

No. 870,343.

PATENTED NOV. 5, 1907.

E. H. BROWN.
FOLDING MACHINE.
APPLICATION FILED DEC. 30, 1905.

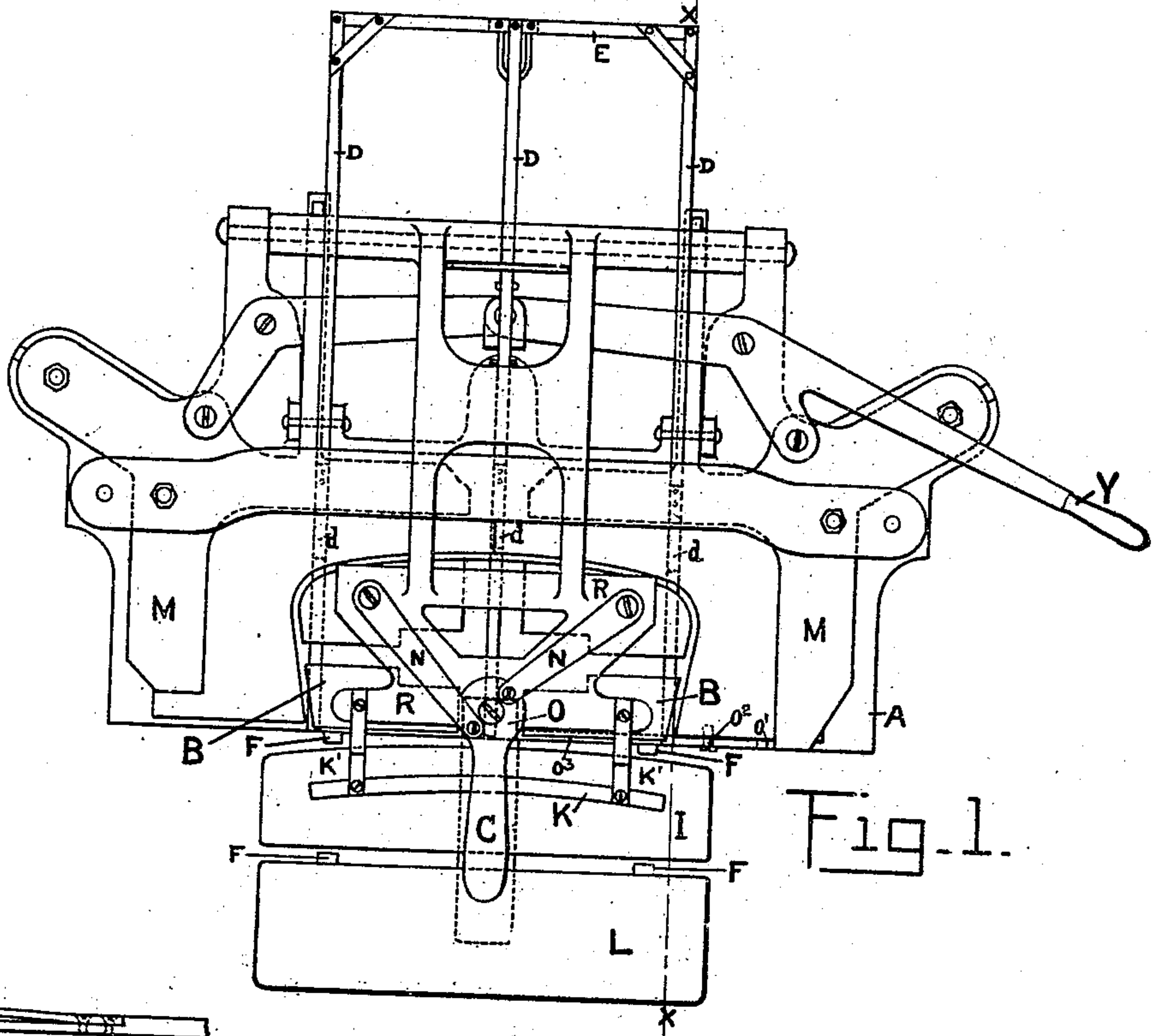


Fig. 1.

