

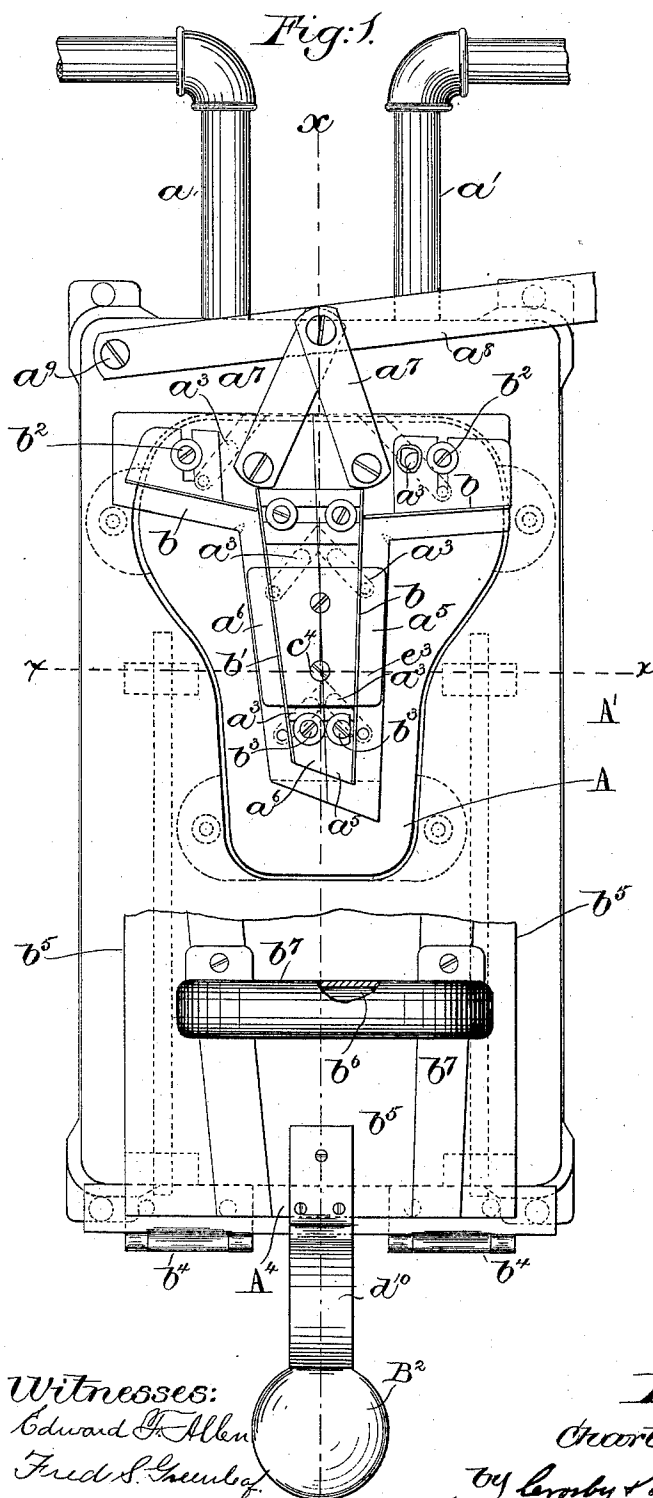
(No Model.)

3 Sheets—Sheet 1.

C. W. SHIPPEE.
FOLDING MACHINE.

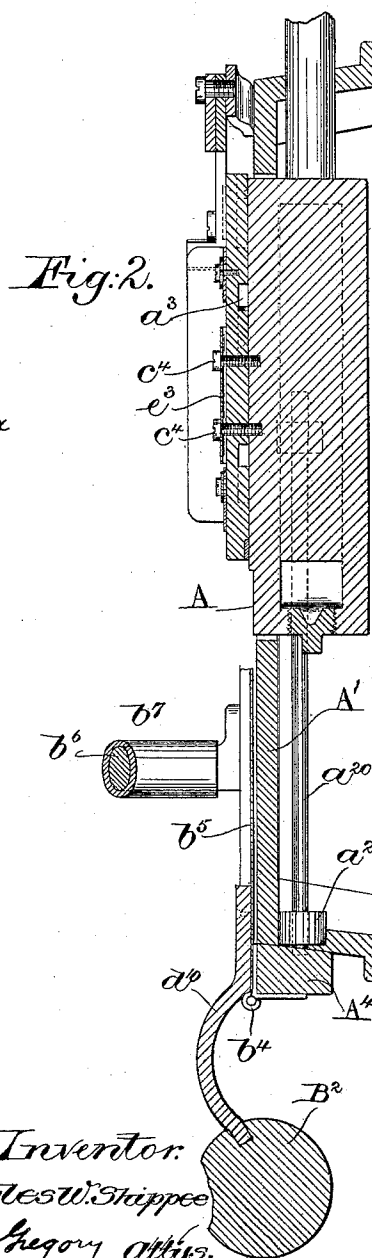
No. 463,170.

