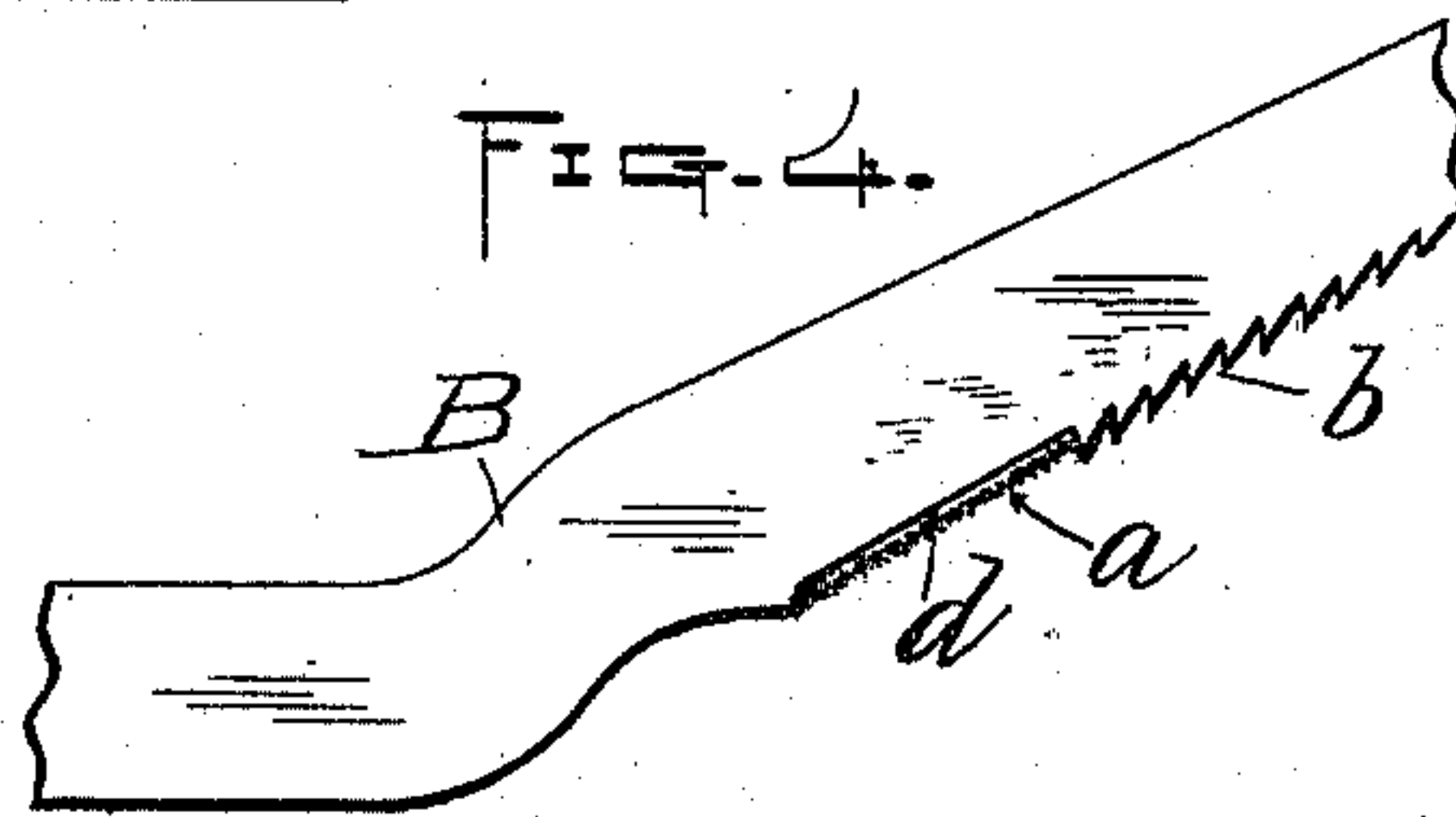
