C. W. CAUSEY.

PAPER FOLDING MACHINE.

APPLICATION FILED DEC. 13, 1912.

1,094,304.

Patented Apr. 21, 1914.

3 SHEETS—SHEET 1.

Fig. 1.

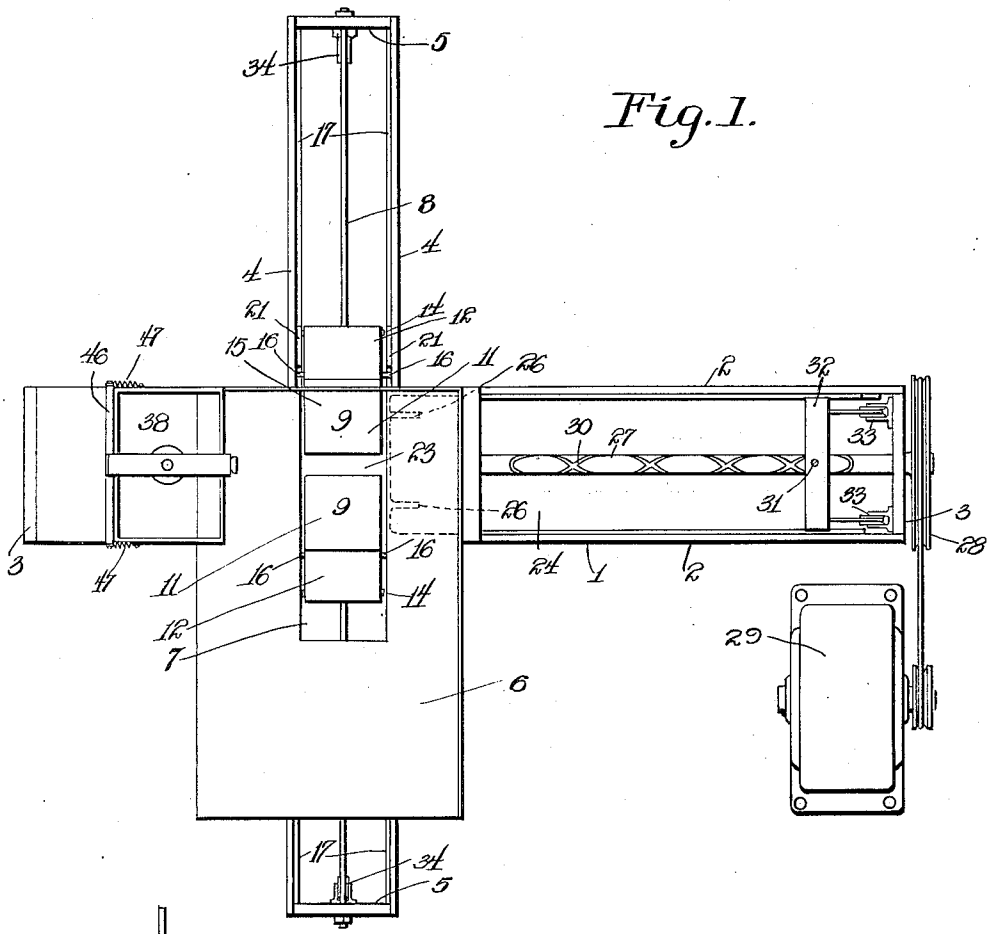
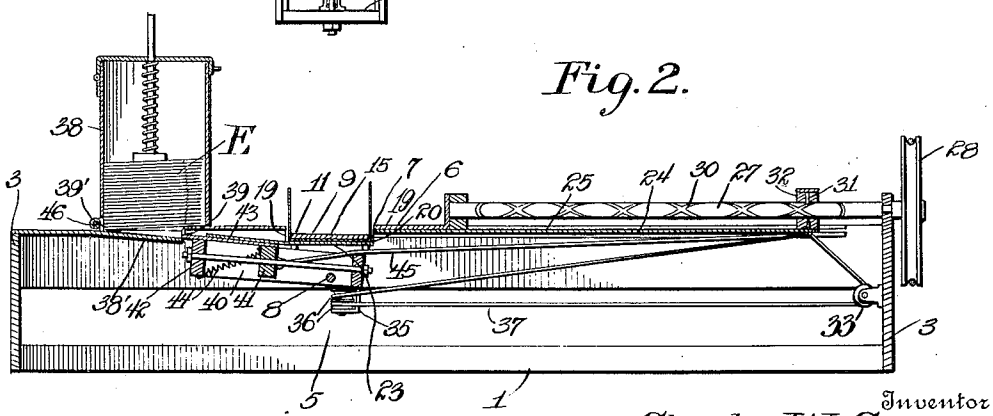


Fig. 2.