Patented Nov. 17, 1891.



Witnesses:
Edward F. Allen
Fred S. Greenberg

Inventor:
Charles W. Shippee
by Lemby Gregory Atty.



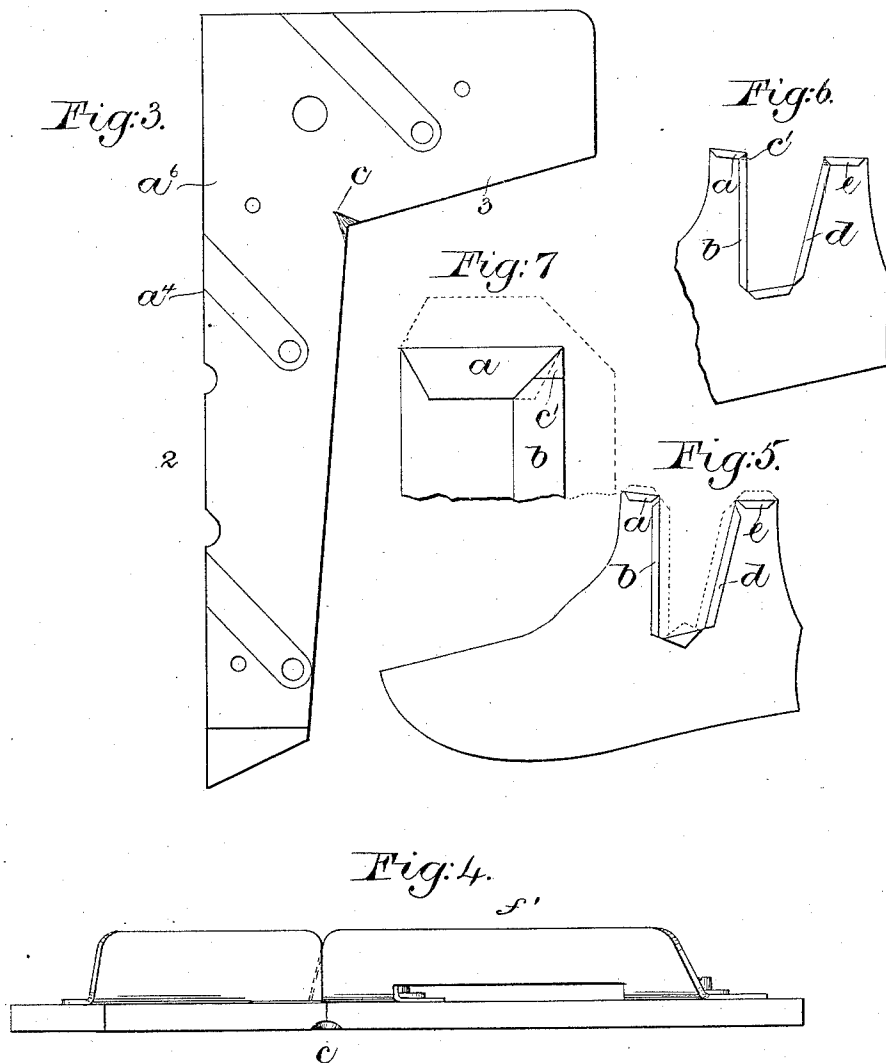
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(No Model.)

3 Sheets—Sheet 3.

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Fig. 8.

