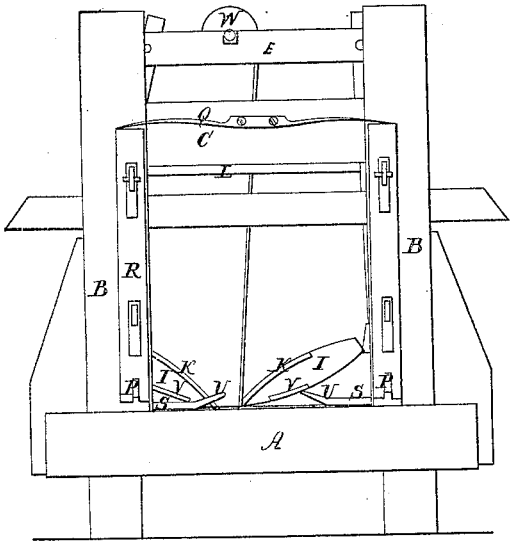


Fig. 2.

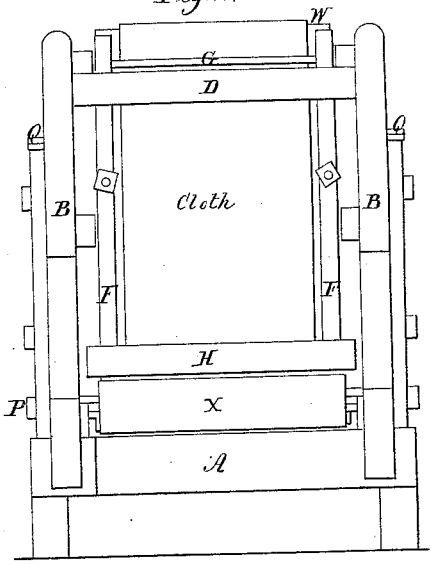


Fig. 5.

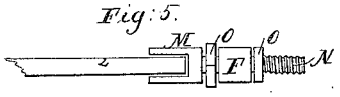


Fig. 6.

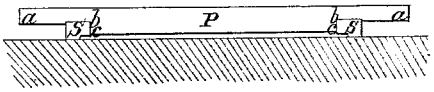


Fig. 3. Sectional View

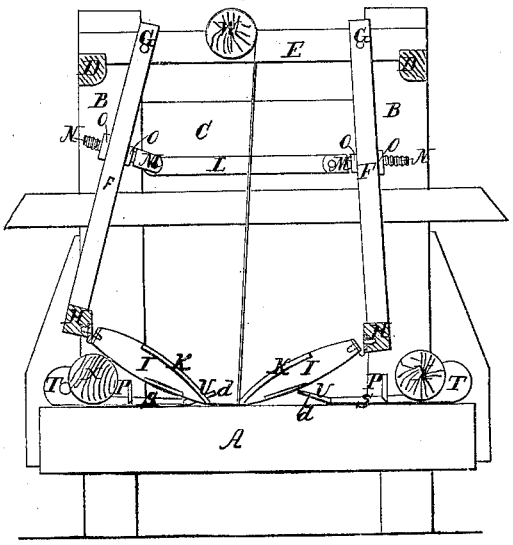


Fig. 7.

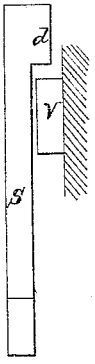
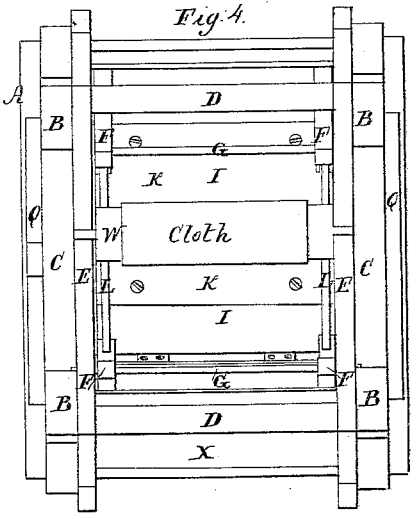


Fig. 4.



UNITED STATES PATENT OFFICE.

JOEL SPALDING, OF MORRISTOWN, VERMONT.

MACHINE FOR FOLDING AND MEASURING CLOTH.

Specification of Letters Patent No. 2,230, dated August 28, 1841.

To all whom it may concern:

Be it known that I, JOEL SPALDING, of Morristown, Lamoille county, and State of Vermont, have invented a new and useful Machine for Folding and Measuring Cloth, and that the following is a full and exact description of the same, reference being had to the accompanying drawings which, taken in connection herewith, form my specification.

In said specification I have set forth the principles of my invention, by which it may be distinguished from others of a similar character, together with such parts or combinations as I claim, and for which I solicit an exclusive property to be secured to me for fourteen years by Letters Patent.

My machinery is represented by Figure 1, which is a side elevation; Fig. 2, which is an end view; Fig. 3, which is a vertical and longitudinal section, and Fig. 4, which is a top view.

