

W. H. YOUNG.

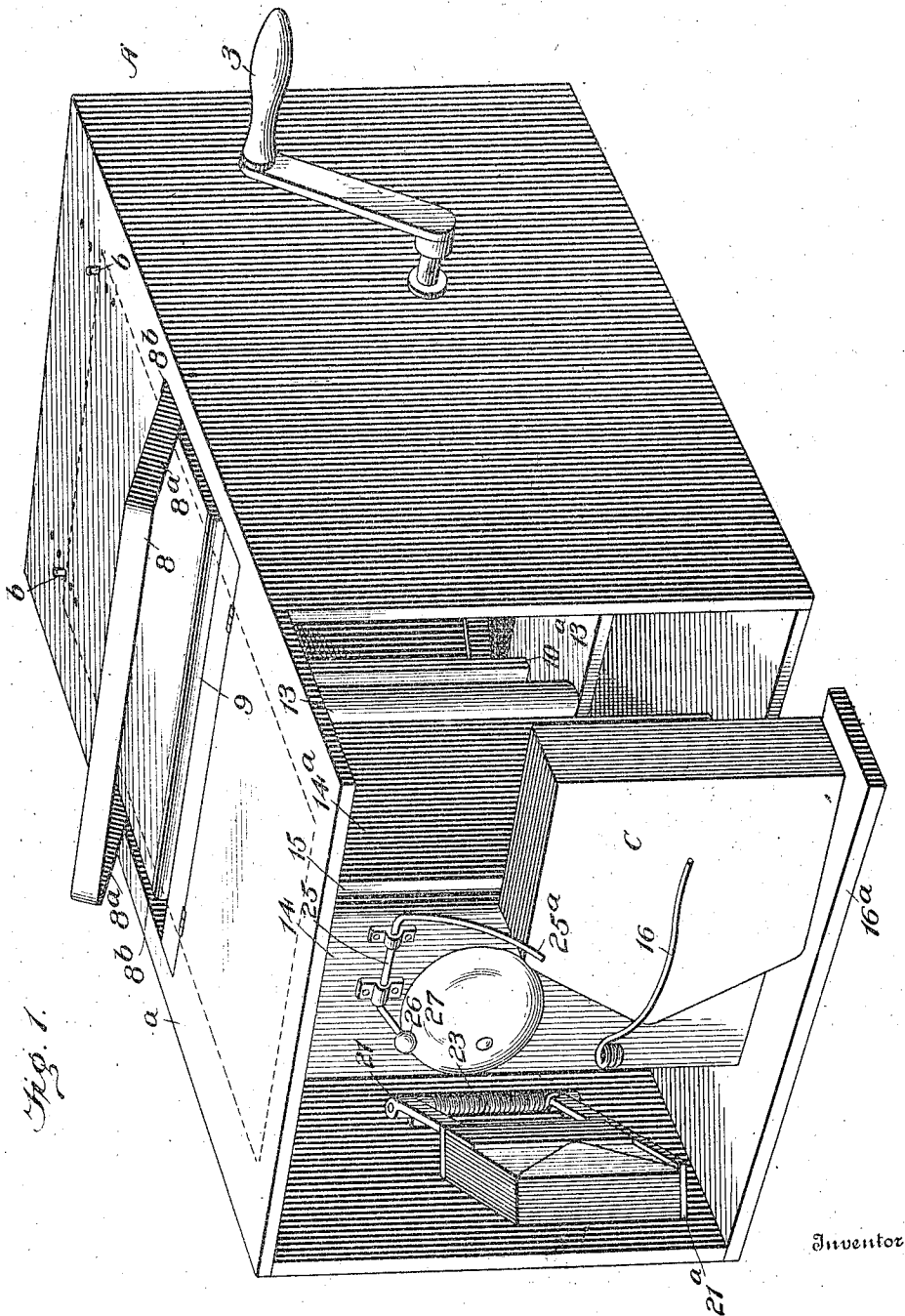
MACHINE FOR FOLDING SHEETS OF PAPER AND INSERTING THEM IN ENVELOPS.

APPLICATION FILED FEB. 28, 1907.

Patented Dec. 10, 1912

5 SHEETS—SHEET 1.

1,046,707.



