

935,784.

G. J. DORMANDY.
FOLDING MACHINE.
APPLICATION FILED FEB. 25, 1904.

Patented Oct. 5, 1909.
5 SHEETS—SHEET 1.

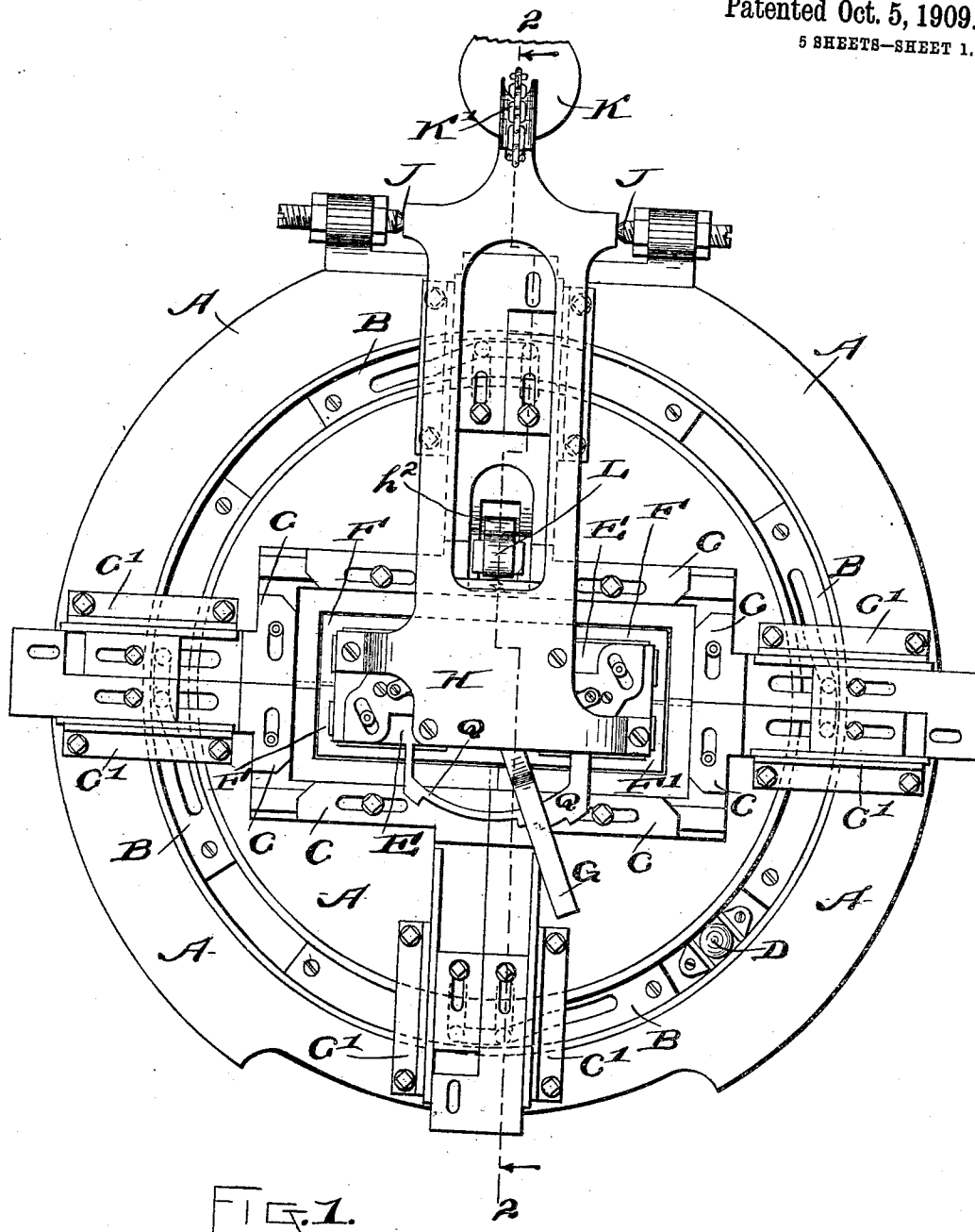


FIG. 1.