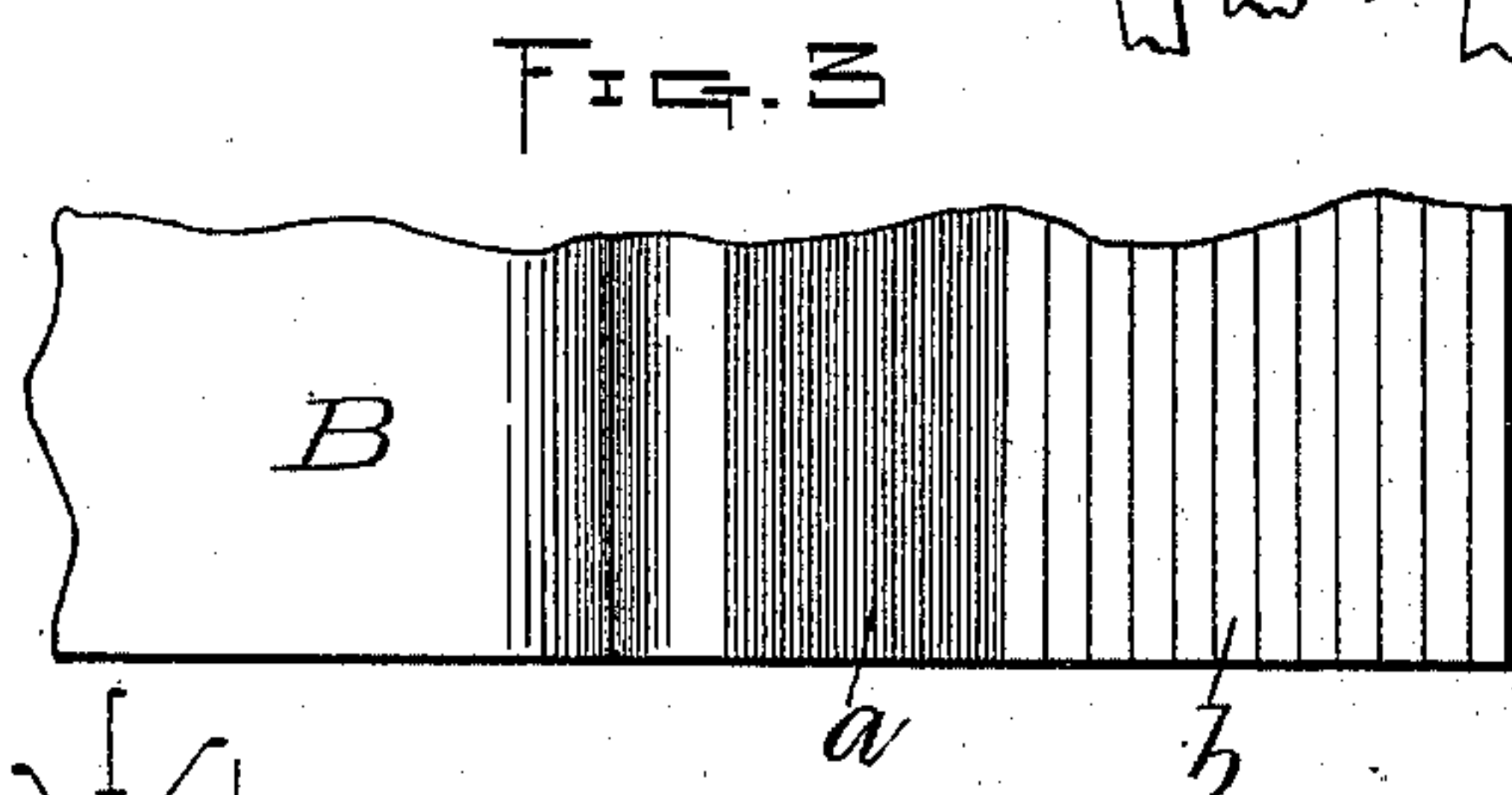
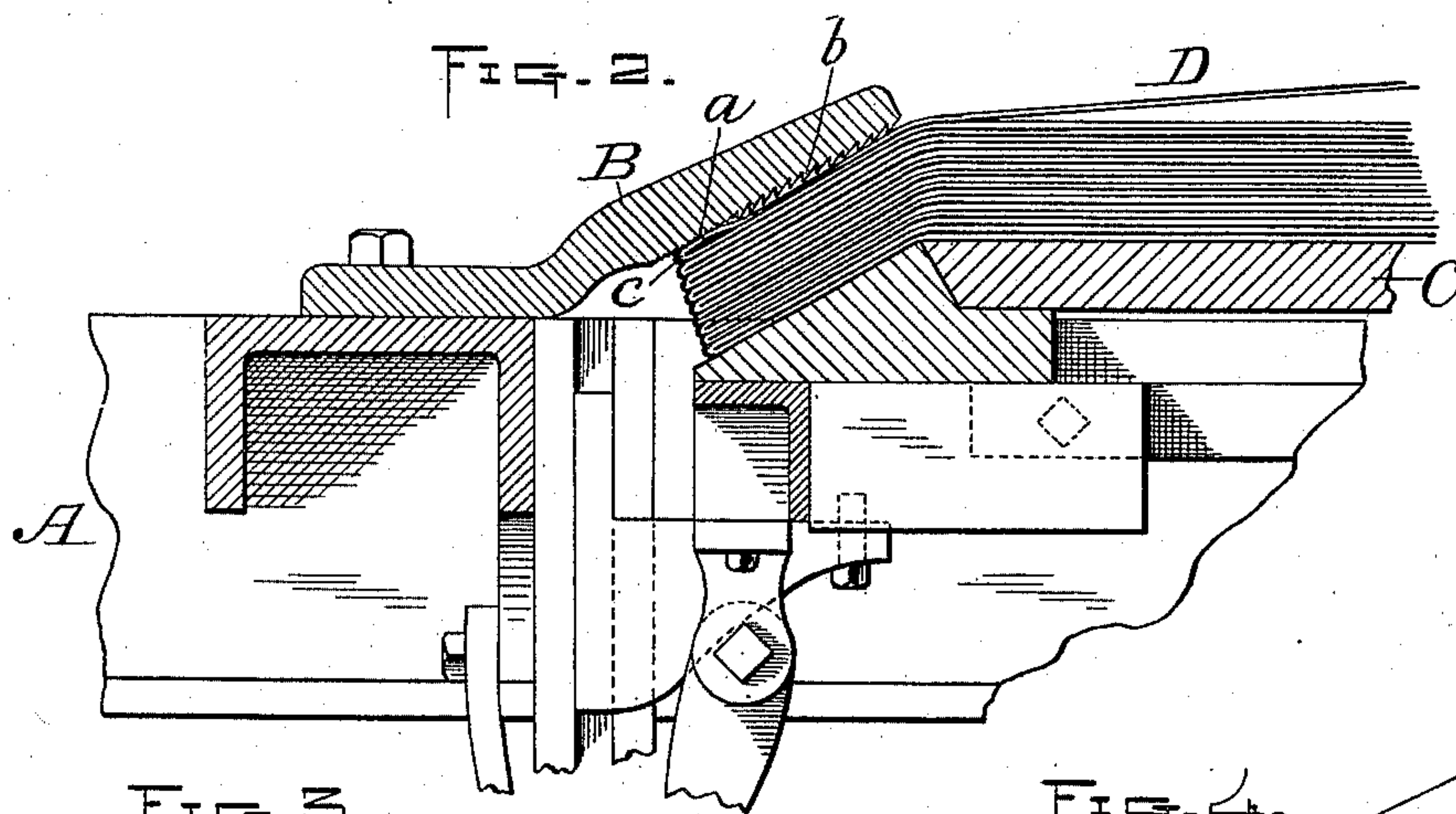