Witnesses

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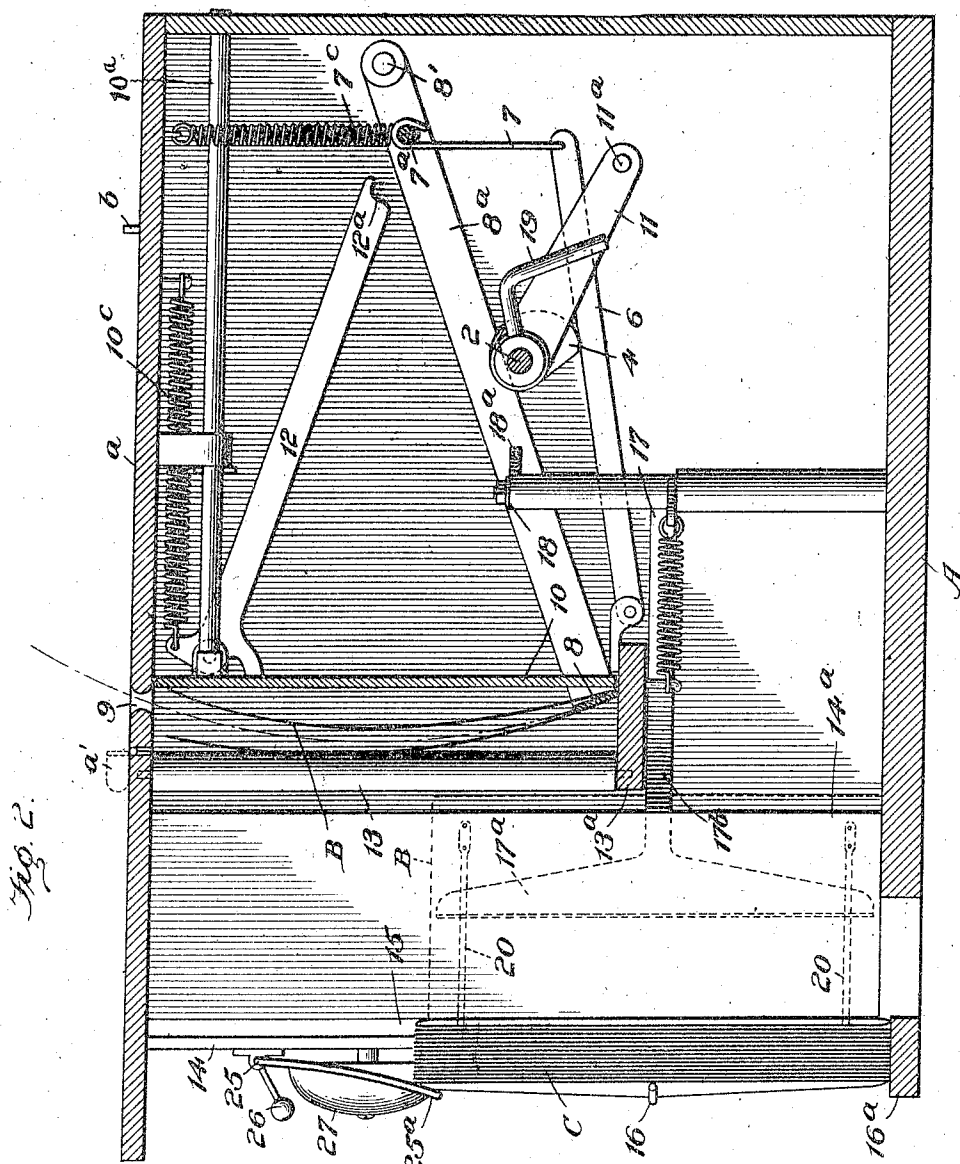
MACHINE FOR FOLDING SHEETS OF PAPER AND INSERTING THEM IN ENVELOPS.

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6 SHEETS—SHEET 2.



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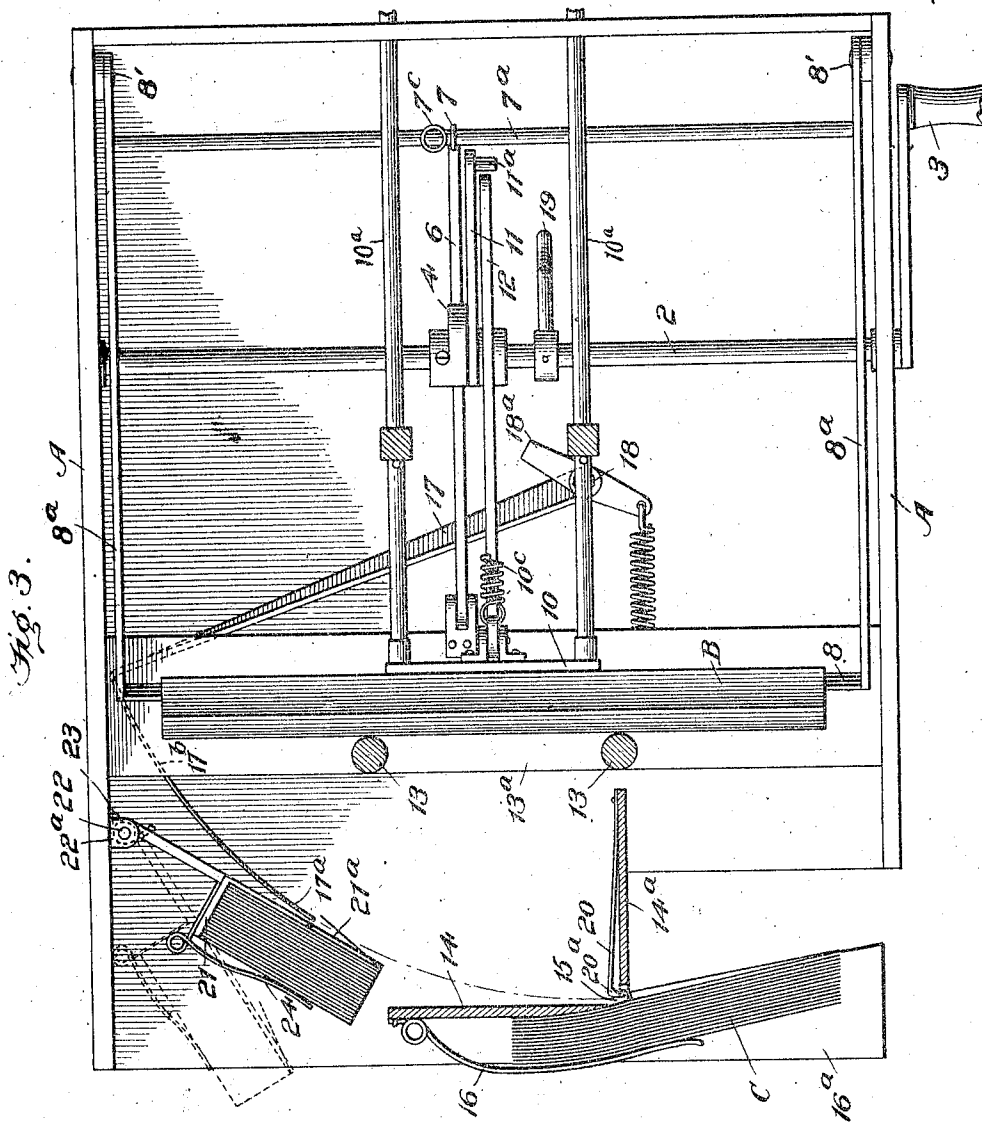
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5 SHEETS—SHEET 3.