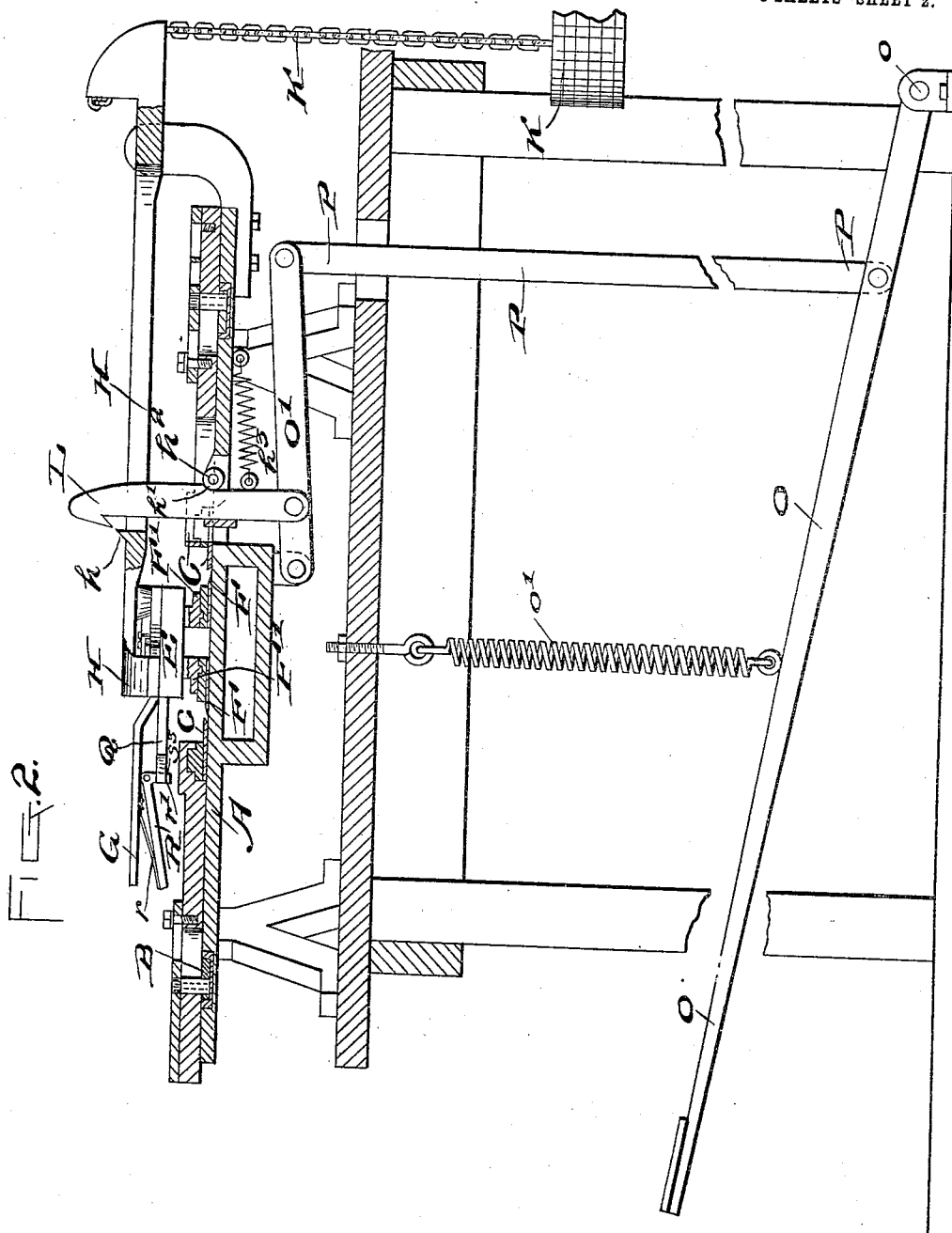
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5 SHEETS—SHEET 2.



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5 SHEETS—SHEET 3.

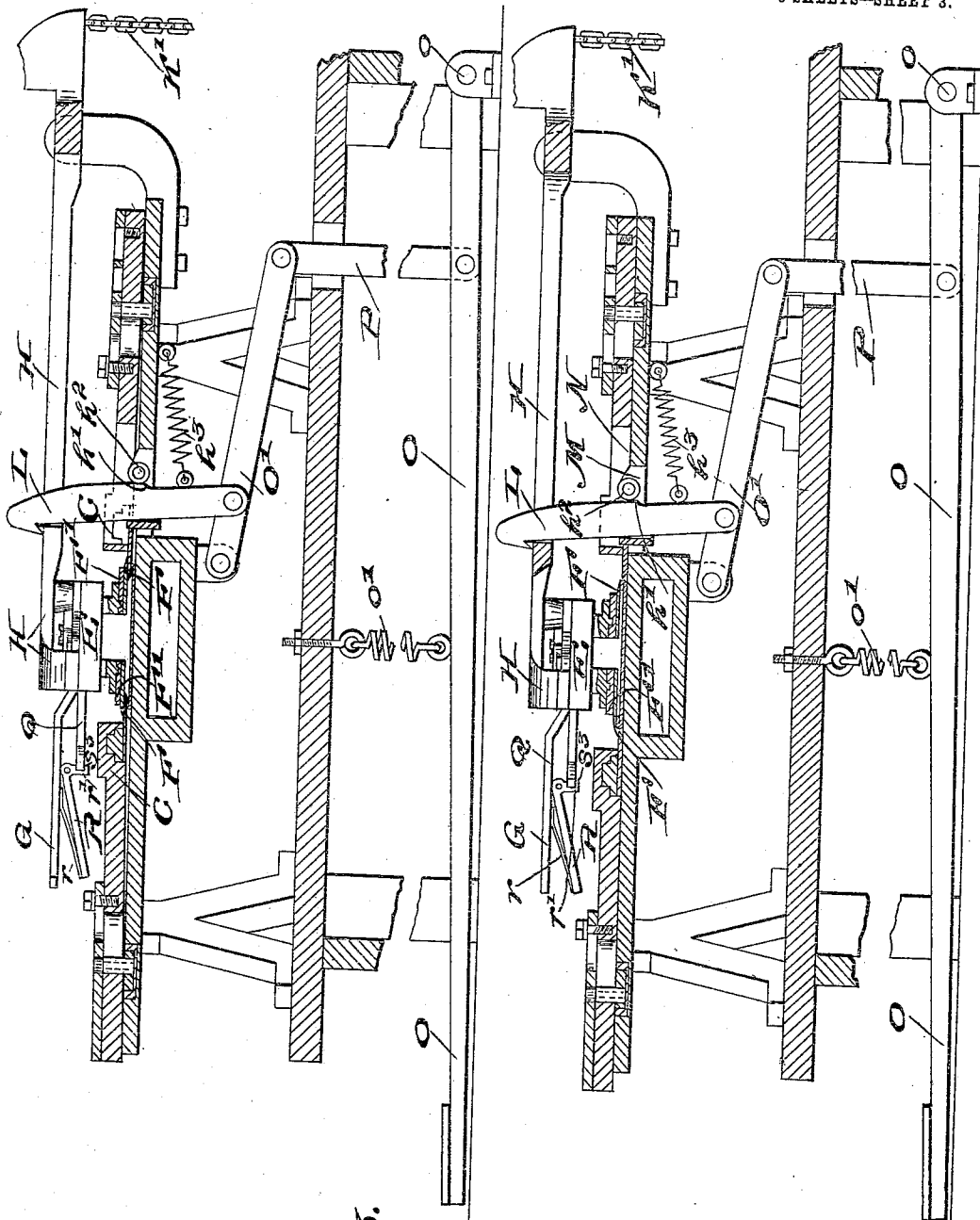


FIG. 3.