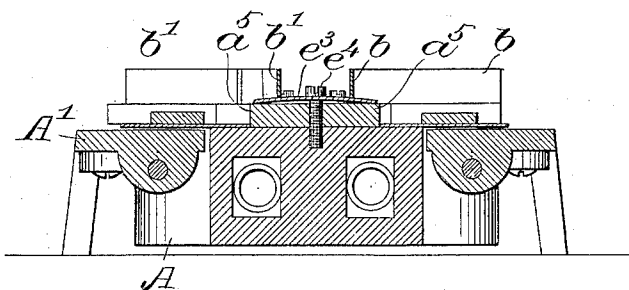
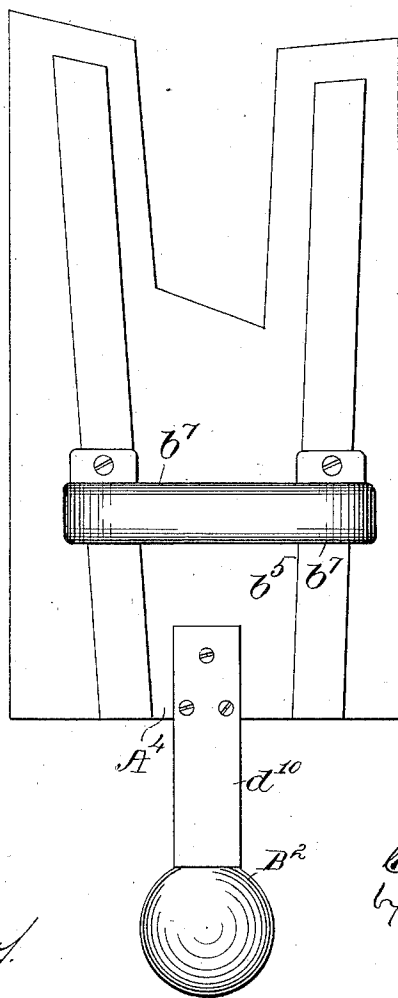


Fig. 9.



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UNITED STATES PATENT OFFICE.

CHARLES W. SHIPPEE, OF MILFORD, MASSACHUSETTS.

FOLDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 463,170, dated November 17, 1891.

Application filed February 20, 1891. Serial No. 382,250. (No model.)

To all whom it may concern:

Be it known that I, CHARLES W. SHIPPEE, of Milford, county of Worcester, State of Massachusetts, have invented an Improvement in Folding Apparatus, of which the following description, in connection with the accompanying drawings, is a specification, like letters and figures on the drawings representing like parts.

10 This invention has for its object to improve and simplify that class of machines for folding and preparing uppers and lining for the reception of goring, the present invention being intended as an improvement upon the machine shown and described in United States Patent No. 386,500, granted to me July 24, 1888.

One part of my invention therefore consists in the combination, with a table and a heater secured thereto and provided with an inlet and outlet for a heating medium, of folding and pressing plates provided on their under sides where corners or sharp bends are to appear in the folded edges, with channels or recesses by which to form a plait or plaits in the material and with a longitudinally-movable carriage and clamping-plate to operate, substantially as will be described.

Other features of my invention will be pointed out in the claims at the end of this specification.

Figure 1 is a top or plan view of a machine embodying my invention, the clamping-plate being broken off to show the heater and bed-plate below it; Fig. 2, a longitudinal section of the machine shown in Fig. 1 on line *x x*; Fig. 3, an under side view, on an enlarged scale, of one of the clamping-plates; Fig. 4, an edge view, on an enlarged scale, of one of the clamping-plates shown in Figs. 1 and 3; Fig. 5, a detail of one-half of a lining of a Congress shoe folded with the machine shown in the patent referred to; Fig. 6, a detail of a lining folded with the machine shown in Fig. 1; and Fig. 7, a detail, on an enlarged scale, of a portion of the lining shown in Fig. 6; and Fig. 8 is a section in the line *x x*, Fig. 1. Fig. 9 is a top or plan view of the clamping-plate.

Referring to Figs. 1 and 2, A shows a heater secured to a metal frame or plate A' and

having a steam-inlet pipe *a* and a steam-outlet pipe *a'*, the said frame having suitable feet *a²*, by which the machine may be screwed or otherwise secured to a table. (Not shown.) These parts are and may be substantially such as shown and described in the patent referred to. The heater A is provided at its upper face with lugs *a³*, (shown chiefly by dotted lines, Fig. 1,) inclined with relation to a central line through the heater from end to end, the said lugs entering grooves or channels *a⁴* at the under side of the pressing or folding plates *a⁵ a⁶*, there being, as herein shown, three such parallel grooves or channels for each folding-plate.

