

(No Model.)

R. BUTTERWORTH.

DIE.

No. 339,084.

Patented Mar. 30, 1886.

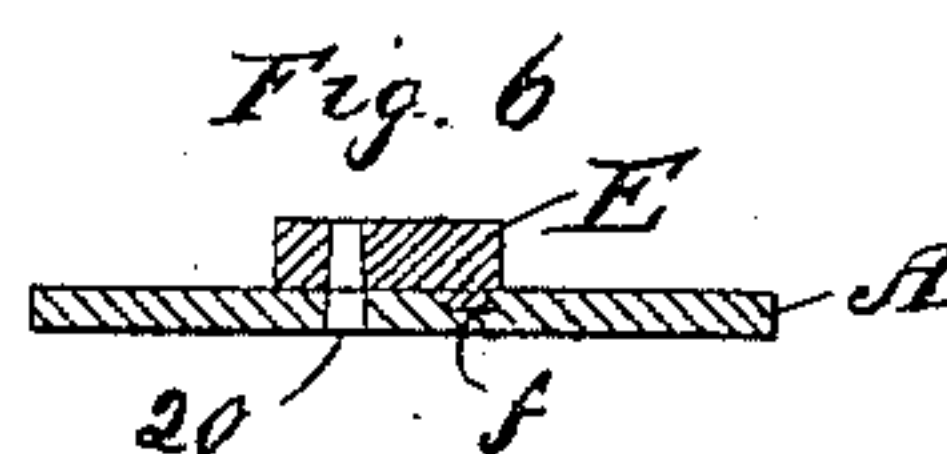