WITNESSES

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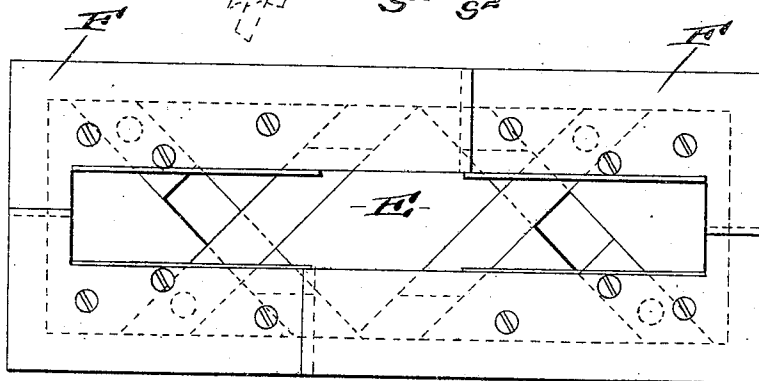
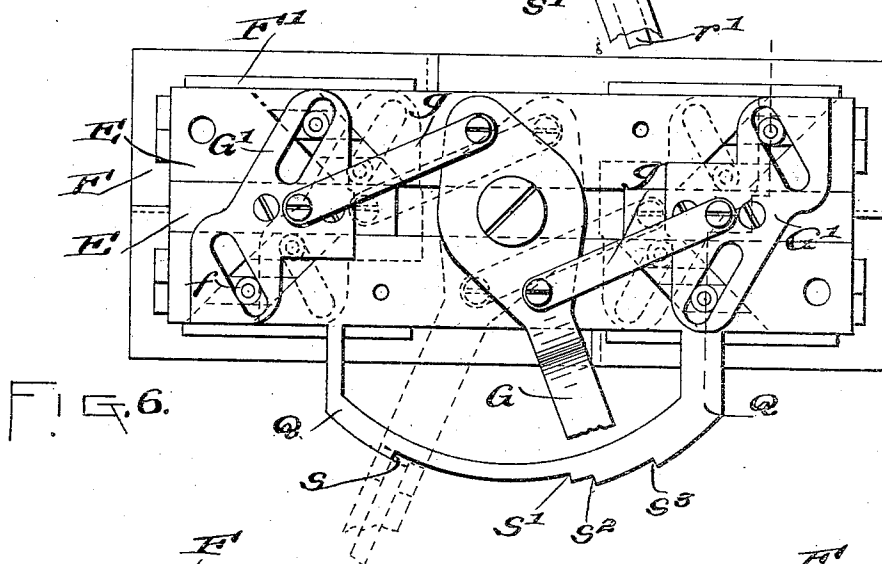
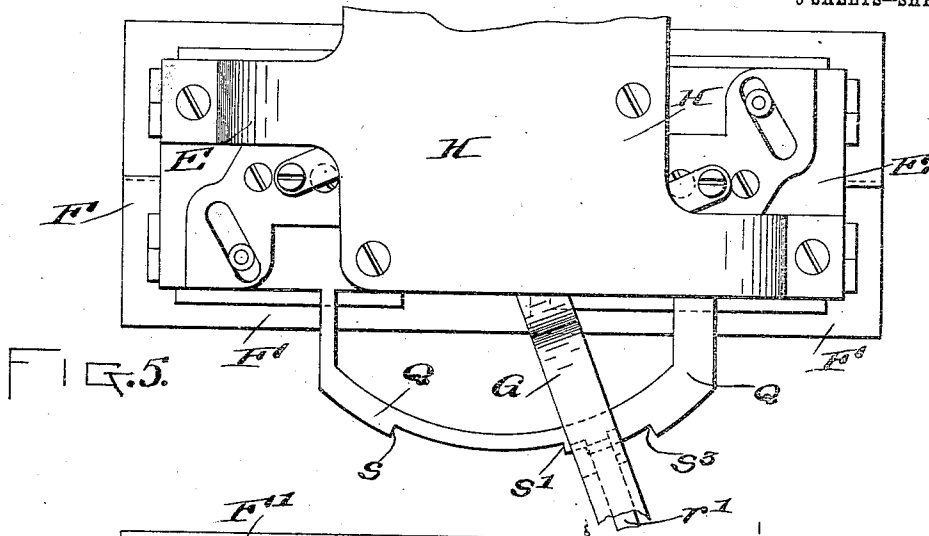
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6 SHEETS—SHEET 4.



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FIG. 7.

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5 SHEETS—SHEET 5.

FIG. 8.

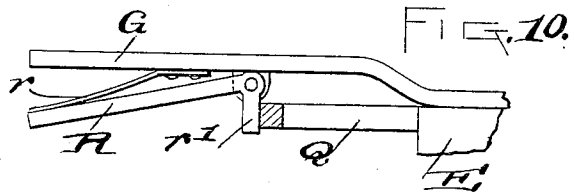
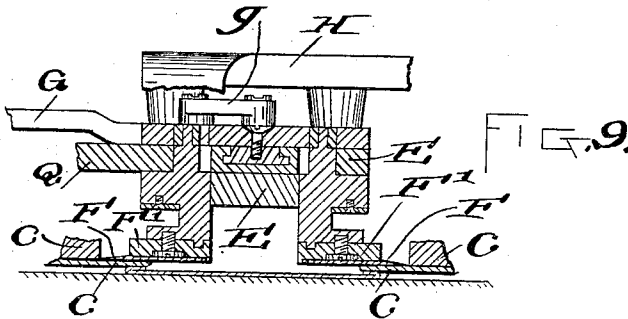
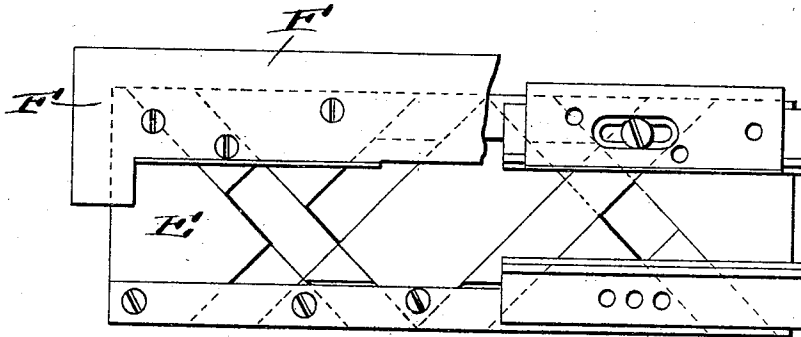
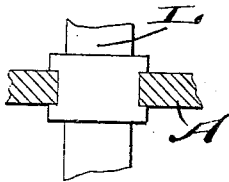


FIG. 11.