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Witnesses

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3 SHEETS—SHEET 2.

Fig. 3.

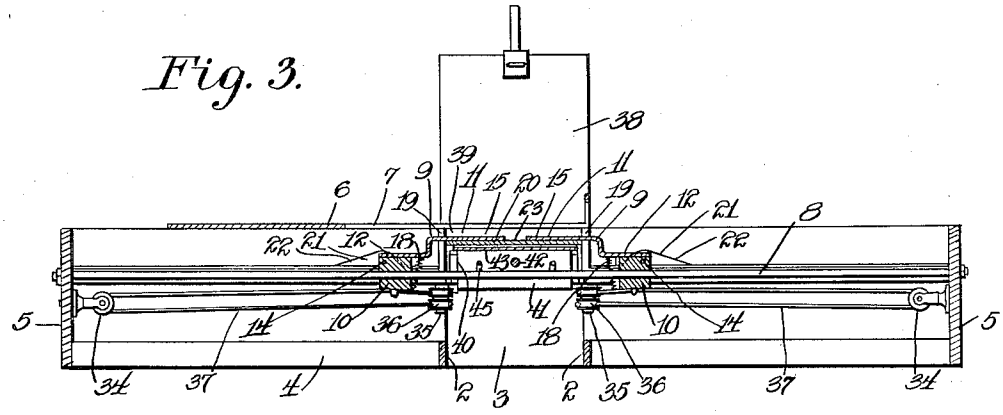
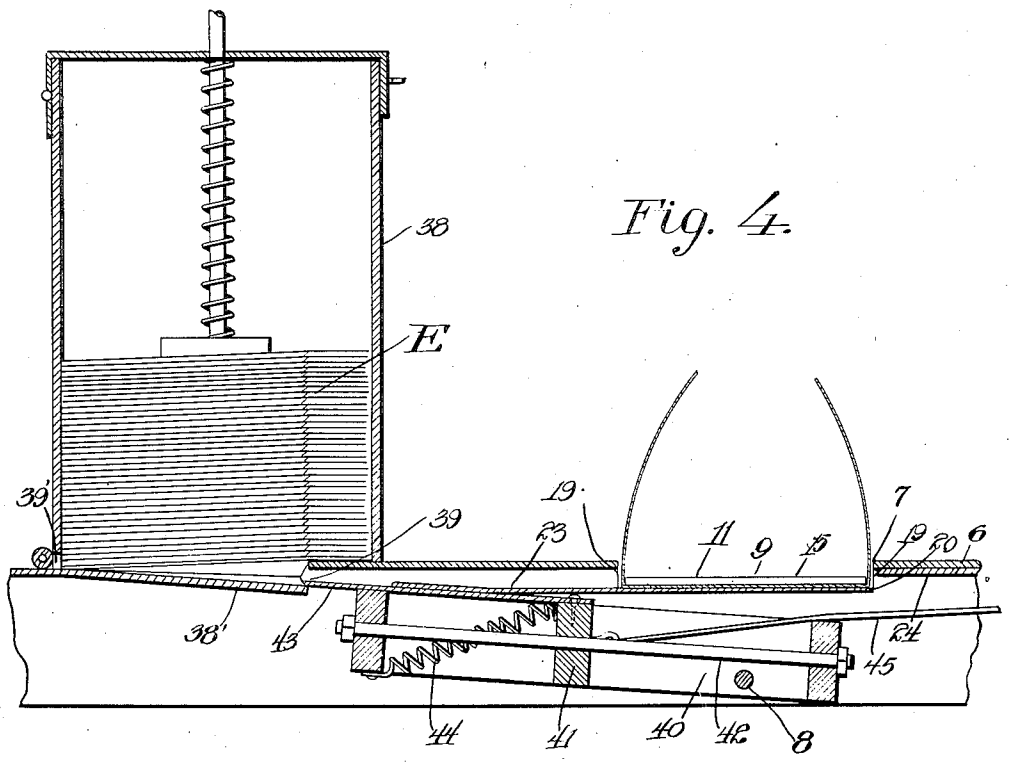


Fig. 4.