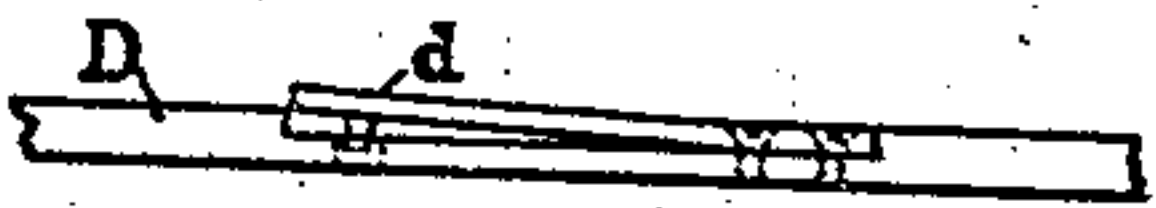


Fig. 3.

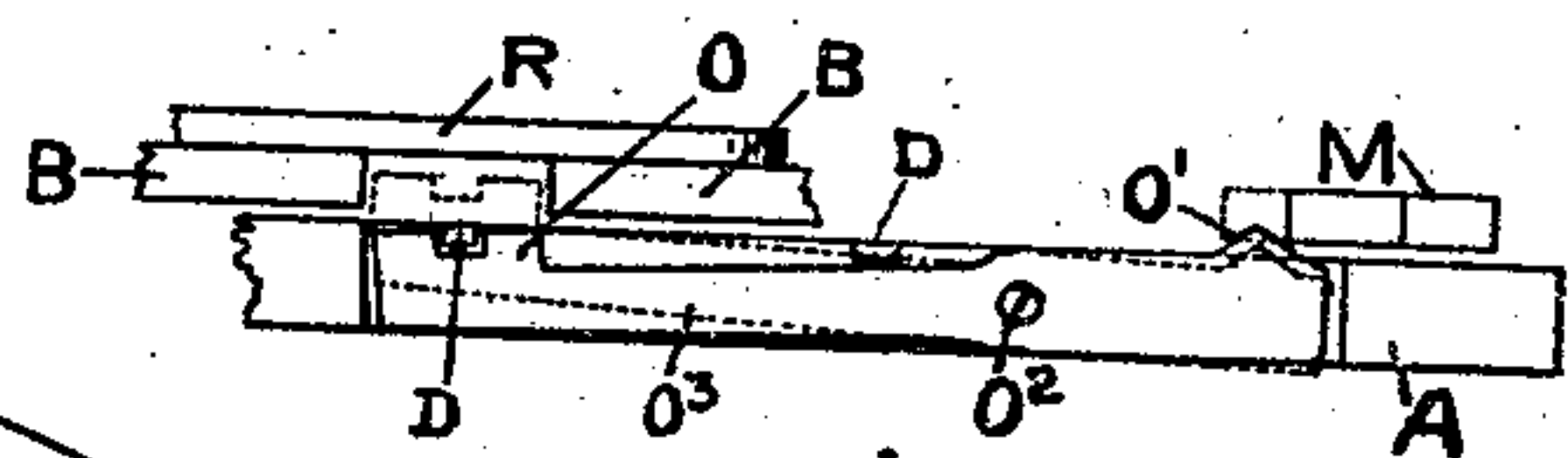


Fig. 4.