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UNITED STATES PATENT OFFICE.

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FOLDING-MACHINE.

935,784.

Specification of Letters Patent.

Patented Oct. 5, 1909.

Application filed February 25, 1904. Serial No. 195,155.

To all whom it may concern:

Be it known that I, GARRY J. DORMANDY, a citizen of the United States, residing in Troy, county of Rensselaer, and State of New York, have invented certain new and useful Improvements in Folding-Machines, of which the following is a specification.

My invention relates to machines for in-turning or infolding the edges of blanks for cuffs, collars, or like articles; and more particularly to mechanisms and parts for effecting the folding and pressing of the folds of blanks to constitute the two parts of a cuff or analogous article preparatory to sewing such parts together.

One of the principal objects of my invention is to produce a machine that will afford a more simple construction and operation and more particularly by employing a single member or part which shall fill the office of a die or templet for defining the folds of the blanks, and the further office of effecting a creasing pressure upon the folds of the blanks.

Other objects will appear during the description hereinafter following:

I will first describe a folding machine embodying my invention and then point out the novel features in claims.

In the accompanying drawings, Figure 1 is a top view of a folding machine embodying my invention, the particular machine illustrated therein being one adapted for the infolding of cuff blanks having four square corners. Fig. 2 is a cross section taken upon the plane 2—2 of Fig. 1. Fig. 3 is a cross section similar to Fig. 2, but showing the parts in a different position or stage of operation. Fig. 4 shows a cross section similar to Fig. 3 with the parts in a still different stage of operation. Fig. 5 is a top or plan view of the templet illustrated in Fig. 1 and its operating mechanism, the same being indicated on an enlarged scale. Fig. 6 is a plan view similar to Fig. 5, but with certain parts removed in order to show in detail the operating mechanism for the templet plate. Fig. 7 is a bottom view of the templet shown in Fig. 5. Fig. 8 is a view similar to Fig. 7, but with portions of the templet plates removed in order to more clearly show the operating mechanism therefor. Fig. 9 is an enlarged cross section of the templet of Fig. 3, with the parts shown in the same stage of

operation as in said Fig. 3. Fig. 10 is a detail view of the operating handle for the templet shown in the above described figures, and the means whereby its extent of throw is limited at the will of the operator. Fig. 11 is another detail view on an enlarged scale of certain parts of the machine illustrated in Fig. 2 herein.

Similar letters of reference are employed to designate corresponding parts in the several figures of the drawings.

A designates the bed of a folding machine embodying my invention, which bed is intended to serve as a support for the blanks to be infolded in said machine. In coöperative relation with said bed is infolding mechanism, and for convenience I have illustrated a species of infolder operating mechanism similar to the mechanism shown in an earlier Patent, No. 707,030, issued to me. Such mechanism consists, generally speaking, in a series of infolding members or infolders suitably spaced around the center of the bed of the machine according to the form of the blanks to be infolded. These infolders are represented in Figs. 1 to 4 inclusive by the character C, and they may be said to comprise inwardly and outwardly movable members to the inner ends of which the infolders proper or infolding plates are secured; in coöperation with guiding means, such as the slide-ways C', which are secured to the bed of the machine in a manner similar to my aforesaid patent. For operating said infolders or in other words for effecting their inward and outward movements, I have shown an operating mechanism similar to that of my aforesaid patent, namely, one consisting in an oscillating part or ring fitted in a suitable slide-way, annular in form in the particular example shown in the drawing to correspond with the circular form of the oscillating part or ring. This oscillating ring is provided with a handle D for effecting its operative movements, and is further provided with cams B which are preferably removable and adjustable in said ring. The purpose of said cams is to afford a cam connection between the ring and the inwardly and outwardly moving members which carry the infolders properly.

In the particular machine illustrated in the drawings and which, as before stated,

illustrates my invention as applied to a cuff having four square corners, I have indicated each of the infolders for the four sides of the blank as being formed in two halves, each half being separately movable so that in effect there are eight infolders. For convenience, however, the guiding mechanism for each pair of infolders is identical. One advantage of this being that I am enabled to employ the same infolding actuating cam for the two halves of each of said duplicate infolders.

Before describing the fold-defining and pressing mechanism, I will briefly outline the operation of the particular infolders illustrated in the drawings: Assuming the blanks resting upon the bed to be defined by a suitable die or templet, the operator by means of the handle D oscillates the infolder actuating ring with its cams B, the first movement being in the direction of the hands of a watch, the first result of such movement would be the engagement of the eccentric portion of the several cams B with cam-pins connected to one of each of the four pairs of infolders so that alternate infolders around the periphery of the blank will receive an inward infolding movement. This operation will be followed by the continued movement of the handle D by the engagement with the eccentric portions of said cams B with the cam pins of the remaining alternate infolders to effect their inward movement. The purposes of thus effecting the infolding of the blank-edges in successive infolding operations is the production of blanks having what are known as lock-corners, which are now well known in the art. An advantage of the particular operation I have just described is the production of lock-cornered blanks, any two of which will interlock without the necessity of manufacturing blanks of two species capable of being fitted together.