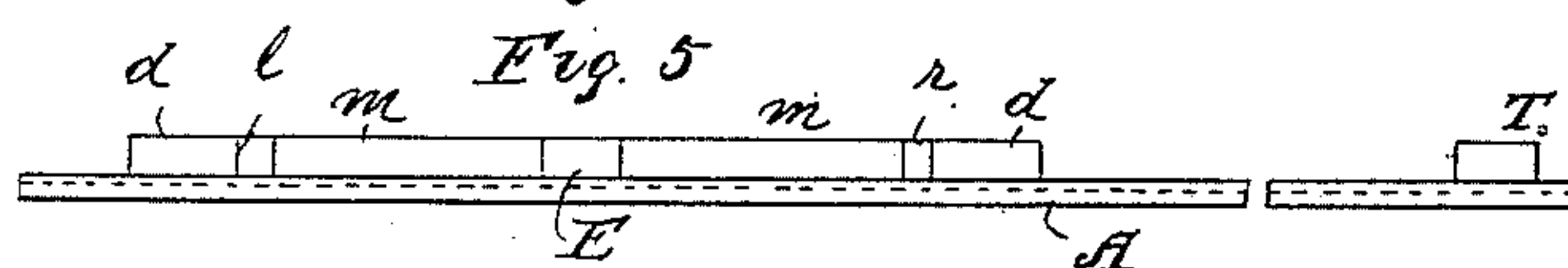
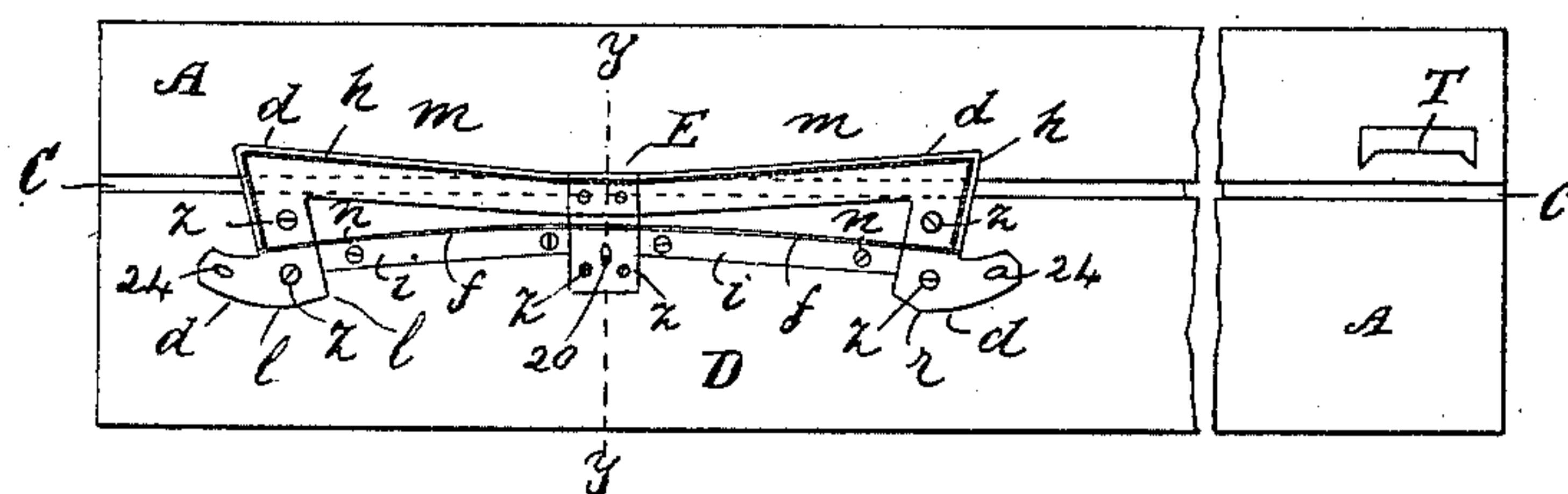
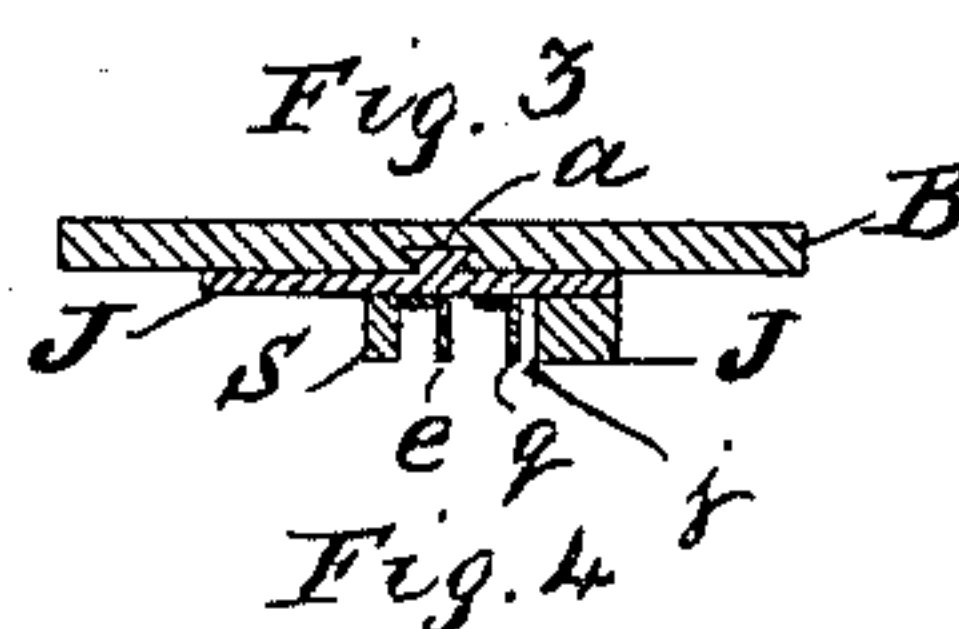