Witnesses

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3 SHEETS—SHEET 3.

Fig. 5.

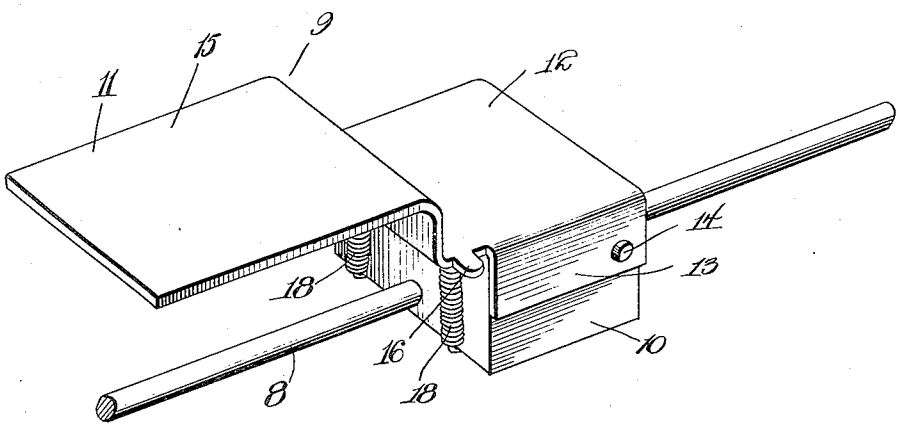
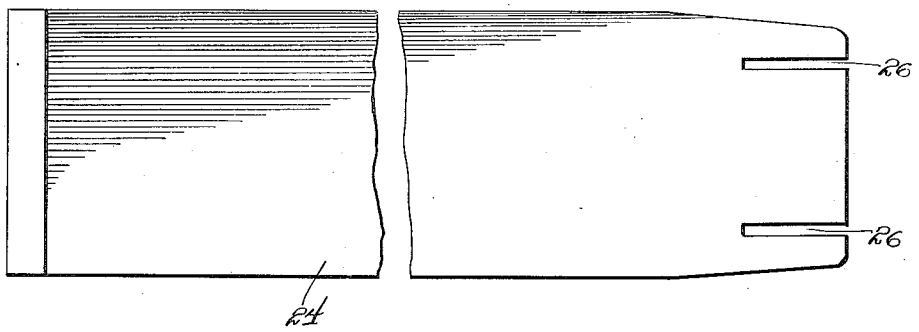


Fig. 6.



Witnesses

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UNITED STATES PATENT OFFICE.

CHARLES W. CAUSEY, OF SAN ANTONIO, TEXAS.

PAPER-FOLDING MACHINE.

1,094,304. Specification of Letters Patent. Patented Apr. 21, 1914.

Application filed December 13, 1912. Serial No. 736,585.

To all whom it may concern:

Be it known that I, CHARLES W. CAUSEY, a citizen of the United States, residing at San Antonio, in the county of Bexar and State of Texas, have invented new and useful Improvements in Paper-Folding Machines, of which the following is a specification.

This invention relates to improvements in paper folding machines and has particular application to a machine for folding letters and subsequently depositing such letters within envelops.

In carrying out the present invention, it is my purpose to provide a machine of the type set forth whereby letters may be rapidly and neatly folded and subsequently disposed within envelops and wherein the various phases of the folding operation will be carried on in an even and uniform manner without mutilating the paper.

It is also my purpose to provide a machine of this class wherein the letters after being folded will be neatly and effectively placed within envelops and the latter containing the letters subsequently discharged from the machine so that the envelops containing the letters may be conveyed to any convenient or appropriate place.

Furthermore, I aim to provide a machine of the class described which will be entirely automatic in action and which will embrace the desired features of simplicity, efficiency, durability and convenience coupled with cheapness of cost in manufacture and marketing and which when installed may be maintained at a minimum expense.

With the above and other objects in view, the invention consists in the construction, combination and arrangement of parts hereinafter set forth in and falling within the scope of the claims.