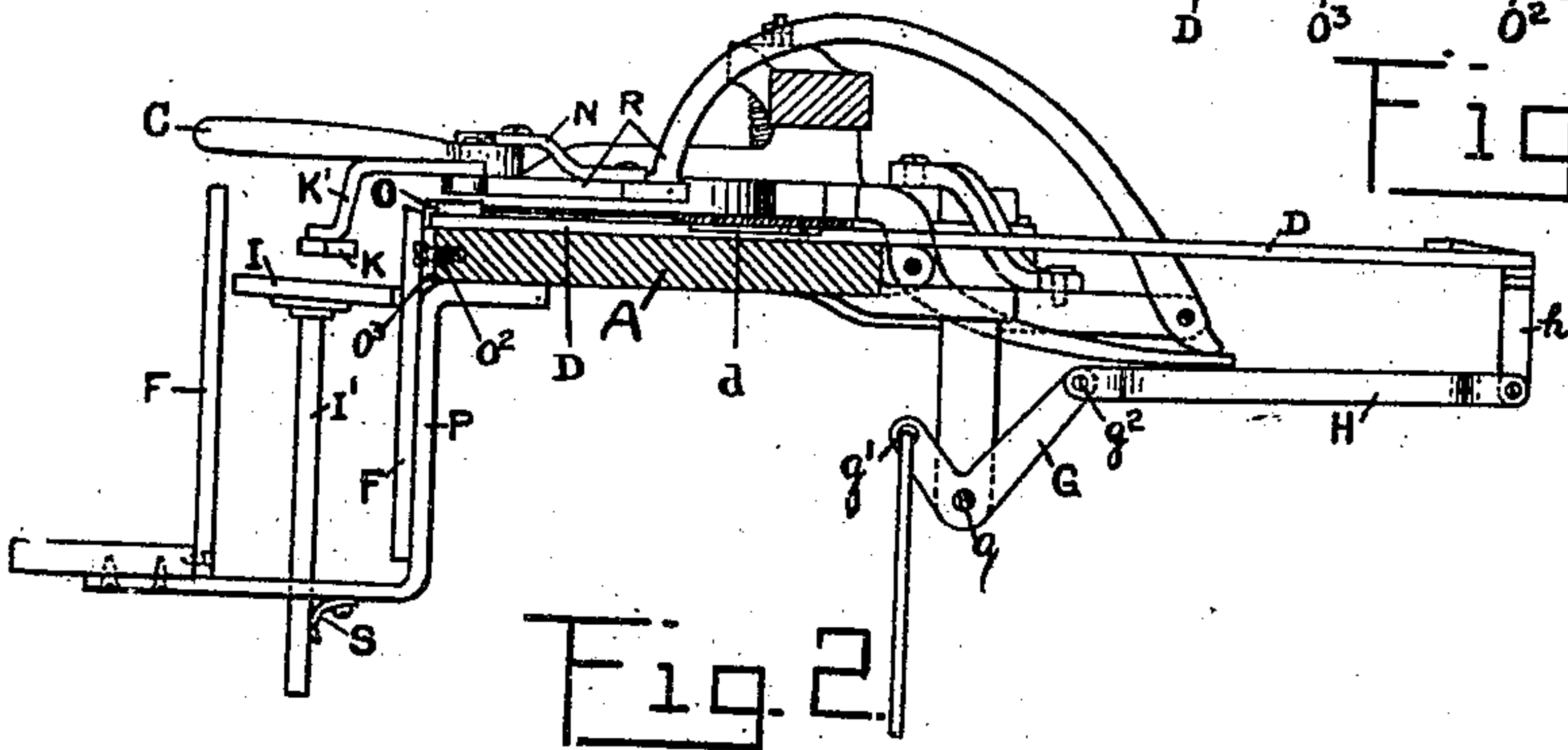


Fig. 2.

Witnesses
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UNITED STATES PATENT OFFICE.

EUGENE H. BROWN, OF TROY, NEW YORK.

FOLDING-MACHINE.

No. 870,343.

Specification of Letters Patent.

Patented Nov. 5, 1907.

Application filed December 30, 1905. Serial No. 293,903.

To all whom it may concern:

Be it known that EUGENE H. BROWN, a citizen of the United States, residing at Troy, in the county of Rensselaer and State of New York, has invented certain new and useful Improvements in Folding-Machines, of which the following is a specification.