The above described species of infolding mechanism is a convenient one, especially for the particular form of blank thereby intended to be infolded; but I do not limit myself to such species of mechanism but wish to cover the use of any known form of infolding mechanism in which the number and contour of the infolding members will depend upon the form of the fold to be produced. I prefer, however, to employ mechanism in which infolding plates or infolders are capable of to and fro movements from an outer or normal position to an inward position within the edges of the folded blanks.

I shall now describe a member or part adapted to fill the office of a die or templet for defining the folds of blanks, and the further office of effecting a suitably powerful creasing pressure upon the folds of the blanks, and preferably by the squeezing op-

eration between the infolders while in their inward position and the blank supporting portion or bed of the machine.

From the above general description, it will be seen that there exists in the machine of the present invention dual operative relations between the infolding mechanism or instrumentality and the blank-defining and pressing part or member, which latter may properly be called the templet. These dual relations are the coöperation in the earlier operation of the machine wherein the templet serves to define the folds while the infolding mechanism serves to turn over the edges of the blanks defined by the templet; while in the later operation of the machine after the templet has been withdrawn from the folded edges of the blanks, it serves to communicate to the infolding mechanism or infolders a suitably powerful creasing pressure, while the folding mechanism serves to retain the blank-edges undisturbed in their folded position, and to receive from the templet and to communicate to the blank-edges such creasing pressure. A great advantage will be at once apparent from the arrangement permitting the creasing pressure to be applied to the folds of the blanks, while the infolders are in their inward position, and before their disengagement with the infolds, for the reason that an outward movement of the infolders previous to the creasing and fixing of the folds would have a tendency to disturb and would endanger the accuracy of the folds.

While the templet of my invention may comprise any form of mechanism for defining folds of blanks during the operation of the infolding mechanism, I have in the specific machine illustrated herein shown such templet as comprising, together with an edge portion or stock and actuating mechanism, a series of templet plates fitted to expand and contract, or, in other words, to assume different positions relatively to the edge portion of the templet and relatively to the blanks to be infolded. With such species of templet, there will be what I shall term a normal position, that is, a position in which the plates of the templet bear such correlation as to properly define or outline the form of the folded blank. Such templet should be further fitted and constructed so that its plates or the edge portions thereof, which define the folds of the blanks, may be contracted or withdrawn from said folds after their formation, and this operation I shall term the contraction of the templet.

To insure the proper positioning of the templet upon the blanks resting upon the bed of the machine, it is usual to provide a templet supporting arm. I have illustrated such arm in drawings annexed hereto, and the same is designated by the letter H. On

the rear end of the arm H suitable pivoting mechanism, such as the adjustable pivots J may be provided for insuring an accurate upward and downward swinging movement of the templet which is located at the forward end of the arm H. To the rear of the pivots J, I have shown a chain K' for suspending the counterbalance weight K from the rear end of the arm H.

Referring now more particularly to the Figs. 1, 2 and 5 to 9 inclusive, the templet will be seen located at the forward end of the arm H, and the same comprises a body portion or stock E to which are fitted the templet plate guiding and operating mechanism. The templet plates are represented by the letters F, and in the form of templet shown herein the same consists of four diagonally moving plates. These plates are preferably of such extreme thinness that a fold of appreciable sharpness may be formed over the edges thereof to insure the production of an accurately folded blank. For effecting the inward and outward movements of the templet plates are provided slide-ways for guiding the plates in their movements, and cams cooperating therewith. G represents a forwardly extended handle fitted to oscillate about a pivot located upon the templet stock. The thin templet plates F are secured beneath the stronger and more solidly constructed parts F', which may form intermediate connections between the templet plates and their actuating mechanism.

The use of cams and guideways for the purpose of operating infolder plates is not of itself new. Therefore, I will not describe in great detail the construction of my templet. The diagonal slide-ways will be clearly seen in Figs. 6 and 7. Fitted to each of the diagonal slide-ways is a roller *f* for making a cam engagement with two horizontal moving cam plates G' G', which in turn are connected by means of links *g g* to the oscillating member or handle G, whereby the operator may effect the horizontal movements of the cam plates G' G', and the diagonal inward and outward movements of the templet plates F, by oscillating the handle G. Forward of the templet stock and connected rigidly to it is a member which may conveniently be made in the form of a sector Q, and the purpose of the sector Q is to provide shoulders or stops *s s' s² s³* adapted to cooperate with the latch device R, secured to the oscillating handle D. When the handle G is in such position that the latch R is in contact with the shoulder *s* of the stop or sector Q, the templet plates will be in their inward or contracted position, as shown in dotted lines in Fig. 6. On the other hand, when the latch R is in contact with the stop *s'* near the other end of the sector Q, the templet plates will be in their normal posi-

tion,—that is, the position which they assume when the templet is of the size of the folded blanks. The handle G will be in this position during the period that the templet is resting upon the blanks and while the blanks are being infolded.

In addition to the shoulders or stops *s, s'* of the sector Q, are provided additional stops *s²* and *s³*, which are further removed from the stop *s* than the stop *s'*, and the purpose of the shoulders or stops *s²* and *s³* will be explained hereinafter.

Referring to Fig. 10, the stop R will be seen in enlarged detail view, and it is shown as consisting in a long arm which extends beneath the handle G and may be grasped at the same time with the handle G, and a short arm *r'* which is rigid with the arm R'. The arm *r'* co-acts with the shoulders or stops *s, s', s², s³* heretofore mentioned and is controlled by the operator through the long arm of the latch R. A spring *r* is provided to hold the latch in normal position with the arm *r'*, in contact with the sector Q or one of the stops thereof.

I will now describe how the die or templet is employed according to my invention, to effect the pressing of the folds of the blanks.

Referring now to Fig. 2, the templet plates are shown in their normal position,—that is the position which they assume while the blank edges are being infolded. Before the pressing of the edges of a blank it is advantageous to remove the templet plates in order that a sharper fold or crease may be produced. After the templet plates have been withdrawn from the folds of the blanks, or with the specific templet herein illustrated contracted, the templet may be slightly elevated above the normal position shown in Fig. 2.