In the accompanying drawings; Figure 1 is a top plan view of a machine constructed in accordance with the present invention. Fig. 2 is a longitudinal sectional view through the same. Fig. 3 is a transverse sectional view thereof. Fig. 4 is an enlarged fragmentary sectional view showing the envelop opening device. Fig. 5 is a detail perspective view of one of the main folders, and Fig. 6 is a broken plan view of the supplemental folder and injector removed from the machine.

Referring now to the accompanying drawings in detail, the numeral 1 indicates the main or supporting frame of the machine, which, in the present instance, comprises longitudinal bars 2 spaced apart in parallel relation and suitably fastened at their opposite ends to end pieces 3; and transverse bars 4 spaced apart in parallelism and intersecting the longitudinal bars 2 at right angles, the opposite ends of the transverse bars being appropriately fastened to end pieces 5, 5. It is conceivable, however, that any other suitable form of supporting frame may be employed. Appropriately fastened to the upper edges of the longitudinal and transverse bars at the point of intersection of such bars and extending laterally or outwardly of one side of the longitudinal bars is a plate or the like constituting a table 6 on which the letter or other paper to be folded is placed. This table 6 is formed with a longitudinal slot 7 which extends for the major portion of the length of the table and opens into the ways formed by the longitudinal and transverse bars of the frame, while arranged between the transverse bars 4 of the frame approximately centrally thereof is a longitudinally extending rod 8 forming a support and guide for the main folders of the machine. These main folders are indicated at 9, 9 and as shown are disposed at the opposite sides of the table 6 and are designed to move toward and away from the table. In the present instance, each main folder 9 is carried by a block 10 formed with a bore through which is passed the rod 8, and comprises a finger 11 having a base portion 12 provided with downturned edges 13 embracing the opposite sides of the block 10 and formed with apertures alining with a bore in the block to receive a pivot pin 14. Offset from the base portion and formed integral therewith and disposed in a plane parallel with that of the base portion is the working portion 15 of the finger, while extending outwardly from the opposite side edges of the base portion 12 of each finger are lugs 16 resting upon guide strips 17 secured to the inner surfaces of the transverse bars. In the present instance, coiled contractile springs 18, 18 are employed to hold the fingers in normal position, that is, to say, in a horizontal plane, one end of each spring being secured to the base portion of the respective finger while the opposite end thereof is made fast to the adjacent part of the block carrying the finger. The top edge portions of the longi-

tudinal bars 2 that are confined between the transverse bars 4 are cut away as at 19, 19 to form what may be termed a folding groove 20 contiguous the adjacent portion of the longitudinal slot 7 in the table 6, while adjacent to the opposite ends of the groove 20 and pivotally secured to the inner sides of the transverse bars 4 are shoes 21, 21 provided with inclined surfaces 22 merging into the horizontal surfaces of the guide strips 17. Thus, when the blocks 10, 10 are moved inwardly or toward one another and the table 6, the lugs 16 on the base portions of the fingers of the folders ride along the guide strips 17 and onto the inclined surfaces 22 of the shoes 21 thereby enabling the working portions of the folders to ride up above the groove 20 in the table.

Previous to the folders reaching their limit of inward movement, the lugs 16 ride off of the relatively high ends of the shoes 21 and drop onto the guide strips 17 whereby the working portions of the folders drop into the groove 20. The bottom of this groove is preferably formed by a layer of felt or other suitable material 23 which spans the space between the longitudinal bars at this point and has its opposite ends suitably fastened to the outer surfaces of such bars.

From the structure so far described, it will be readily apparent that a sheet of paper placed upon the table 6 and spanning the groove 20 will have the intermediate portion thereof engaged by the folders and drawn down into the groove, while the opposite end portions will stand upright or vertically, as clearly illustrated in Fig. 2, thus initiating the folding operation.

In order to complete the folding operation, I employ a supplemental folder which traverses a path at right angles to the path of movement of the main folders and which intersects the path of travel of the main folders at the groove 20. In the embodiment of my invention selected for illustrative purposes, this suplemental folder is in the form of a substantially rectangular metallic strip 24 having the opposite longitudinal edges thereof adapted for sliding movement within grooves 25 formed in the inner surfaces of the longitudinal bars 1 at one end of the table 6, while the working end of the strip constituting the supplemental folder is split as at 26 to facilitate the folding operation and eliminate mutilation of the paper which might occur if the said end of the strip were otherwise formed. As clearly shown in the drawings, this supplemental folder is designed to slide back and forth between the longitudinal bars of the supporting frame and moves across the groove 20 at right angles to the path of movement of the main folders 9, 9 and is also designed to be reciprocated back and forth within the grooves 25 at properly timed intervals with respect to the movement of the main folders.