My invention relates to machines for folding the blanks of collars and cuffs, and usually called folding machines, and the objects of my invention are to provide an attachment by which the collar and cuff blanks may be removed mechanically from the folding machine, after the edges are turned by said machine, and laid in smooth and compact piles without the operator taking hold of them with his hands. I attain these objects by means of the mechanism illustrated in the accompanying drawings, in which:

Figure 1 is a top plan view of a folding machine provided with my attachment. Fig. 2 is a vertical section of the same on line X—X Fig. 1, with the die removed. Fig. 3 is a detail view of a section of the sliding bar which section projects above the surface of the bed plate, and above the principal body of the sliding bar. Fig. 4 is a detail view of the lever for locking the collapsible die.

Similar letters refer to similar parts throughout the several views.

In the manufacture of cuffs and collars, the blanks from which they are made are placed upon the heated bed or support of a folding machine. The die or former of the shape desired is then pressed down upon the blank and infolders fold the edges of the blank over the die, while the blank is upon the heated support and press the folds either before or after the withdrawal of the die. Thus making smooth edges of the goods, ready to be sewed or stitched and in the shape desired. July 9th, 1901, Letters Patent of the United States #678,094 were issued to me for such a folding machine for collar and cuff blanks. One part of my present invention is designed as an attachment to such or similar machines, by which the blanks, after being folded and pressed upon the bed of the machine may be removed therefrom and placed in smooth, accurate and compact piles mechanically, as above stated. Another part of my present invention is designed to lock the die upon the collar or cuff blank so that the edges will be folded over the edges of the die and be pressed there upon the die before the die is withdrawn and while it remains within the folds, thus insuring a more uniform, accurate and smooth fold and the die being collapsed after the blank is folded the edges of the die are thus withdrawn from the fold without disturbing the accuracy and smoothness of the fold.

Referring to the annexed drawings, A, represents the bed of a folding machine, on which the blank of a

collar or cuff is placed; B represents the die or former for pressing the blanks upon the bed, A.

C, is the handle attached to the die B, by which the die is brought down and pressed upon the blank, as described in my above named patent. The drawings of my former patent, however, show a die adapted for folding the edges of a cuff and therefore designed to fold the edges on four sides while the drawings filed herewith show a die for folding a collar and therefore adapted to fold only the three sides necessary to a collar.

D, D, D, are sliding bars extending lengthwise over the bed, A, constructed to lie flush with or slightly below the surface of the bed plate, A. Attached to each sliding bar D, just back of that portion of the bed plate occupied by the collar or cuff blank upon which the die descends, is a section *d*, one end of which springs slightly above the surface of the bed plate as shown in Fig. 3. When the infolders, or any other part of the machine, presses down upon this part of the sliding bar it is pressed down below the surface of the bed plate and when the pressure is removed it extends slightly above the surface of the bed plate and is so arranged and adapted that when the sliding bars are moved forward the projecting sections *d*, *d*, will engage the edge of the cuff or collar blank, push it over the bed plate and deposit it upon the yielding table, I.

N, N, are arms connecting the handle, C, with the die or former and by means of which the die is collapsed by moving the handle as described in my former patent.

The die or former is composed of sections of thin narrow plates. When the die is collapsed these plates and the arms, N, N, lie compact together in the center. When the die is spread by the arms, N, N, in position to press the goods being folded these sections are opened up, occupying the edges of the form and leaving a space in the center between the inner edges of the sections, B, B, as shown in Fig. 1. O is a block of suitable form and construction to extend upward through this space when the die is open in position to press the goods. It is obvious when the block, O, is in this position that the die can not be collapsed. The block, O, is attached to the lever O³ which turns on the pivot O². The block O, and the end of the lever on that side is heavier than the other end of the lever, so that when at rest the block, O, is below the bottom of the die, when the infolders move over the die, one of the infolders comes in contact with the beveled projection, O', on the opposite end of the lever and presses it downward which raises the end of the lever carrying the block O, and raises the block, O, into position between the arms of the die and locks the die as above stated. The infolder remains over the projection O', and holds the block, O, in the die until the infolder is removed from

the die. The block, O, is so constructed and arranged that it will not come in direct contact with or press against the blank being folded. If the die being used is for folding collars or other blanks on three sides only there is space by the side of the blank within the space between the inner edges of the sections of the die for the blank, O, as above described.