According to my invention, the templet plates are then expanded to an extreme outward position, in which position they will occupy an area of greater size than the normal area, and greater than the size of the blanks which have been infolded. This additional outward movement of the templet plates is provided for in the machine illustrated in the drawings hereto annexed, by the provision of the stop *s³* already mentioned, which is located at the extreme right end of the sector Q (Fig. 6). When the templet-controlling handle G is moved by the operator to the extreme position represented by the stop *s³*, the templet plates will be expanded to their extreme outward position, and this condition is shown in Fig. 3. The templet may now be lowered to rest upon the infolders, which are still in their inward position having effected the inturning or infolding of the edges of the blank.

The reason for effecting the additional outward movement of the templet plates just referred to, will be clear from the following

explanation, referring to Fig. 2. As already stated, the edge portions of the templet plates themselves must, in order to do their work properly, be comparatively thin and substantially sharp on their outer edges. With this necessary construction it is manifest that the templet plates themselves would not have sufficient strength to communicate to the infolders a pressure which would be capable of producing any creasing effect in the folders of the blank. The additional outward movement given to the templet plates, as shown in Fig. 3, is sufficient to bring the heavier and stronger members F' to which the thin templet plates are secured, in a position directly above the infolders. If now, with the parts in the position shown in said Fig. 3, a powerful pressure is brought to bear upon the templet, such pressure will be communicated by the templet to the infolders, and through the instrumentality of the infolders will effect a proper creasing of the in-turned edges or folds of the blanks, so as to fix them with a sharp crease or fold.

I will now describe a convenient mechanism for producing a suitably powerful creasing pressure as described. This mechanism is best illustrated in Figs. 1 to 4 and may be described as consisting of a foot-lever or treadle O, having means intermediate of the treadle and of the templet or its positioning mechanism, whereby the operator upon pressing the treadle may bring to bear the weight of his body, which would be largely increased in proportion to the ratios of the several mechanical elements intermediate the treadle and templet. A very heavy pressure is required to be applied to the folds of the blanks in order to give them sufficient sharpness and fixity of crease, and it has been found in practice, that a pressure of at least one ton is almost always necessary, when distributed over the area of an ordinary blank such as that of a cuff. To produce such pressure in the machine of the present invention, I have shown a link P, pivoted to the treadle O at a point near its pivot o, and at its upper end the link P is pivoted to the outer extremity of a second lever O', which is pivoted to a fixed part of the frame.

Intermediate of the fixed pivot of the lever O' and its outer extremity, is pivoted a pressure hook L, which is a convenient means of detachably connecting the treadle to the templet-positioning mechanism. The hook L is adapted to connect with a projection h that is rigid with the templet-supporting arm H. When the hook L is in engagement with the projection h and the operator presses the treadle or foot lever O, it will be seen that the depression of the treadle causes a depression of the templet-carrying arm and the templet.

An automatic means for effecting the engagement of the hook L and the projection h

may be provided for convenience, and the following mechanism is that which I have chosen to illustrate in this connection. h^2 represents a roller that turns on a pin fast in the frame of the machine just to the rear of the hook L, at a point above its pivotal connection with the lever O'. Said roller h^2 is adapted to co-act with a cam formed upon the hook L. This cam takes the form of a slight curvature at h' which in the normal position of the parts engages with the roller h^2 , as shown in Fig. 2. A tension spring h^3 is extended between an eye provided on the hook L and the fixed part of the frame to the rear thereof, so as to afford a tendency for the hook L to oscillate rearwardly, thereby holding the hook in contact with the roller h^2 and out of engagement with the projection h on the templet-supporting arm H.

On depressing the treadle, the parts just described will operate as follows: The link P will cause the lever O' to oscillate downwardly, and that in turn will cause the hook L to move downwardly. Immediately this occurs, a cam action takes place between the cam formed by the curvature at h' of the hook L and the roller h^2 ; this cam action having the result of throwing the hook L forwardly, whereby on a continued downward movement of the parts an engagement is effected between the hook L and the projection h, so that the weight of the operator, increased in the ratio due to the leverage described, will be brought to bear in a downward direction upon the templet, thereby forcing the infolders, as shown in Fig. 3, toward the bed of the machine, to effect a pressing of the folds of the blanks between the infolders and the bed.

A possible operation with the machine above described is illustrated in Fig. 4. For example, after the pressing has been effected as shown in Fig. 3, the operator may, if he desires, move the infolders outwardly and then apply the templet in its normal extending position, to the folds of the blanks for a further pressing. This operation, however, is not the preferred operation of the machine herein.

I will now give a general statement of the preferred operation of machine heretofore described. When idle, the templet and templet-carrying arm may be elevated to an angle of about 45°, the counterbalance K retaining them in this position. The operator will place a blank of one or more thicknesses of fabric upon the bed of the machine, with its edges overlapping the infolders. The operator will then position the die or templet upon the blanks, preferably for that purpose using the handle G, and the templet plates after the templet is in position upon the blanks, will be in what I have hereinbefore described as their normal position,—that is, the position that they will occupy when the

handle G engages the stop s' . The die or templet will then correspond in size and form with the infolded blanks to be produced. The next operation will be the rotary movement of the handle D and its connected ring and cams to effect the inward or infolding movements of the infolders. This will effect the in-turning on infolding of the edges of the blanks where they extend beyond the edges of the templet. The infolders will now be allowed to retain their inward position directly above the infolds of the blanks. The operator will then contract the templet by throwing the handle G to the left, into engagement with the stop s . The templet may then be elevated and will be expanded according to my preferred operation, to the extreme limit of its expansion represented by the stop s'' , in which position the heavier portions of the templet to which the thin plates are attached, will come directly above the infolders, and the templet will then be allowed to contact with or rest upon the infolders that are still in their inward position with the folds of the blanks beneath them. The next operation is the depressing of the treadle in order to communicate a suitably powerful creasing pressure to the infolders through the die or templet, whereby the folds of the blanks are pressed and fixed with a sharp crease.