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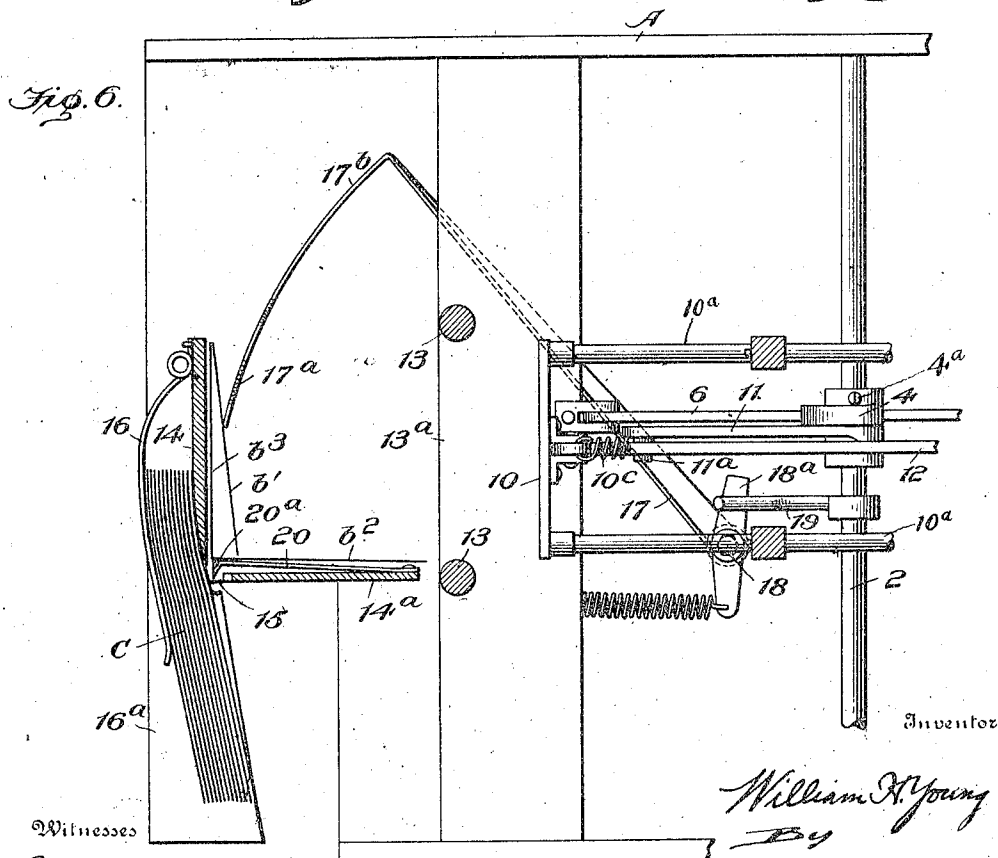
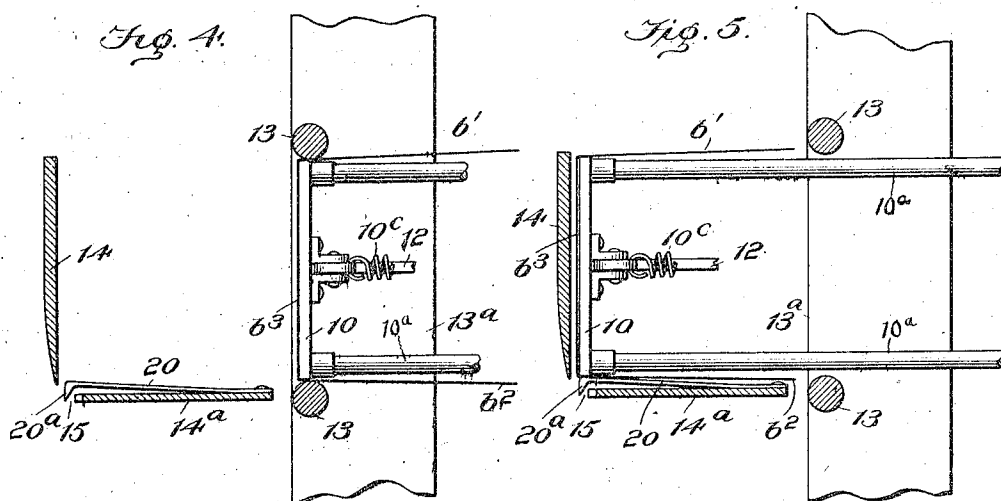
George R Bliss.

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5 SHEETS—SHEET 4.



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5 SHEETS—SHEET 5.

Fig. 7.