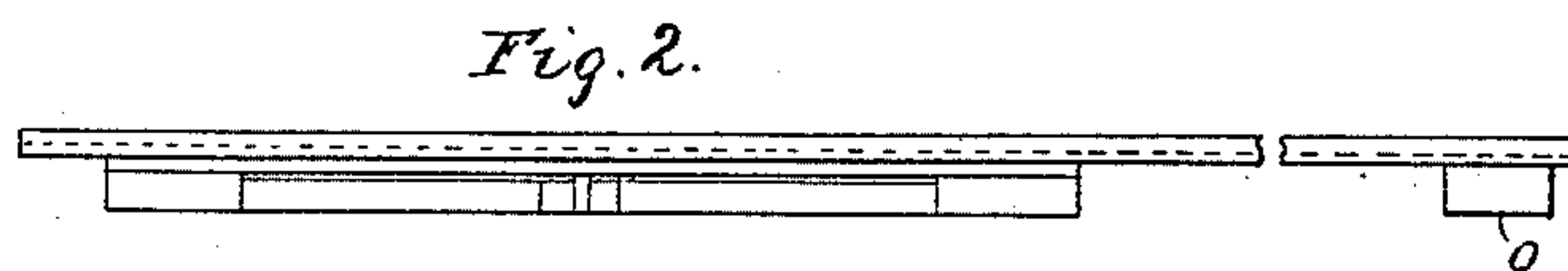
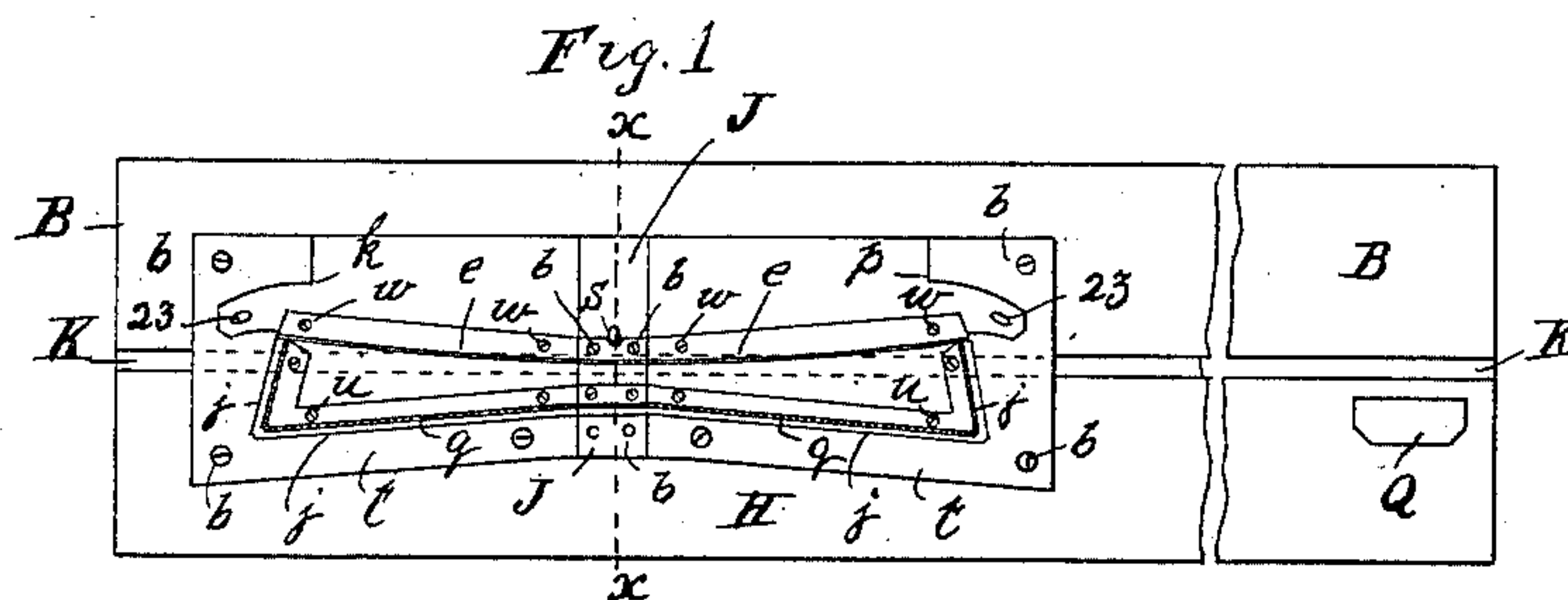
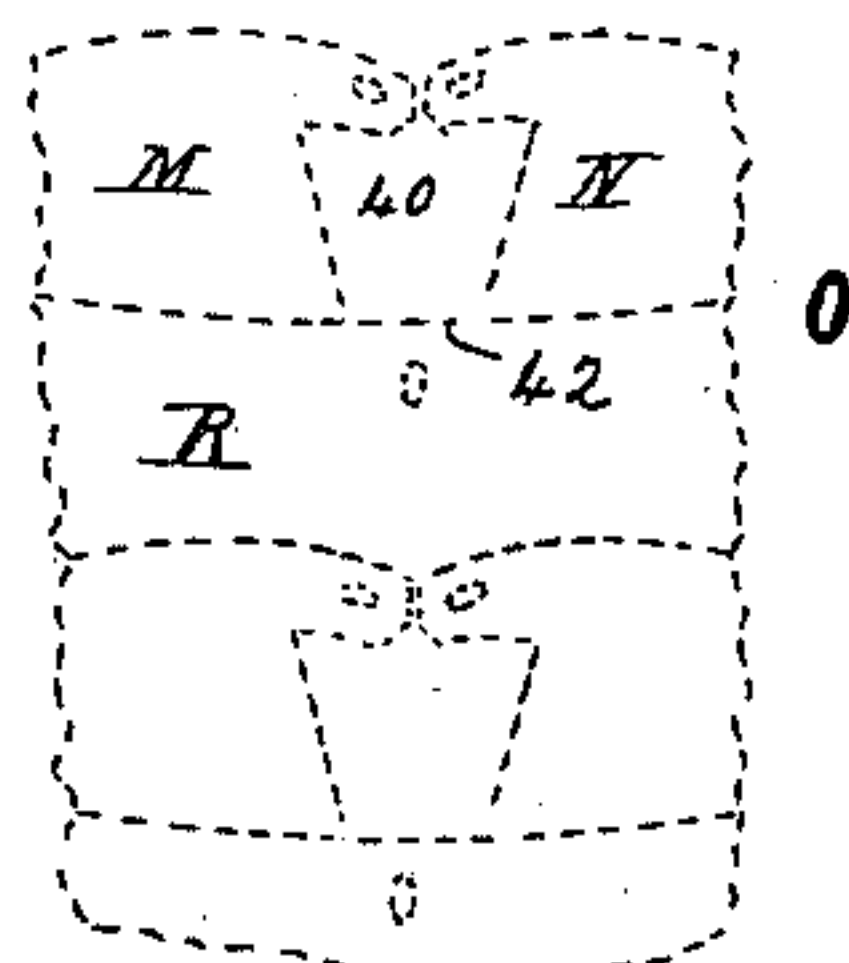