As it is customary in the art that the bed of the machine may be heated, and I have shown the bed made hollow for that purpose, the heating, of course, may be accomplished by means of steam or gas and in itself forms no part of the present invention.

The outward movement of the templet plates beyond the normal position, together with the heavier and stronger parts of the templet to which the templet plates are connected, form an important feature of the present invention, in that they constitute a provision whereby a templet which would otherwise be incapable of effecting any adequate creasing pressure may be employed as hereinbefore described. When the templet is employed for giving pressure directly to the blanks, without the interposition of the infolders, as shown in Fig. 4, it is desirable to accord the templet a slight degree of expansion beyond the normal, inasmuch as a folded blank is slightly larger than the templet over which it is folded, and in such operation with the parts shown as in Fig. 4, the templet-operating handle G will be in engagement with the stop s'' specially provided for that purpose.

What I claim as my invention is—

1. In a machine for infolding the edges of blanks for collars, cuffs, etc., having a blank support and infolders, the combination of a member fitted to the machine to move forward and from said support, said member comprising a plurality of defining

parts having thin edge portions and having also edge reinforcing portions, together with contrivances adapted to relatively move said defining parts from defining position to blank disengaging position and vice versa, and also to cause said member to take a position with said reinforcing portions immediately over such infolders, whereby it may be depressed upon the infolders to take part in the fold creasing action; and mechanism for forcing said member down on top of said infolders to crease the folds which lie beneath such infolders.

2. In a machine for infolding the edges of blanks for collars, cuffs, etc., the combination of a blank support, infolders, a member fitted to move toward and from said support, and mechanism for pressing said member down on top of said infolders to crease the folded blanks therebeneath; said member comprising a plurality of movable defining parts having thin edge portions and also having edge reinforcing portions, together with contrivances adapted to actuate said parts between three distinct operative positions, namely, blank defining position, position of disengagement from folds, and pressing position, in which pressing position said reinforcing portions of said member lie immediately above the infolders, whereby said pressing mechanism may act through said reinforcing portions and infolders to crease the folds beneath the infolders.

3. In a folding machine, the combination with a support for the blanks, folding devices comprising a changeable templet and an infolding mechanism, the templet having normal movements of expansion and contraction between a blank-defining position and a contracted position, and said infolding mechanism having a normal movement for carrying the edges of blanks over the edges of said templet, and the said templet and infolding mechanism mutually coöperable for producing the folds of the blanks; and one of said devices capable of an abnormal movement after the folding has been completed and the templet withdrawn from the folds, and mechanism whereby pressure may subsequently be applied through the templet to the infolders and thereby to the blank folds to crease and fix such folds.

4. In a folding machine, a fold-defining member comprising relatively movable parts, the said parts having a normal fold defining position, an expanded pressing position, and a collapsed fold disengaging position, combined with a mechanical determining means for determining said three positions respectively; and creasing pressure producing mechanism having mechanical connections extending to said member during pressing operation for depressing said member.

5. In a folding machine, an expandible fold-defining and fold-pressing member, and

mechanism for preventing the expansion of said member beyond its fold-defining position and for expanding said member from its fold-defining to its fold-pressing position at will, for the purpose specified.

6. In a folding machine, a blank support, an expansible fold-defining and fold-pressing member, a plurality of infolders, and mechanism for preventing the expansion of said member beyond its fold-defining position and for expanding said member from its fold-defining to its fold-pressing position at will, for the purposes specified.

7. In a machine for folding cuff-blanks or analogous articles, the combination of a support for the blanks, an expansible templet having relatively heavy portions and having thin edge portions which are adapted to bear directly upon the blanks upon said support and within edge portions of the blanks, infolders constructed to move inwardly and outwardly, whereby the edge portions of the blanks may be folded over the edge portions of the templet, means for contracting and expanding the templet, the said templet being adapted, while the infolders are in their inward position, to be contracted, and to be again expanded above the infolders to a position where it may engage with the infolders, with a heavy part of the templet above the infolders, and means for applying a powerful creasing pressure upon said templet, whereby the folds of the blanks may be pressed between the support and the infolders after withdrawal of the plates of the templet from the folds, and thereby fixed with a sharp fold.

8. In a machine for folding cuff-blanks or analogous articles, the combination of a support for the blanks, a templet having relatively heavy expanding and contracting plates and having thin edge portions which are adapted to bear directly upon the blanks upon said support and within edge portions of the blanks, infolders constructed to move inwardly and outwardly, whereby the edge portions of the blanks may be folded over the edge portions of the templet, means for contracting and expanding said templet, the said templet being adapted, while the infolders are in their inward position, to be contracted, and to be again expanded above the infolders to a position where it may engage with the infolders with the relatively heavy part of the templet above the infolders, and means for applying a powerful creasing pressure upon said templet, whereby the folds of the blanks may be pressed between the support and the infolders after withdrawal of the plates of the templet from the folds and thereby fixed with a sharp fold.

9. In a machine for folding cuff-blanks or analogous articles, the combination of a support for the blanks, a templet having ex-

panding and contracting plates, having relatively heavy portions and having thin edge portions which are adapted to bear directly upon the blanks upon said support and within edge portions of the blanks, infolders constructed to move inwardly and outwardly, whereby the edge portions of the blanks may be folded over the edge portions of the templet, means for contracting and expanding said templet, the said templet being adapted, while the infolders are in their inward position to be contracted, and to be again expanded above the infolders to a position beyond the normal size, so that it may engage with the infolders, with a heavy part of the templet above the infolders, and means for applying a powerful creasing pressure upon said templet, whereby the folds of the blanks may be pressed between the support and the infolders after withdrawal of the plates of the templet from the folds, and thereby fixed with a sharp fold.