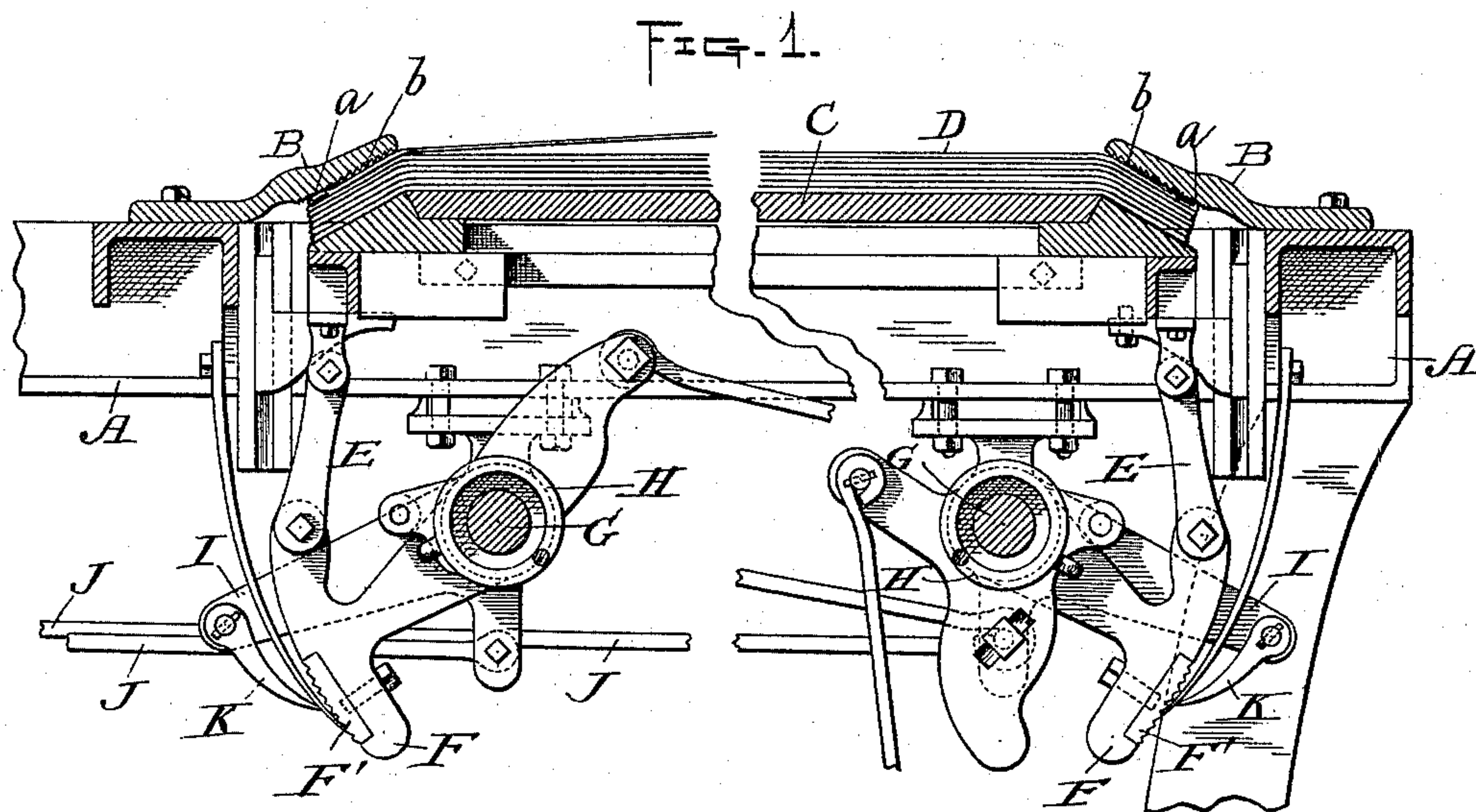