Y, is the handle to operate the infolders, M, M, as described in my former patent, constructed and arranged to fold the edges of the cloth upon the bed plate over the die. The operation of this machine differs from the operation of the machine described in my former patent in this particular, to wit: when the die descends upon the goods to be folded and the infolders fold the edges of the goods over the edges of the die, the die is thus locked down upon the goods and can not be collapsed or removed until after the infolders press the folds upon the lie while the die is within the folds, thus securing a perfectly smooth, accurate and uniform fold ready to be stitched or sewed and not too hard or stiff for that purpose. After the goods are thus pressed by the infolders over the edges of the die, the infolders are removed and the block, O, drops down from contact with the die, and the die is then collapsed allowing the folded and pressed blank to rest upon bed over the sliding bars, D, D, in front of the raised sections, *d, d*.

E is a connecting bar, to which the rear ends of the sliding bars, D, are fixedly attached. G is an elbow crank having two arms at right angles to each other. The elbow, G, is attached under the machine by a pivot, *g*, to some substantial part of the machine. Hinged to the front arm of the elbow, G, at *g'* is the rod, J, having a foot pedal J', adapted to be operated by the person operating the folding machine. Hinged to the rear arm of the elbow, G, at *g''* is the connecting bar, H, which is connected by the arm *h*, to the bar, E, and arranged so that when the operator presses upon the foot pedal J', it will turn the elbow crank, G, upon the pivot *g*, thus bringing forward the connecting arm, H, and the connecting bar, E, which will shove forward the sliding bars, D.

I, represents a yielding table in front of the machine attached to a bracket, P, by the post I', which is adapted to slide downward through an opening in the bracket, P, and hold the table in the position desired by a friction spring, of any desired construction, acting upon the post I', as the spring, S, so that the yielding table, I, may be moved up or down as desired, and will remain in any position placed.

F, F, F, F, are guides, two on each side of the yielding table, I; L is a stationary shelf or table resting upon or attached to bracket, P; K is a pressure plate attached to the die, B, by the brackets K', K'. Two of the guides F, which are adjacent to the bed plate, A, are a little higher than bed plate A, with smooth beveled surfaces extending from the top surface of the bed plate, A, and do not interfere with the movement of the sliding bars, D, or with the collars or cuffs sliding over them.

The operation of my machine is as follows: The collar or cuff blanks which are desired to be folded are placed upon the table, L, by the operator; the yielding table, I, is raised to about even with the top surface of the bed plate, A; the operator takes one of the collar or cuff blanks and adjusts it upon the bed plate, A, in position,

he then moves the die, B, by the handle C, down upon the blank and turns the edges of the blanks over the edges of the die, B, by the infolders, as commonly used in folding machines and as described in my patent #678,094. After the edges of the blanks are folded and pressed as above described and the die and infolders removed therefrom, the operator places his foot upon the pedal J', which turns the elbow crank, G, and by means of the connecting arm, H, and the connecting bar, E, moves the sliding bars forward, so as to carry the collar or cuff blank out over and beyond the top beveled edge of the guide, F. The sliding bars, D, are then slid back to place, and as they slide backward the top ends of the guide, F, catches the collar blank and deposits it upon the yielding table, I. Then the next blank is placed upon the bed plate and the same operation is repeated and as the part carrying the die, B, descends presses and folds the second and following blank, the presser plate, K, presses the blanks already deposited upon the yielding table, I, and presses the yielding table downward, a distance equal to the thickness of the goods forming the blank; the arm K', being adjusted at such a length as to allow the pressure bar, K, to descend upon the yielding table, I, a proper distance for that purpose. By the use of this attachment the work is piled accurately and truly upon the yielding table by the foot of the operator, while he has his hands ready to prepare for the next operation. The guides, F, F, adjoining the yielding table operate as catches to remove the goods from the sliding bars, D, to the yielding-table, and the goods are piled evenly, carefully and accurately, upon the yielding-table without being disarranged or soiled as they would by being handled by hand.

