(No Model.)

J. D. ELLIOT.

CLOTH FOLDING MACHINE.

No. 342,190. Patented May 18, 1886.

Fig. 1.

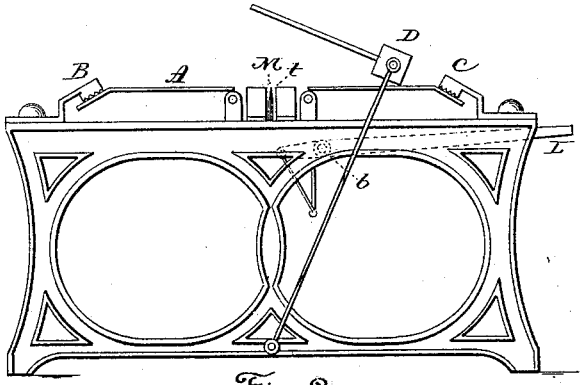


Fig. 2.

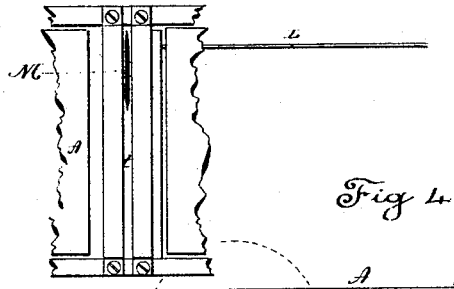


Fig. 3.

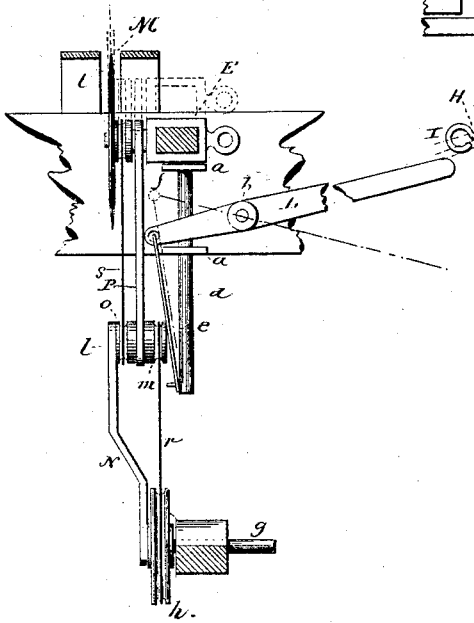
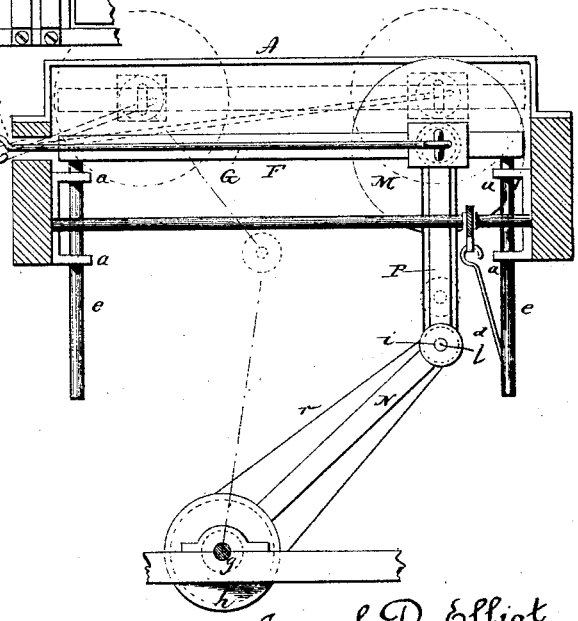


Fig. 4.



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CLOTH-FOLDING MACHINE.

SPECIFICATION forming part of Letters Patent No. 342,190, dated May 18, 1886.

Application filed November 16, 1885. Serial No. 182,950. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH D. ELLIOT, of Newton Centre, in the county of Middlesex and State of Massachusetts, have invented a new Improvement in Cloth-Folding Machines; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a side view of so much of the folding-machine as is necessary for the illustration of my invention; Fig. 2, a top view of the central portion of the table, showing the slot and cutter; Fig. 3, a partial longitudinal section showing a side view of the cutter and its operative mechanism; Fig. 4, a transverse section showing a view of the same mechanism in a direction at right angles to that in Fig. 3.

This invention relates to an improvement in that class of machines for folding cloth in which the folds are successively laid upon a table, each fold being caught by a jaw at the respective ends of the table, the cloth being carried by the folder first to one jaw at one end of the table, then across the table, under the opposite jaw, then returned, and, so continuing, laying successive folds of equal length.

In the manufacture of salt-bags and bags for many other uses the cloth is cut twice the length of the bag and doubled at the bottom, the two edges being stitched together to complete the bag.

The object of my invention is to combine with a cloth-folding machine such as I have before mentioned a device by which the material from which the bags are to be made, being laid in folds of twice the length of a single bag, may be mechanically cut transversely of the folds and in lengths required for the bags; and the invention consists in combining with a cloth-folding machine a revolving cutter adapted to be moved transversely across the table after the successive folds of cloth have been laid, and whereby the several folds will be transversely cut, and as more fully hereinafter described.