The folding-plates *a⁵ a⁶* (see Fig. 3) are each composed of, a long arm 2 and a short arm 3 extended substantially at right angles to the arm 2, and the said plates are connected by links *a⁷* to a lever *a⁸*, pivoted at *a⁹* to the bed-plate A', as in the patent referred to.

The folding-plates *a⁵ a⁶*, when closed together, are of substantially the shape of the opening to the left in the folded lining. These folding-plates *a⁵ a⁶* are provided with gages *b b'*, connected thereto by screws *b² b³*.

The bed-plate A' is provided with a movable carriage A⁴, which is herein shown as secured to rods *a²⁰*, extended through openings in lugs *a²¹*, depending from the under side of the bed-plate. The carriage A⁴ has secured to it by hinges *b⁴* a clamping-plate *b⁵*, provided, preferably, with a suitable handle *b⁶*, having a non-conducting cover *b⁷*, the said clamping-plate having an opening to conform with the shape of the edges of the folding-plates.

In the patent referred to the cloth entering into the formation of the top folds or lips marked *a* and *e*, constituting the top folds of the lining, (see Fig. 5,) is disconnected from the lips or folds marked *b* and *d*, and as a result thereof the lining is weakened at the point of junction of the said folds and an objectionable ragged edge is left.

One of the features of my present invention is to so construct the folding-plates *a⁵ a⁶* that when the lining is folded the top folds *a* and *e* will be integral with and connected to the side folds *b* and *d*, thus greatly strengthening the lining at such parts and leaving a

smooth crimped or folded edge, as shown in Figs. 6 and 7, all about the opening. I accomplish this feature of my invention by providing the folding-plates $a^5 a^6$ with crimping or plaiting notches or grooves, as at c , at their under side at the junction of the long portion 2 and the short portion 3 of the said folding-plates. (See Fig. 3.) The notches or grooves c , preferably made of the shape shown in Figs. 3 and 4, (they being wide at their mouth and extending back to substantially a point,) afford room for the surplus cloth in the lining and enable it to be notched or gathered to form a crimp or plait to constitute an additional fold c' , (shown best in Fig. 7,) just at the corner where the side lips or folds meet.

The pressure upon the folding-plates to effect the folding of the edges of the lining may be obtained, as represented by a sheet-metal spring e^3 , secured to the heater, as by screws c^4 , substantially as in the patent referred to; or the said pressure may be obtained in any other desired or equivalent manner, and when the edges of the lining have been folded the carriage A^4 and the clamping-plate thereon may be drawn back longitudinally from under and between the folds, and when cleared from the folds the said plate is automatically raised ready for the next lining to be placed in position by a counter-balance shown as a weight B^2 on a curved arm d^{10} , secured to the clamping-plate. After the said clamping-plate is withdrawn from the folds the latter may be more firmly pressed or ironed by pressure exerted upon the folding-plates.

The machine herein described may be also

used for folding the tops and facings of bal-morals and button-shoes.

I claim—

1. In a folding apparatus, the combination, with a heater and folding-plates, each provided with a crimping or plaiting notch or groove c to form a crimp, plait, or fold c' , of a table and a clamping-plate and a longitudinally-movable carriage to which the said clamping-plate is attached, to operate substantially as described.

2. In a folding apparatus, the combination, with a table A , a heater, and folding-plates, of a clamping-plate and a longitudinally-movable carriage supported by the table and to which the clamping-plate is secured.

3. In a folding apparatus, the combination, with a table A , a heater, and folding-plates provided with notches or grooves c , of a clamping-plate and a longitudinally-movable carriage supported by the table and to which the clamping-plate is secured.

4. In a folding apparatus, the combination, with a table A , a heater, and folding-plates, of a clamping-plate and a movable carriage supported by the table and to which the clamping-plate is secured, and a counter-balance secured to the clamping-plate, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES W. SHIPPEE.

Witnesses:

GEO. W. GREGORY,
EDWARD F. ALLEN.