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

1. In a machine for folding collar and cuff blanks of the type having a collapsible die; infolders for folding and pressing the blanks over the edges of the die upon the bed of the machine; a block adapted to fit between sections of the die, thereby preventing the die from collapsing; a lever with said block mounted upon one end thereof; said lever so arranged and constructed that the infolders will press down the other end of the lever when the infolders are in contact with the blank on the bed of the machine, thereby raising the block in position between the sections of the die and thereby preventing the collapsing of the die until the infolders are removed from the blank, substantially as described.

2. In a machine for folding collar and cuff blanks; sliding bars extending lengthwise across the bed of the machine and below or flush with the surface of the bed plate; projections upon said bars back of the bed plate of the machine extending above the plane of the surface of the bed plate, and adapted to engage a blank folded and pressed thereon; means for propelling said sliding bars forward, whereby the collar or cuff will be moved over the bed plate beyond the front of the machine; catches adapted to engage said blank when the sliding bars return whereby said blank will be retained and dropped in front of the machine; a yielding table in front of said machine adapted to receive said blanks when deposited thereon by said sliding bars and said catches; a presser plate attached to the die and adapted to press upon the blanks when deposited upon said yielding table, substantially as described and for the purposes set forth.

3. In a machine for folding collar and cuff blanks; sliding bars extending lengthwise across the bed of the machine and below or flush with the surface of the bed plate; projections upon said bars back of the bed plate of the machine extending above the plane of the surface of the bed plate, and adapted to engage a blank folded and pressed thereon; a foot pedal attached to an elbow

crank; rods connecting said elbow crank to said sliding bars whereby said sliding bars may be propelled forward by pressing upon said foot pedal and thereby moving the blank forward over the bed plate beyond the front of the machine; catches adapted to engage said blank when the sliding bars return whereby said blank will be retained and dropped in front of the machine; a yielding table in front of said machine adapted to receive said blanks when deposited thereon by said sliding bars and said catches; a presser plate attached to the die and adapted to press upon the blanks when deposited upon said yielding table, substantially as described and for the purposes set forth.

4. In a machine, for folding collar and cuff blanks, of the type having a collapsible die; means for locking the collapsible die when the die is upon the blank being folded in the machine while the die is pressing the goods upon the bed of the machine, infolders to fold the edges of the blank over the die; sliding bars extending lengthwise across the bed of the machine and below or flush with the surface of the bed plate; projections upon said bar back of the bed plate of the machine extending above the plane of the surface of the bed plate, and adapted to engage a blank folded and pressed thereon; an elbow crank, a foot pedal attached thereto; rods connecting said elbow crank to said sliding bars; whereby said sliding bars may be propelled forward by pressing said foot pedal and

thereby moving the blank forward over the bed plate beyond the front of the machine; catches adapted to engage said blank when the sliding bars return whereby said blank will be retained and dropped in front of the machine, a yielding table in front of said machine adapted to receive said blanks when deposited thereon by said sliding bars and said catches; a presser plate attached to the die and adapted to press upon the blanks when deposited upon said yielding table, substantially as described and for the purposes set forth.

5. In a machine for folding collar and cuff blanks of the type having a collapsible die; infolders for folding and pressing the blanks over the die; a lever with a block on one end thereof; said block adapted to come in contact with and lock said collapsible die when said die is upon the blank on the bed of the machine; means whereby said infolders will operate said lever thereby causing said block to lock said die when said infolders are pressing said blank over said die, substantially as described and for the purposes set forth.

In testimony whereof I have affixed my signature in presence of two witnesses.

EUGENE H. BROWN.

Witnesses:

WALTER E. WARD,
DUDLEY B. WADE.