The folding-machine in connection with which I show my improvement is an invention of my own, known as the "Elliot Cloth-Folder," and for which Letters Patent have been granted to me, Nos. 32,761, 64,208, and 195,493; but it is applicable to other cloth-folding machines.

A represents the folding-table, suitably supported; B, the jaw at one end, and C the jaw at the opposite end, the table and jaws being adapted to engage each successive fold as it is presented.

D is the folder through which the cloth runs, and to which reciprocating movement is imparted to take it from one side. At each extreme of the table the cloth is forced between the jaw and table, and there caught. The folder, returning to the opposite side, will deliver the doubled cloth to the opposite jaw and return, and, so continuing, will lay successive folds upon the table.

A detailed description of the folding mechanism is unnecessary, it being substantially that shown in numerous patents heretofore granted to me on improvements in cloth-folding machines.

E represents the carriage beneath the table, arranged upon a transverse bar, F, parallel with the table, and so as to be moved transversely across the machine beneath the table, and it may be so moved by means of a rod, G, attached to the slide, and extending through an opening in the side of the frame, as at H, and provided with a handle, I, upon the outside, by which the operator may move the slide transversely across the machine and return. The bar F is supported in vertical guides *a a*, and so that it may be raised up and down, as occasion may require; and to so raise and lower the bar F a lever, L, is provided, hung upon a fulcrum, *b*, one arm extending toward one end of the machine in a convenient position for the operator to apply his hand thereto, the other arm connected by a rod, *d*, to the bar F. As here represented, parallel rods *e* extend from the bar F down through the guides *a a*, and the rod *d* is connected to one of the rods *e*, as seen in Figs. 3 and 4, and so that as the operator applies his hand to the lever L and presses thereon he may raise the bar F, and with it the slide E,

as from the position seen in Figs. 3 and 4 to the position seen in broken lines, same figures.

On the slide E is a circular cutter, M, arranged in suitable bearings on the slide, and provided with a pulley, *f*, through which rapid rotation may be imparted to the cutter. At some convenient point below the slide a shaft, *g*, is arranged, to which revolution is imparted by the application of power thereto in the usual manner of imparting revolution to shafts, and on this shaft is a pulley, *h*.

Between the slide E and the shaft *g* are two arms, N and P. One end of the arm N is hung to the shaft *g*, and one end of the arm P is hung to the shaft of the cutter. The other ends of the two arms N P are hinged together, as at *i*. At the point *i*, and concentric therewith, a shaft, *l*, is arranged, carrying a pulley, *m*, corresponding to the pulley *h* on the shaft *g*, and also carrying a second pulley, *o*, corresponding to the pulley *f* on the cutter-shaft. An endless band, *r*, runs from the pulley *h* over the pulley *m*, and a second endless band, *s*, runs from the pulley *o* around the pulley *f* on the cutter-shaft, and so that revolution imparted to the shaft *g* is communicated to the revolving cutter M. Directly over the cutter, and in a plane parallel with the bar F, a slot, *t*, is made through the table. In its normal condition the cutter stands at one side of the machine and below the table. By raising the bar F, as before described, the cutter is brought up through the slot in the table, as indicated in broken lines, Figs. 3 and 4, and when so raised, if the slide carrying the cutter be drawn toward the opposite side of the table, the cutter will pass across the table in its up position, as indicated in broken lines, Fig. 4. The hinged arms N P permit this movement of the cutter without interference with its revolution, this connection of the arms N and P being a common mechanical device for imparting rotation to an axis movable in a plane at right angles thereto.

The folding apparatus is arranged to lay folds in length corresponding to two bags, and the slot in the table divides that length at the point desired, so that a double fold each side the slit will form a single bag.

After the cloth has been laid in successive folds upon the table to the extent desired the folding ceases. Then the operator raises the revolving cutter through the slot and draws it across the table, cutting the several folds transversely. Then the cutter may be dropped and returned beneath the table, ready for the next operation. The folds so cut are removed from the table, and each double fold lies in condition for stitching the sides to complete the bag. This operation of cutting the folds on the machine not only insures a perfect uniformity of cut, but enables it to be done by power, and without additional handling, thus making a considerable saving of expense in the manufacture of this class of bags.

I do not wish to be understood as limiting my invention to the particular construction shown and described, whereby the cutter is made to travel across the table, as numerous mechanical equivalents may be substituted for the devices I have shown; but

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A table and a folder adapted to lay successive folds upon the said table, with a device at each end of the table adapted to engage the folds as they are successively laid, the said table constructed with a slot transversely across it, in combination with a revolving cutter arranged in the plane of said slot and below the table, said cutter adapted to be raised through said slot, and then moved transversely across the table through said slot, substantially as described.

2. The combination of the table constructed with a transverse slot, *t*, vertical guides beneath said table, a transverse guide arranged on said vertical guides and parallel with said slot, a slide on said transverse guide, and a revolving cutter arranged upon said slide, the plane of the cutter being in the plane of said slot, with mechanism, substantially such as described, to impart rotation to said cutter, substantially as and for the purpose described.

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