Fig. 7.



Witnesses.

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# UNITED STATES PATENT OFFICE.

ROBERT BUTTERWORTH, OF SOMERVILLE, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE FIBERLENE COLLAR COMPANY, OF WORCESTER, MASS.

## DIE.

SPECIFICATION forming part of Letters Patent No. 339,084, dated March 30, 1886.

Application filed June 9, 1885. Serial No. 168,193. (No model.)

*To all whom it may concern:*

Be it known that I, ROBERT BUTTERWORTH, of Somerville, in the county of Middlesex, State of Massachusetts, have invented a certain new and useful Improvement in Dies, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which said invention appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a plan view of the under side of the movable die or force; Fig. 2, a front elevation of the same; Fig. 3, a vertical transverse section taken on line *xx* in Fig. 1. Fig. 4 is a top or plan view of the lower or bed die; Fig. 5, a front elevation of the same; Fig. 6, a vertical transverse section taken on line *yy* in Fig. 4, and Fig. 7 a diagram illustrating the use of certain parts of the die.

Like letters of reference indicate corresponding parts in the different figures of the drawings.

My invention relates more especially to that class of dies which are employed in the manufacture of paper or cloth-faced paper collars and cuffs; and it consists in a novel construction and arrangement of the parts, as herein- after more fully set forth and claimed.

Heretofore it has been found impracticable to cut single collars from a strip or sheet of paper or cloth-faced paper without considerable waste of stock, and dies have been constructed which would cut out two or more collars at a time, the formation of which collars was completed by passing them through another machine or set of dies; or such collars were cut out singly between rollers having suitable knives set in their faces; but in such cases much loss of material occurred, and dies for cutting out other articles from the surplus stock were frequently embodied with the collar-dies on the same bed.

The object of the present invention is to provide dies which will cut out collars singly from the edge of a strip or sheet of paper, by the method hereinafter referred to, in such a manner that little or no waste will occur, and a complete collar will be produced at each descent of the die.