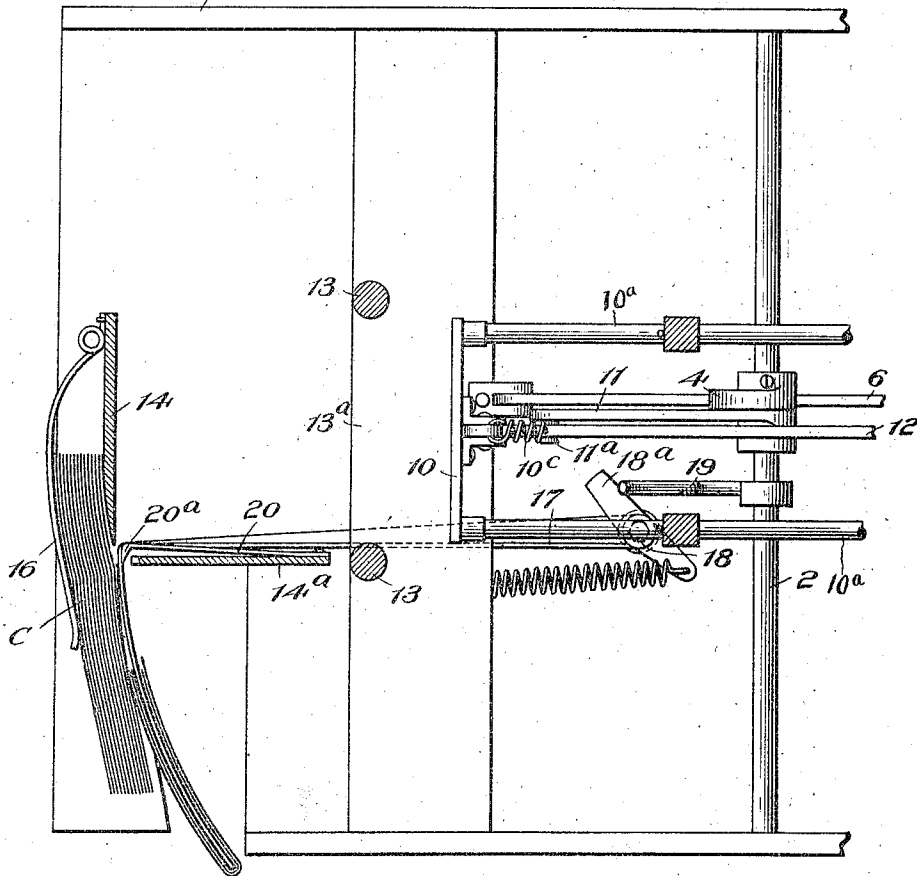


Fig. 8.

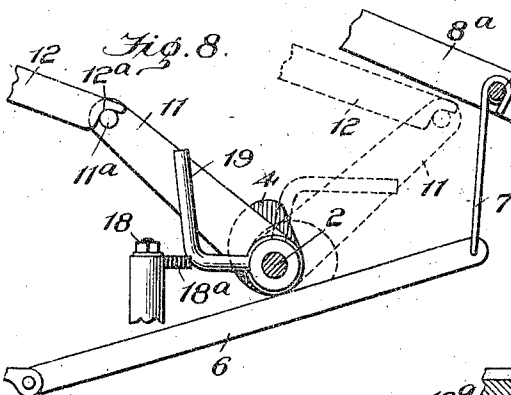
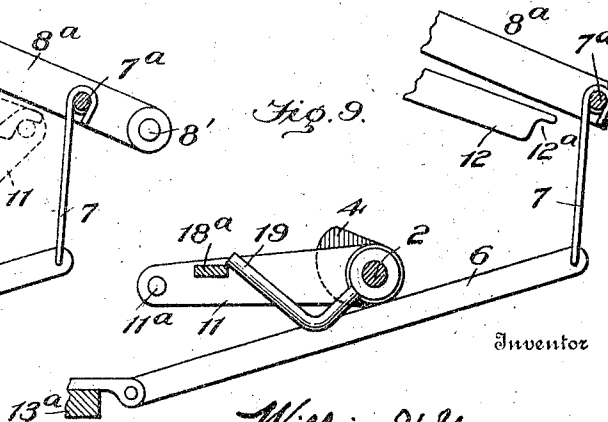


Fig. 9.



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UNITED STATES PATENT OFFICE.

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MACHINE FOR FOLDING SHEETS OF PAPER AND INSERTING THEM IN ENVELOPS.

1,046,707.

Specification of Letters Patent.

Patented Dec. 10, 1912.

Application filed February 28, 1907. Serial No. 359,757.

To all whom it may concern:

Be it known that I, WILLIAM H. YOUNG, a citizen of the United States, residing at Athens, in the county of Clarke and State of Georgia, have invented certain new and useful Improvements in Machines for Folding Sheets of Paper and Inserting Them in Envelops, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to an apparatus for folding sheets of paper and has for its object to provide a device of this character adapted to fold a sheet of paper, such as letters or circulars, and particularly for use in cases where a large number of letters are to be folded and mailed.

Another object of the invention is to provide a device for folding a letter or a sheet of paper adapted to insert the same into an envelop, and also to provide means for inserting in the envelop additional inclosures, such as a second letter or sheet of paper, or a return envelop, or both.

In the drawings—Figure 1 is a perspective view of an apparatus embodying my invention. Fig. 2 is a central longitudinal section of the apparatus, the folding blade being shown in its lowest position. Fig. 3 is a plan view of the apparatus, the top of the casing being removed. Fig. 4 is a view of a portion of the apparatus shown in Fig. 3, showing the plunger in position between the upright rollers. Fig. 5 is a view similar to Fig. 4 showing the folded sheet moved into a different position and ready to be operated upon by the filler. Fig. 6 is a view of a portion of the apparatus showing the sheet being folded. Fig. 7 is a view similar to Fig. 6 and shows the sheet inserted in an envelop. Figs. 8 and 9 are detail views showing the operating mechanism.

In the drawings A represents a casing of suitable dimensions adapted to support and inclose the folding and inserting mechanism. The top of the box is provided with a flat surface *a* on which is placed the sheet or letter B to be folded, the said top *a* being provided with adjustable stop pins *b* arranged to operate as guides for laying the said sheet or letter in proper position thereon.

2 indicates a shaft mounted in suitable bearings in the opposite sides of the casing A, one end of which extends through the side thereof and has a crank handle 3 secured thereto for rotating the said shaft.

8 indicates an oscillating folding blade extending transversely of the box and supported at its opposite ends by a pair of bars 8^a that are movable in slots 8^b in the top *a*, and pivoted to the inner faces of opposite sides of the box or casing at 8'. The top *a* is provided with a transverse elongated opening or slot 9, connecting the slots 8^b, to permit the knife 8 to pass through the top *a* and carry with it the sheet B and thereby fold it.