(No Model.)

E. HALL.  
CLOTH FOLDING MACHINE.

No. 540,250.

Patented June 4, 1895.



Witnesses,  
Walter B. Nourse,  
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INVENTOR,  
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BY A. A. Barker. ATT'Y.



# UNITED STATES PATENT OFFICE.

EDWARD HALL, OF WORCESTER, MASSACHUSETTS.

## CLOTH-FOLDING MACHINE.

SPECIFICATION forming part of Letters Patent No. 540,250, dated June 4, 1895.

Application filed October 11, 1894. Serial No. 525,540. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD HALL, of the city and county of Worcester and State of Massachusetts, have invented certain new and  
5 useful Improvements in Cloth-Folding Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 represents a vertical longitudinal section through the upper part of a cloth-folding machine with my improvement applied thereto. Fig. 2 is an enlarged view of a part  
15 of said vertical section shown in Fig. 1. Fig. 3 is a bottom view of part of one of the cloth-holding jaws to which my invention more particularly relates; and Fig. 4 shows a modification in the construction of said jaws, which  
20 will be hereinafter described.

My invention relates to the construction of the fixed holding-jaws or blades of a cloth-folding machine against the under-sides of which the folded edges of the cloth are pressed  
25 by the upward tilting movements of the folding table in the operation of folding said cloth thereon; and consists in providing the under sides of said jaws or blades, back of the usual longitudinal teeth at their front edges, with  
30 fine roughened surfaces extending a short distance back from said toothed surfaces and across the full length of the jaws or blades, as and for the purpose hereinafter more fully set forth.

35 To enable those skilled in the art to which my invention appertains to better understand the nature and purpose thereof, I will now proceed to describe it more in detail.

Prior to my invention much objection has  
40 been made to the unevenness in the lengths of folds of folded cloth, more especially silk, and similar hard finished goods which have a smooth, slippery surface, and do not lay flat at the folds like soft goods, but tend to roll  
45 or curl over at the folded edges when the folding blade leaves said edges and before the folding table moves up to hold the same, in the usual folding operation. Therefore, when the next and each succeeding fold is laid the  
50 tendency is for the last preceding fold to push the next one forward a little which slips and

curls or rolls over upon itself and thus shortens the fold, each successive fold pushing forward the following one in the same manner until a sufficient number of folds have been  
55 laid (each a little shorter than the preceding one) to permit the blade to carry the the next fold over beyond said shorter folds, which hold said longer or full length fold from rolling  
60 back, when the above shortening of each successive fold is repeated; thus producing a fold of proper, full length at stated intervals, with series of folds of uneven lengths between said  
65 full length folds, the variation in the lengths of folds often being from one-eighth to a quarter of an inch or more.