The frame, on which the working parts of the machinery are supported, consists of a thick plank or bed piece A, in which four posts B, B, B, B, are erected perpendicularly; the two opposite on each side of the machine being connected together near their tops by the horizontal cross ties C, C, and on each end of the machine by the cross ties D, D. Two beams or bars E, E, resting against the inner faces of the tops of the posts, extend from one of the ties D to the opposite and are bolted down or otherwise properly secured upon the same, and at each end of the machine two vibrating bars F, F, (hung at their tops upon a cross rod or shaft G extending from one of the bars E to the opposite), depend and are tenoned into a horizontal cross bar H. To the inner side of each of the cross bars H, a folding board I is hinged, and from thence extends, with a downward inclination, toward the center of the machine, and in its cross section it is pointed or has the shape denoted in Fig. 3. The upper face of each of said boards is covered with a curved plate of iron K, the said plate extending from the angular edge of the board, near the center of the machine, to some distance back therefrom as seen in Figs. 3, 4. The hinged boards I, at their pointed or lowest ends, rest upon the upper surface of the bed piece A.

The opposite bars F, on each side are connected together, at some distance below their points of suspension, by a bar L, Figs. 3, 4, extending from one to the other and connected to each by a vertical hinge joint M, Fig. 3. A top view of this hinge joint is represented in Fig. 5. It is connected to each of the depending bars F by a long screw N, which extends from the rear of the joint through the bar F, or a cylindrical hole formed through it, and is secured thereto, by two screw nuts O, O, one of which is placed in front of the depending bar; and the other in rear as seen in the drawings. The screws and nuts serve to regulate the distance of the horizontal bars H from each other.

A metallic bar P extends across the machine from each of the posts to the opposite, the position of each bar being represented in section in Fig. 3. The lower edge of the bar, which is formed somewhat like a knife edge, rests upon the upper surface of the bed piece A. The two ends of each bar pass through perpendicular slots formed through the parts of the frame, and are pressed or forced down by a spring Q, Figs. 1, 2, 4, acting upon the tops of perpendicular standards R, R, extending upward from the ends of the bars P in the side of each post as seen in Figs. 1, 4. A side elevation of one of the bars P is shown by Fig. 6, in which it will be perceived that a portion of each end, that passes through the posts B, B, is cut away on the lower side as seen at *a*, *b*, *c*, so as to permit a lever S, Figs. 1, 3, 6, resting on the upper surface of the bed piece A, to pass under the portion *a b* of the end of the bar P. There are four of these levers, one being applied to each post, with its fulcrum T, Fig. 3, at one end. The other end of each lever is bent up, as seen in side elevation at U, Fig. 3, and is otherwise formed with a portion *d* projecting on one side (or that which is next the folding board) as seen in Fig. 7, the said projecting portion extending back nearly to the end of the folding board. At each end of each folding board, a small iron inclined plane, stud or lifter V, Figs. 1, 7, is attached, the operation of which will be hereinafter explained.

The depending bars and folding boards are to have a vibratory or reciprocating rectilinear motion given them in a longitudinal direction, by any suitable machinery or in any convenient manner and this being understood, the operation of the machinery may be thus explained.

The cloth to be folded is wound upon a roller or drum W, extending across the top of the machine—or may be introduced to the machine in any other way, which will answer the purpose. From thence it passes downward, between the two edges of the folding boards, in contiguity, and is drawn under one of the same a sufficient distance, so that its end may be passed under the holding bar P and confined down upon the board A. The machine is now prepared to operate. The folding board under which the cloth is passed, as well as the other, is now advanced forward upon the cloth, so as to unwind the same from the drum W and lay or spread it over the top surface of the board A. As the folding board advances the lifters V pass under the projections *d*, *d*, of the levers S, which are attached to that end of the machine toward which the folding boards are moving, and raise upward said ends of said levers and consequently the cross holding or retaining bar P under which the angular edge of the folding board passes a short distance. Now the moment the angular edge of the folding board passes under the edge of the retaining bar, the lifters V pass by the levers S, S, and permit them and the retaining bar to be forced down by the spring Q. As the retaining bar is depressed it falls upon the cloth on or near the edge of the folding board, which latter, immediately receding, leaves the cloth folded or lapped with the edge of the fold confined to the board A under the holder P. As the first mentioned folding board recedes, the opposite advances in the same direction, and presses or spreads more of the cloth down upon the cloth first spread, which is folded and confined under the opposite retaining bar in the manner as described with regard to the first, so that as the spreading and folding machinery advances and recedes, the cloth is regularly spread and folded on the board A or on itself until the whole piece is drawn from the drum on which it is wound.

In order that the folding boards may not obstruct the operation of the retaining bars, as each of the former recedes after having spread the cloth, the underside of it comes in contact with the surface of a horizontal cylinder or roller X Fig. 3, which causes the folding board to rise upward, (its hinges permitting the same), so as to entirely clear the retaining bar. As the machinery may be so constructed that the cloth may be laid in regular folds of one yard in length, the number of these folds will indicate the number of yards in the piece, and if a small counter is applied to the machine in any convenient manner, the precise number of folds may at once be read off by the attendant, and thus the machine serves to measure as well as to fold the cloth.

Having thus described my invention I shall claim—

Spreading and folding the cloth upon the surface of the table or bed piece in regular layers of equal lengths as herein explained, by means of the above described arrangement of folding boards (having a reciprocating motion), in combination with the retaining bars, operated by said folding boards, through the intervention of the lifters and levers, the whole being constructed substantially in manner as above set forth.

In testimony that the foregoing is a true description of my said invention and improvement I have hereto set my signature this sixth day of July in the year eighteen hundred and forty one.

JOEL SPALDING.

Witnesses:
AARON F. SAWYER,
A. W. SAWYER.