4 indicates a cam fixed to the shaft 2 and adapted to engage the lever 6. This lever has one end pivoted to a stationary part of the casing and its opposite end provided with a link 7 carrying a hook at its upper end, which engages with a cross rod 7^a extending transversely between the bars 8^a and at a point between the pivots 8' and the blade 8. By this construction it will be seen that by the rotation of the shaft 2, the cam 4 will engage with the lever 6 and cause the folding blade 8 to oscillate on its pivots 8', and upon the disengagement of the cam 4 with the lever 6 the folding blade will be free to move in the opposite direction. In order to return the folding blade to its normal position ready for the folding of the next sheet or letter, a spring 7^c is provided having one end fixed to the casing, and its opposite end connected to the bar 7^a. It will thus be seen that by placing a sheet or letter B on the top *a* and rotating the shaft 2 the folding blade will be caused to move downward through the transverse slot 9 in the top and carry with it the sheet B. As the sheet is drawn through the slot by the sharp edged blade the first operation of folding the said sheet is accomplished. After the edges of the sheet have been passed through the slot 9 they will spread, as shown in Fig. 2, and this will prevent the sheet from being carried upward through the slot when the folding blade is released by the cam 4 and moves upward under the action of the spring 7^c.

13^a is a transversely arranged shelf mounted within the casing and adapted to receive and support the sheet after it has been folded by the blade 8. If the blade is arranged to firmly press the paper against this shelf 13^a the sheet will thus be more sharply folded and receive a more permanent "set."

10 indicates a reciprocating plunger arranged to move longitudinally of the case

ing A, and when in normal position lies in a vertical plane a little behind the chord of the arc formed by the movement of the folding blade. The plunger 10 is provided with two rearwardly extending rods 10^a that move in suitable bearings in the rear end of the casing and operate as guides for the plunger.

12 indicates a pitman pivotally secured to the back side of the plunger, having its outer end provided with a recess 12^a.

11 indicates a crank arm fixed to the shaft 2 and provided with a pin 11^a. As the shaft 2 rotates the pin 11^a mounted at the outer end of the crank arm 11 engages with the recess 12^a of the pitman 12 and moves the plunger 10 forward until the sheet is pressed against a vertical partition 14, whereupon by the revolution of the shaft and crank arm the pin 11^a disengages with the pitman 12. Upon the disengagement of the crank from the pitman 12 a spring 10^b, having one end fixed to the casing and its opposite end to the plunger, operates to return the latter to normal position, ready to be engaged by the pin 11^a, when it has been moved around again to the point of engagement by the shaft 2.

13, 13 are a pair of bending rollers arranged parallel to each other and mounted to revolve on studs that have bearings in the shelf 13^a and in the under side of the top of the casing. The rollers are supported a suitable distance apart so that the plunger may pass between them with a small clearance.

At this point I may describe the second operation of folding the letter B. After the letter has been folded in half by the folding blade 8 and the latter is returned to normal position, the rotating crank arm 11 engages with the pitman 12 and operates to move the plunger forward, carrying with it the folded sheet B, that has been deposited in front of the plunger by the blade 8. As the plunger 10 moves forward and between the rollers 13 the latter operate to fold back the sides b', b² of the folded sheet, that extend beyond the opposite side edges of the plunger, so that the ends of the paper are bent at right angles to the portion b³ that lies in front of the plunger, the latter moving forward a sufficient distance to the front portion of the casing, so that the folded flaps of the paper sheet clear the rollers 13 in close proximity to a partition 14. As soon as the sheet is disengaged by the rollers 13 it will fall of its own weight to the bottom of the casing and the operations which will be hereafter described occur at this lower level. It is now necessary to fold the ends of the paper down flat one beneath the other and to insert the folded sheet into an envelop. For this purpose I provide a lever 17 pivoted at 18 to some part of the casing, and provided with a cam

18^a adapted to be engaged by an arm 19 on the shaft 2. The arm 19 is fixed to the shaft 2 at such point as to engage the cam 18^a at the proper instant and operate the lever 17 after the plunger 10 has been released by the crank arm 11.

17^a indicates a filler connected to the lever 17, adapted to engage one of the folded ends b' of the letter at a point just a little behind its folded edge, and operates as it moves transversely across the casing to fold that end back against the flat portion b³.

14^a indicates an upright bar or standard arranged preferably at right angles to the partition 14 but separated therefrom so as to leave an elongated opening or slot 15 between them. As the filler moves transversely across the casing, folding the flap b' down and behind the flat portion b³, it engages with the crease of the folded portion b² and forces the folded sheet through the slot 15, and as this operation takes place, the standard 14^a operates to fold back the flap b² on top of or over the folded flap b'.

C indicates the envelopes into which the folded sheets are inserted by the filler 17^a. The envelopes are supported on a base 16^a and have their flaps extended and pressed against the outer side of the partition 14. The envelopes are so arranged relative to the casing that the envelop nearest thereto has its opening in alinement with the opening or slot 15. A spring arm 16 connected to the casing operates to hold the envelopes in position on the base 16^a and to move the envelopes successively into position. As the filler 17^a folds the sheet and forces it through the slot 15 its movement is long enough to insert it into one of the envelopes which lies in the path thereof and to force the envelop with the inserted sheet or letter out from under the spring arm 16. The envelopes will be prevented from moving backward with the filler blade 17^a by engagement with the standard 14^a. When they have become freed from the filler blade 17^a they will fall onto the floor or into a suitable receptacle through the opening which is provided in the bottom of the casing.

20 indicates a pair of spring arms fixed to the casing. These arms extend in front of the standard 14^a and have their outer ends bent at right angles and slightly pointed, as indicated at 20^a, so as to extend through the slot 15 and engage the edges of the opening in the envelop. As the filler 17^a forces the folded sheet into an envelop C, it comes into sliding contact with the ends 20^a causing them to engage with the edge of the envelop and force the front and back sides thereof open slightly so that the filler may easily deposit the folded sheet into the envelop.

The filler 17^a and arm 17 are preferably connected by a relatively long rod 17^b so

that the folded sheet may be completely inserted in the envelop and the envelop moved from its position into a suitable receptacle.

25 indicates a rod rotatable in straps fixed to the partition 14. One end of the arm is provided with a striker 26 adapted to strike the bell 27, while the opposite end thereof is bent at an angle to form an arm 25^a to engage with the envelops. When all of the envelops have been filled and a new supply is needed the rod is turned or rotated in the straps by the weight of the arm 25^a and thereby causes the striker 26 to contact with the bell 27 and sound a signal, whereby the person operating the apparatus is notified to put in a new supply of envelops.