10. In a machine for infolding cuff blanks or analogous articles, the combination of a support for the blanks, infolders, an expansible die or templet adapted to occupy during the normal operation of the machine a contracted position, a folding position, and a position in which it is expanded beyond its folding position, and means for restraining said templet portion from movement toward each of said expanded positions, said restraining means being adapted for operation during such normal operation of the machine, for the purpose specified.

11. A pressing mechanism for a folding machine, the same comprising a pressing member, a pivotal arm on which said member is mounted, an overhanging member having means to automatically engage with said arm when said overhanging member is lowered, and a treadle for lowering said overhanging member.

12. A folding machine having blank-supporting, fold-defining and edge-infolding members, said fold-defining members having relatively thin edge portions and relatively heavy body portions, all said members being constructed and fitted to mutually co-act in pressing the blank folds, and having means for giving the fold-defining and edge-infolding members a greater degree of relative movement toward each other than is provided during the fold-producing operation, combined with a pressure-applying means for forcing the heavy or body portions of the fold-defining member upon the edge-infolding member to produce a powerful creasing pressure between the latter and the blank-supporting member.

13. A folding machine having a blank support, an expansible templet, infolders, mechanism for limiting the expansion of said templet to a fold-defining position, for re-

tracting an edge portion of said templet from a fold of the blank operated upon and for advancing said edge portion of said templet beyond its fold-defining position, and means for forcing said templet upon said infolders while said templet remains in said last-named position, whereby the blank is pressed between said infolders and said support.

14. A folding machine having a blank support, an expansible templet, a plurality of infolders, mechanism for limiting the expansion of said templet to a fold-defining position, for contracting said templet to withdraw it from the folds of the blank operated upon and for expanding said templet beyond its fold-defining position, and means for forcing said templet upon said infolders while said templet is in said last-named position, whereby the blank is pressed between said infolders and said support.

15. In a folding machine, adjustable means for defining the folds of the blanks, and mechanism for preventing the expansion of said fold-defining means beyond their fold-defining position and for expanding them beyond said fold-defining position at will, and mechanism operating through said fold-defining means while in said last-named position for producing a powerful creasing pressure upon the folded edges of such blanks.

16. In a folding machine, means for defining the folds of the blanks, mechanism for preventing the expansion of said fold-defining means beyond their fold-defining position and for expanding them to cover the folded edges of the blanks at will, and mechanism operative through said fold-defining means for producing a creasing pressure upon such folded edges.

17. In a folding machine, an expansible templet, mechanism for preventing the expansion of said templet beyond its fold-defining position and for expanding said templet beyond said fold-defining position at will, and mechanism operative through said templet when so expanded for producing a creasing pressure upon the folded edges of the blanks.

18. In a folding machine, an expansible templet, mechanism for limiting the expansion of said templet to a fold-defining position, for contracting said templet to less than its fold-defining area and for expanding said templet beyond said fold-defining position, and mechanism operating through said templet when so expanded for producing a creasing pressure upon the folded edges of the blanks.

19. In a folding machine, an expansible templet, an infolder, means for moving said infolder inwardly over the edge of said templet to fold an edge of the blank, mechanism for preventing the expansion of said

templet beyond its fold-defining position, for withdrawing said templet from its fold-defining position and for expanding said templet beyond its fold-defining position to cover an edge of said infolder at will, and means operating through said templet when so expanded and through said infolder for producing a creasing pressure on the folded edges of the blanks.

20. In a folding machine, a support for a blank to be folded, an expansible templet, an infolder, means for moving said infolder inwardly over the edge of said templet to fold an edge of the blank, means for withdrawing said templet from its fold-defining position in a plane approximately parallel with that of said support, means for expanding said templet beyond its fold-defining position to cover an edge of said infolder, and means for forcing said infolder toward said support to produce a creasing pressure on the folds of the blank, said forcing means operating through said templet when so expanded.

21. In a folding machine, a blank support, an infolder, a fold-defining member, means for lowering and raising said fold-defining member upon and from a blank to be folded, pressing mechanism, said pressing mechanism and said fold-defining member being disconnected during the folding operation, whereby the fold-defining member may be raised and lowered independently of the pressing mechanism, and means for operatively connecting the pressing mechanism and the fold-defining member, whereby the fold of the blank may be pressed through the agency of said fold-defining member.

22. In a folding machine, a blank support, an infolder, a fold-defining member, means for lowering and raising said fold-defining member upon and from a blank to be folded, pressing mechanism, said pressing mechanism and said fold-defining member being disconnected during the folding operation, whereby the fold-defining member may be raised and lowered independently of the pressing mechanism, and automatically engageable means for operatively connecting the pressing mechanism and the fold-defining member, whereby the fold of the blank may be pressed through the agency of said fold-defining member.

23. In a folding machine, a blank support, a plurality of infolders, an expansible fold-defining member, means for lowering and raising said fold-defining member upon and from a blank to be folded, pressing mechanism, said pressing mechanism and said fold-defining mechanism being disconnected during the folding operation, whereby said fold-defining member may be raised and lowered independently of said pressing mechanism, and means for operatively connecting said pressing mechanism and said

fold-defining member, whereby the fold of the blank may be pressed through the agency of said fold-defining member.

24. In a folding machine, a blank support,
5 a plurality of infolders, an expansible fold-defining member, means for lowering and raising said fold-defining member upon and from a blank to be folded, pressing mechanism, said pressing mechanism and said fold-
10 defining mechanism being disconnected during the folding operation, whereby said fold-defining member may be raised and lowered independently of said pressing mechanism

and automatically engageable means for operatively connecting said pressing mechanism and said fold-defining member, whereby the fold of the blank may be pressed through the agency of said fold-defining member. 15

In testimony whereof I have signed this specification in the presence of two subscribing witnesses. 20

GARRY J. DORMANDY.

Witnesses:

S. CHARLES YEATON,
DONALD CAMPBELL.