The nature and operation of the improvement will be readily understood by all conversant with such matters from the following explanation.

In the drawings, A represents the bed on which the lower die is mounted, and B the stock or holder for the upper die. The lower die, D, is formed in two principal sections, *m*, being divided transversely in the center, and disposed between these sections there is an extension-piece, E. A dovetail groove, C, is formed longitudinally in the face of the bed A, the sections *m m* and piece E being each provided with a corresponding tongue, *f*, adapted to fit said groove, and thereby securely attach the sections and piece to the bed. In addition to the tongues, screws *z* are also employed for securing these parts in position for use. The cutting-edge *d* of the lower die extends from the point *l* around its outer side to the point *r*, and projects vertically about three-fourths of an inch above the bed A. The sections *m* are each provided with an embosser, *h*, for producing imitation stitches on the collar in the usual manner. A creaser, *f'*, for indenting the collar on its folding-line, and having an attaching-flange, *i*, is secured to the bed A, at either side of the piece E, by screws *n*, the creasers and embossers being flush or on the same plane with the cutting-edge *d*. The piece E is also provided with a creaser and embosser, which are respectively arranged to register with the creasers *f* and embossers *h* when said piece is in position for use between the sections *m*. The upper die or force, H, consists of two principal sections, *t*, and an extension-piece, J, these parts being secured to the holder B by tongues *a*, which fit into a corresponding dovetail groove, K, in the holder and by the screws *b*. The die H is about an inch and a quarter thick, and is sunk or excavated on its face to form the cutting-edge *j*, which extends from the point *k* around to the point *p* and corresponds with the cutting-edge *d* of the die D. A stitch-embosser, *q*, corresponding with the embosser *h* of the die D, is secured in the die H, at either side of the piece J, by the screws *u*, and secured at either side of said piece by screws *w*. There is also a creaser, *e*, corresponding with the creaser *f* of the die D.



The piece J is provided with an embosser and creaser, which respectively register with the embossers *g* and creasers *e*, all of the creasers and embossers of the die H being disposed  
 5 below the plane of its cutting-edge *j*. A punch, *s*, adapted to fit a corresponding hole, 20, in the piece E, projects downwardly from the piece J, said punch being employed for making the center button-hole in the collar-  
 10 band. Two punches, 23, adapted to fit corresponding holes, 24, in the die D, also project downwardly from the die H, said last-named punches being employed for forming the button-holes in the end of the collar-band.

15 In cutting collars with my improved dies it is necessary, after the two adjacent collars M N have been cut from the edge or side of the strip or sheet of paper or cloth-faced paper O, to sever the waste piece 40 on the line  
 20 42 from the center of the collar R, and to accomplish this I provide the dies T Q, the die T being attached to the bed A, and the die Q to the stock B, these dies being disposed just the length of a collar from the dies D H,  
 25 so that as the paper is fed to said last-named dies to cut out the collars the waste pieces 40 will be brought properly over the die T and severed from strip or sheet by the joint action of the dies T Q, thus trimming said strip or  
 30 sheet preparatory to cutting the next series of collars. The pieces E J correspond in width and are designed to be removed and larger or smaller pieces substituted, to enlarge or reduce the dies longitudinally as required.

I do not confine myself to providing the 35 sections and extension-pieces of the dies with tongues, and the stock and bed with corresponding dovetail grooves for respectively receiving the same, as the sections and extension-pieces may be secured by any other 40 suitable means, if desired.

As I propose to make the process of cutting collars from the edge of a sheet or strip of paper, as shown in Fig. 7, the subject-matter of other Letters Patent, for which I have 45 filed an application under date of June 6, 1885, Serial No. 167,848, I do not claim the same herein.

Having thus explained my invention, what I claim is— 50

In a die for cutting out paper or cloth-faced paper collars, the bed A, a lower die, D, thereon, the stock B, and a complementary upper die, H, supported by said stock, said dies being adapted to complete the formation 55 of an entire collar every time they are brought together, in combination with a cutter, T, on said bed and a complementary cutter, Q, supported by said stock, said cutters being disposed the length of a collar away from said 60 dies, so that as one collar is cut out by said dies the waste piece of the collar previously cut is severed from the stock.

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Witnesses:

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