It is often desirable to insert with the folded sheet or letter a return envelop. For this purpose I provide a swinging frame 21, pivotally mounted on a vertical axle 22 that have bearings in brackets 22^a fixed to the rear of the casing. The frame 21 carries a base 21^a on which the envelops rest and are supported thereon by a spring arm 24. When it is desired to insert a return envelop in the letter to be sent, the frame 21 is swung on its pivot into a position so that the flap of the inner envelop lies in the path of the filler 17^a, as indicated in Fig. 3 which engages therewith and forces it into the folded letter by the same movement and at the same time as the flap 6^a of the letter is being folded down.

23 indicates a spring coiled about the axle 22 and arranged normally to hold the frame 21 out of operative position.

It will be understood that the three operating members on the shaft 2, that is the cam 4, crank arm 11 and arm 19 are fixed thereon relative to each other at such points as to operate the folding blade, the plunger and the filler in regular order, the movement of one following that of the other, and without interfering with each other.

When a half sheet only is to be folded and placed in the envelop, the paper is inserted by the operator through the slot 9 and allowed to drop down in front of the plunger 10 without being operated on by the folding blade 8. To facilitate the insertion of the half sheet, the top of the casing is provided with a hinged portion *a'* which may be thrown back as indicated by dotted lines in Fig. 2. It is obvious that when a half sheet is to be folded the movement of the oscillating blade 8 through the slot 9 will be very objectionable and prevent the easy insertion of the sheet. To overcome this objection the cam 4 is attached to the shaft 2 by means of the set-screw 4^a. By loosening this set-screw the cam may be slid on the shaft until it is out of engagement with the lever 6. The blade 8 will then be held in its uppermost position by the spring 7^c.

I have described the shaft 2 as rotating

and this method of operation will in a great many cases be the most desirable one. It will be noted, however, from a reference to Figs. 8 and 9 that all of these parts will operate properly and in the correct relation one to another if the shaft 2 is not rotated but rocked through an angle of approximately 180°. This method of operation will be found especially advantageous when it is desired to insert two or more different sheets in the same envelop. This may be accomplished by rocking the shaft 2 through an angle slightly less than the angle required for a complete cycle of operations. The filler blade 17^a will thus not be moved far enough to eject the envelop from the machine. This filling process may be repeated as often as desired within the capacity of the envelop. When the last sheet is inserted, the shaft is rocked through the full angle and the envelop is thus ejected from the machine.

What I claim is:—

1. In a sheet folding machine, the combination of means for turning the end parts of a sheet at angles to the central part thereof, and a single sheet folding element arranged to effect by a single engagement with the sheet and at one operation the folding of the end parts upon the central part and the inserting of the sheet thus folded into an envelop.

2. In a letter folding device, the combination of a blade for doubling the letter sheet, a plunger for bending back the opposite ends of the doubled sheet, an envelop support, and a movable blade for folding and inserting the doubled sheet into an envelop on the support and discharging the said envelop from the support at a single operation.

3. In a machine of the type specified, the combination of an envelop support, means for turning the ends of a sheet at angles to the central part thereof, and a blade adapted to engage one of the ends to fold it down on the central part, and to again engage the sheet at the crease between the other end and the central part to insert the sheet into an envelop on the support.

4. In a machine of the type specified, the combination of an envelop support, a paper support, stationary paper folding abutments, and a blade adapted to engage one end part of a sheet of paper on the paper support having its end parts turned back at an angle to the central part, the said blade operating in conjunction with the said stationary abutments to fold one end on the central part and by engagement with the sheet at the crease between the other end part and the central part to insert the sheet into an envelop on the envelop support.

5. In a machine of the type specified, the combination of a means for holding a sheet of paper having its end parts turned back at

angles relative to its central part, two stationary folding elements provided with adjacent parallel paper engaging edges and a blade adapted to move in a curved path passing through one of the end parts of the paper at a point removed from the central part, through the crease between the other end part and the central part and between said parallel edges of the stationary folding elements.

6. In a machine of the type specified, the combination of a mechanism for folding a sheet, means for positioning an envelop to receive the folded sheet, a device for inserting the folded sheet into the envelop, and mechanism for actuating the inserting device whereby it may or may not eject the envelop from the machine at the will of the operator.

7. In a machine of the type specified, the combination of a device for positioning an envelop to receive a sheet of paper, a means for supporting a sheet of paper having its ends turned back at angles relative to its sides, a blade adapted to fold the ends of the sheet down upon the central part, insert the folded sheet into an envelop and eject the envelop from the machine, and a mechanism for actuating the blade whereby its movement may be controlled to eject or not to eject the envelop at the will of the operator.

8. In a letter folding device, the combination of a pair of benders for folding the opposite ends back with respect to the central part of the sheet, a reciprocating plunger movable between the benders, a stationary folder, a reciprocating blade movable past the stationary folder, the said blade serving to fold down upon the central part one end of the sheet and to move the sheet bodily past the said stationary folder so as to fold the other end of the sheet down upon the central part, and means for operating the plunger and the blade.

9. In a sheet folding device, the combination of means for folding a sheet, a pair of rollers, a plunger for moving the folded sheet between the said rollers for folding back its opposite ends, a base for supporting a pile of envelops, a partition and a standard with a slot between them, means for folding down the said opposite ends of the sheet and forcing it through said slot and into one of the envelops, and means for feeding the envelops into position for receiving the folded sheets.

10. In a sheet folding device, the combination of means for folding a letter sheet, a pair of rollers, a plunger for moving the folded sheet between the said rollers for bending back its opposite ends, a base for supporting a pile of envelops, a partition and a standard having a slot between them, means for folding down the said opposite

ends of the sheet and forcing it through said slot and into one of the envelops, means for feeding the envelops into position for receiving the folded sheets, and means for opening an envelop as a folded sheet is inserted.