The aforesaid slipping and curling over of the goods at their folded edges are due to the usual longitudinal teeth or ridges on the front  
70 edges of the bottoms of the stationary jaws not possessing sufficient friction or holding power upon the surface of the class of goods mentioned, to hold the same from slipping as  
75 aforesaid as the folding-blade carries the cloth alternately from one end of the folding machine to the other in the folding operation. To overcome said objection is the purpose of my invention.

Referring to the drawings, A represents the frame of the folding machine, B B the jaws,  
80 one at each end of said machine, which are rigidly attached at their outer edges to said frame A.

C is the table upon which the cloth D is folded back and forth alternately as afore-  
85 said, with the folded edges at each end, between the ends of the table and the jaws. Said table, it will be understood, is in practice combined with suitable supporting and  
90 operating mechanism for alternately raising first one end and then the other, to hold the folded edges of the cloth at one end, between the same and its respective jaw while the  
95 folding blade of the machine is passing the next folded edge under the other jaw at the opposite end of the machine, but as said table supporting and operating mechanism is covered in a prior application filed by me May  
100 16, 1894, bearing Serial No. 511,394, only a brief description thereof will be necessary in this case. The construction and operation of the folding mechanism also constitute no part



of my invention, aside from the construction of the holding jaws as aforesaid, and it is therefore deemed unnecessary to describe the same in detail.

5 The four corners of the folding table frame are connected with links E, which are in turn connected with crank-levers F secured to the transverse rock-shafts G G,—one near each end of the machine. Upon said shafts are  
10 also mounted the usual torsion springs H H and upon one end of each shaft are fitted the loose crank-levers I I with which the usual eccentric-rods J J are connected for operating said crank-levers I I.

15 The fixed crank-levers F at one end of the shafts G G are provided upon their outer faces with ratchet-teeth or notches F', and pawls K K mounted on the outer ends of the loose crank-levers I I engage therewith when  
20 said levers are alternately rocked on the shafts G. G. by their respective eccentric rods J J, first one end and then the other of the folding table being thus drawn down alternately, and the torsion springs on shafts G G  
25 forcing the same up again when said downward pressure is released. For a more detailed description of said mechanism reference may be made to my previous application hereinbefore referred to.

30 The fine roughened surfaces *a, a* which I desire protection upon, are as before stated, located just back of the usual toothed or ribbed surfaces *b, b*, next to the outer edges of the jaws. Said roughened surfaces *a, a*  
35 are preferably slightly depressed below the face of the toothed or ribbed surfaces *b, b* to allow the outside portion of the top fold to remain slightly expanded as shown at *c* in Fig. 2 and thus afford a greater resistance against  
40 being pulled out by the action of the folding blade in carrying the cloth under the opposite jaw to form the next fold.

The roughened surfaces *a, a* may be formed in various ways to produce the same result,

and I therefore do not limit myself to any 45 special construction thereof.

The surfaces to be roughened may be milled longitudinally as best shown in Fig. 3 or a strip of sand paper, or similar material *d* may be fitted and secured in a slight recess formed 50 in the jaw as is shown in Fig. 4; or the same result accomplished in any other suitable manner.

As is well known, a fine roughened surface of the above nature will produce a strong friction to prevent cloths of even the finest texture and of the smoothest and hardest surface, as for instance, silk, satin and similar goods, from being easily drawn over in contact therewith, especially when pressure is applied as 60 is the case in a folding machine at the points where said roughened surfaces are employed.

I have fully demonstrated in practice by the application of my invention to a folding-machine in folding silk and similar goods that 65 said roughened surfaces effectually hold the cloth from slipping and curling or rolling back upon itself, and I am therefore enabled to produce perfectly folded pieces of cloth, with every fold of equal length.

70 Having described my invention, what I claim therein as new, and desire to secure by Letters Patent, is—

In a cloth folding machine, the combination of the frame and the folding table, with 75 a holding jaw or blade, rigidly attached at its outside edge to said frame and adapted to fit over the folded edges of the cloth, having a portion of its under surface next to its front edge provided with a series of longitudinal 80 teeth *b* and with a fine roughened surface *a* next to and just back of said toothed surface, substantially as and for the purpose set forth.

EDWARD HALL.

Witnesses:

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C. F. WESSON.