11. In a machine of the type specified, the combination of a means for supporting a bundle of envelops, a means for supporting a sheet of paper having its ends turned back at angles relative to the central part, a device for folding down the opposite ends of the sheet upon the central part and inserting the sheet into an envelop at one operation, and means for feeding the envelops into position for receiving the folded sheets.

12. In a machine of the type specified, the combination of a means for supporting a bundle of envelops, a means for supporting a sheet of paper having its ends turned back at angles relative to the central part, means for folding down the opposite ends of the sheet upon the central part and inserting the sheet into an envelop, means for feeding the envelops into position for receiving the folded sheets, and means for indicating the exhaustion of the supply of envelops.

13. In a machine of the type specified, the combination of a means for supporting a bundle of envelops, a means for supporting a sheet of paper having its ends turned back at angles relative to the central part, a device for folding down the opposite ends of the sheet onto the central part and inserting the sheet into an envelop at a single operation, means for feeding the envelops into position for receiving the folded sheets, and means for opening the envelops as a folded sheet is inserted.

14. In a machine of the type specified, the combination of means for inserting a folded sheet into an envelop, and elastically mounted pointed members adapted to open the envelop as the sheet is inserted.

15. In a machine of the type specified, the combination of a plurality of devices for supporting envelop inclosures, means for positioning an envelop to receive said inclosures, and a device for engaging an inclosure from each of said supporting devices and inserting them into an envelop at a single operation.

16. In a machine of the type specified, the combination of mechanism for folding a sheet of paper, a device for inserting the folded sheet into an envelop, and a supporting means for a second inclosure whereby it may be separately engaged by the inserting device and inserted into the envelop simultaneously with the folded sheet.

17. In a machine of the type specified, the combination of a means for folding a sheet of paper, a blade adapted to engage the sheet and insert it into an envelop, and means for supporting a bundle of second inclosures

so that one of them may be engaged by the inserting means and inserted into the envelop with the folded sheet.

18. In a machine of the type specified, the combination of mechanism for folding a sheet of paper, an inserting device adapted to engage the sheet and insert it into an envelop, means for feeding second inclosures to the inserting device whereby one of them may be separately engaged by said inserting device and inserted into the envelop simultaneously with the folded sheet, and devices whereby the feeding means may be held in or out of operative position at the will of the operator.

19. In a machine of the type specified, the combination of means for positioning an envelop to receive a sheet of paper, mechanism for folding a sheet of paper, a blade adapted to engage with the sheet, insert it into an envelop and eject the envelop from the machine, mechanism for actuating the blade whereby its movement may be controlled to eject or not to eject the envelop at the will of the operator, a device for feeding second inclosures to the blade whereby one of them may be inserted into the envelop with a folded sheet, and means whereby the feeding devices may be held in or out of operative position at the will of the operator.

20. In a sheet folding device, the combination of means for folding a letter sheet, a pair of rollers and a reciprocating plunger for bending back its opposite ends, a base for supporting a pile of envelopes, a partition and a standard arranged with a slot between them, means for folding down the said opposite ends of the sheet and forcing it through said slot and into one of the envelopes, means for feeding the envelopes into position for receiving the folded sheets, means for opening an envelop as a folded sheet is inserted, and means for supporting a pile of return envelopes arranged to be swung into position to be inserted into the other envelopes by the folding and inserting means.

21. In a letter folding device, the combination of means for turning the ends of a vertical sheet back at angles to the central part, a support for the sheet at a level below that of the turning means, and so arranged in relation thereto that the sheet may move to the said support by gravity, and means for engaging the sheet when on the said support to fold down the ends upon the central part.

22. In a letter folding device, the combination with the casing, having a top provided with a slot, of an oscillating folding blade pivoted to said casing and adapted to draw a letter sheet through said slot to fold the same, a pair of benders and a reciprocating plunger movable therebetween,

means for operating the plunger, and means for folding and inserting the sheet into an envelop.

23. In a letter folding device, the combination with the casing, having a top for supporting a letter sheet in which is provided an elongated slot, of adjustable guides for the sheet, an oscillating blade for folding the sheet, a pair of rollers, a reciprocating plunger movable between the rollers to fold back the opposite ends of the sheet, and means for folding down, one upon the other, the said opposite ends.

24. In a letter folding device, the combination of a revoluble shaft, an oscillating folding blade, a cam on said shaft for operating the blade, a reciprocating plunger, a pitman pivotally secured thereto, a crank arm carried by the shaft arranged to engage with the pitman during a portion of its movement, means for returning the plunger to normal position after the crank arm has disengaged the pitman, a partition against which the folded sheet is forced by the plunger, a standard arranged in close proximity to the said partition so as to form a slot therebetween, and means for folding down one side of the folded sheet and forcing it through the said slot to fold down the opposite side.

25. In a letter folding device, the combination with a casing having a top provided with a transverse slot, of a folding blade, a pair of bars pivoted to the casing for oscillating the said blade, a revoluble shaft, a cam on said shaft for operating the said bars, a pair of rollers for folding back the opposite ends of the folded sheet, a plunger for moving the folded sheet between the said rollers, and means for folding down flat the said opposite ends of the sheet and inserting it in an envelop.

26. In a letter folding device, the combination with a casing having a top provided with a transverse slot, of a folding blade, a pair of bars pivoted to the casing for oscillating the said blade, a revoluble shaft, a cam on said shaft for operating the said bars, a pair of rollers for folding back the opposite ends of the folded sheet, a plunger for moving the folded sheet between the said rollers, means for folding down flat the said opposite ends of the sheet and inserting it in an envelop, and means for throwing the folding blade out of operation.

27. In a sheet folding device, the combination of a revoluble shaft, a blade for folding a letter sheet in half, a cam fixed to said shaft for operating the said blade, a pair of rollers for folding back the opposite end of the sheet, a plunger movable between the said rollers, a pitman pivotally secured thereto, a crank arm fixed to the said shaft and rotatable therewith and arranged to

gage with the said pitman during a portion of its movement and to be disengaged therefrom during the other portion of its movement, means for returning the plunger to position to be moved by the said crank arm, and means for folding down the opposite ends of the sheet.

28. In a machine of the class specified, the combination of mechanism for folding sheets of paper, an envelop support, and a device adapted to successively engage a plurality of the folded sheets and successively insert them into a single envelop on the support.

29. In a machine of the class specified, the combination of mechanism for folding sheets of paper, an envelop support, a device adapted to successively engage a plurality of the folded sheets and successively insert them into a single envelop on the support, and means for so actuating said engaging and inserting device that at the will of the operator its motion may be continued to eject the envelop from the machine.

30. In a sheet folding device, the combination with a casing having a top provided with a slot, of an oscillating folding blade pivoted to the casing and adapted to draw a sheet through the slot to fold the same, a pair of benders, and a reciprocating plunger adapted to move between the benders to turn back the opposite ends of the folded sheet relative to the central part when moving in one direction and to be disengaged from the sheet when moving in the opposite direction.

31. In a sheet folding device, the combination of a means for folding a sheet back on itself, a pair of benders engaging the folded sheet when in a vertical position at transverse lines remote from the ends, and a reciprocating plunger arranged to move between the benders to turn back the ends of the sheet relative to the central part, the sheet disengaging itself from the plunger by means of gravity.

32. In a sheet folding device, two paper-engaging devices situated on two transverse lines remote from the ends of the sheet, and a reciprocating bending device adapted to pass between the engaging devices to turn the ends of the sheet back relative to the central portion when moving in one direction and to be disengaged from the sheet when moving in the other direction, the sheet disengaging itself from the plunger by means of gravity.

33. In a paper folding machine, the combination of stationary abutments, mechanism for turning the ends of a sheet at angles to the central part thereof and delivering it to a point adjacent the said abutments, and a single folding device adapted to engage one of the ends of the sheet to fold it upon the central part and to again

engage the sheet at the crease between the other end and the central part to carry the sheet between the said abutments and thereby fold the second end upon the first end.

34. In a sheet folding device, the combination of a pair of rollers, a plunger for moving the sheet between the said rollers for turning back its opposite ends, a receiving means having an abutment for the central part and an abutment for one of the end parts, and a blade for flattening down the other part in conjunction with the abutment for the central part, and the first end in conjunction with its abutment.

35. In a sheet folding device, the combination of a pair of rollers, a plunger for moving the sheet between the said rollers for turning back its opposite ends, means for supporting a pile of envelops, two abutments at angles to each other and with a slot between, means for folding down the opposite ends of the sheet and forcing it through the said slot and into an envelop, and means for feeding the envelops into position for receiving the folded sheets.

36. In a device of the class described, the combination of means for folding the sheet on itself, means for turning the ends of the folded sheet at an angle to the central part thereof, and a single means for folding said ends upon the central part of the sheet and for inserting the sheet thus folded into an envelop at one operation.

37. In a machine of the class described, the combination of a blade for doubling the sheet, sheet-engaging devices situated on two transverse lines remote from the ends of the sheet, a bending mechanism adapted to pass between the engaging devices and bend back the ends of the doubled sheet relative to the central part, and a filler for folding and inserting the sheet into an envelop and discharging the latter, at one operation.

38. In a machine of the type specified, the combination of a blade for doubling the sheet, sheet-engaging devices situated on two transverse lines remote from the ends of the sheet, a bending mechanism adapted to pass between the engaging devices and simultaneously bend back the ends of the doubled sheet relative to the central part, and a filler for folding and inserting the sheet into an envelop, at one operation.

39. In a sheet folding device, the combination of means for doubling the sheet, a pair of rollers, a plunger for moving the folded sheet between the said rollers for simultaneously turning back its opposite ends, a receiving means having an abutment for the central part and an abutment for one of the end parts, and a blade for flattening down one end part in conjunction with the abutment for the central part, and the other end in conjunction with the end abutment.

40. In a sheet folding device, the combination with the casing having a top for supporting the sheet in which is provided an elongated slot, of an oscillating blade adapted to pass through the slot to fold the sheet, a pair of rollers, a reciprocating plunger movable between the rollers to fold back the opposite ends of the sheet, and means for folding down, one upon the other, the opposite ends.

41. In a sheet folding device, the combination of a sheet support having a slot, a blade arranged to move through the slot to fold a sheet in half, means for turning back the end parts of the folded sheet relative to the central part, all of the parts of the sheet being arranged vertically, and means for folding down the end parts upon the central part, the last said folding means being positioned below the said turning means so that the sheets while arranged vertically may move from the turning means to the folding means by gravity.

42. In a machine of the type specified, the combination of a plurality of means for supporting inclosures, and a single means adapted to engage a plurality of inclosures, one from each supporting means, and insert them into an envelop by a single operation.

43. In a sheet folding device, the combination of means for folding a sheet in half, a mechanism for bending the ends of the folded sheet at angles to the central part, a

support for the said bent sheet, an envelop support, a support for folded inclosures, and a single device mounted to first remove an inclosure from the said inclosure support by engagement with a fold thereof, second to engage the bent sheet to act in conjunction with the said sheet support to fold the ends of the sheet upon the central part, and third, to insert the said inclosure and the said folded sheet simultaneously into an envelop on the said envelop support.

44. In a sheet folding device, the combination of a mechanism for bending the ends of the sheet at angles to the central part thereof, a support for the bent sheet, an envelop support, a support for return envelop inclosures, and a single device adapted to first engage the flap of a return envelop and thereby remove it from its support, second to engage the bent sheet and by cooperation with the sheet support fold the ends of the sheet upon the central part, third to simultaneously insert the said return envelop and the said folded sheet into an envelop on the said envelop support, and fourth, eject the filled envelop from the support.

In testimony whereof I affix my signature, in presence of two witnesses.

WILLIAM HENRY YOUNG.

Witnesses:

E. R. MCGREGOR,
GEO. H. THORNTON.