Any suitable mechanism may be employed for operating the main and supplemental folders. In the present instance, I employ a driving mechanism of a shaft 27 arranged longitudinally between the longitudinal bars 2 of the main frame at the end of the table 6 with the supplemental folder and having the opposite ends thereof journaled in suitable bearings appropriately secured to the main frame. Upon one end of this shaft is keyed or otherwise fastened a driving pulley 28 belted up to a suitable driving motor, such, for example, as an electric motor 29, while the major portion of the shaft 27 between the longitudinal bars of the frame is formed with relatively reversed spiral grooves 30 designed to receive one end of a pin 31 carried by the wall of an opening in a cross head 32, the shaft being passed through the opening in the cross head. This cross head is suitably fastened to the free end of the supplemental folder, as clearly illustrated in Fig. 2. Thus, in the rotary motion of the shaft a continuous reciprocating or rectilinear movement will be imparted to the cross head 32 and consequently the supplemental folder. Sheave wheels 33 are suitably secured to the end piece 3 at the driving end of the longitudinal bars of the frame and a sheave 34 is suitably fastened to the inner surface of each end piece 5, 5 of the transverse bars. Depending from the lower edge of each longitudinal bar 2 at the point of intersection of the transverse bars is a bracket 35 carrying a pair of guide rollers 36. Trained over each sheave wheel 33 and the sheave 34 at the respective end of the transverse bars is a belt 37 having the opposite ends thereof secured to the lower side of the supplemental folder below the cross head 32, while one run of each belt is securely fastened to the lower surface of the block 10 of the respective main folder, the belts being passed around the respective guide rollers 36. When the cross head 32 is at the limit of its outward movement, the main folders 9, 9 are resting upon the lower wall of the groove 20 and the sheet of paper being folded has the end portions thereof extending upwardly, while the working end of the supplemental folder is out of the groove 20 and disposed adjacent to one side thereof. In the continued rotation of the shaft the direction of movement of the cross head, and consequently that of the supplemental folder, is reversed so that the working end of the supplemental folder now enters the groove 20 beneath the table 6 and over the main folders 9, 9. In this movement of the supplemental folder, the adjacent upstanding end portion of the paper is folded down

over the working portions of the main folders and onto the central portion of the sheet of paper while, when the working end of the supplemental folder reaches the folding line at the junction of the central portion with the other end portion of the paper, the main folders having receded from the groove 20, the paper is carried beneath the table and the adjacent portion of the latter coöperates with the supplemental folder and completes the folding of the sheet. Thus, the folding of the sheet of paper is completed.

The supplemental folder in addition to functioning as a folder acts also as an injector whereby the folded sheet may be deposited within an envelop. The supplemental folder is relatively long as compared with the length of the main folders so that the former may carry out this dual function, while an envelop magazine 38 is suitably secured to the top edges of the longitudinal bars 2 at the side of the table 6 opposite from the driving shaft 27. This magazine has a portion of the bottom wall thereof dropped as at 38′ and at the opposite longitudinal edges of such dropped portion entrance and exit or discharge slots 39, 39′, each of a length corresponding to the width of the supplemental folder, respectively are formed, while the remaining or elevated portion of the lower wall of the magazine is of a width approximately equal to the width of the flap or tongue of the envelop at its greatest point and in the continued movement of the supplemental folder the working end thereof enters the magazine by way of the entrance slot therein and deposits the folded letter within the envelop and subsequently carries both the letter and the envelop out of the magazine by way of the exit or discharge slot therein. The envelops, designated at E, are of a length equal to the width of the folded paper and placed in the magazine with the flaps open and with the address side up, the flaps resting upon the higher portion of the bottom wall of the magazine, while the bodies of the envelops are supported by the dropped portion of such bottom wall, as clearly illustrated in Fig. 2. Suitable means is provided whereby the bottom envelop is opened to facilitate the passage of the letter and the adjacent end of the supplemental folder thereinto. This means, in the present form of my invention, comprises a small rectangular frame 40 one end of which is pivoted upon the rod 8 between the longitudinal bars 3 of the frame and a block 41 slidably mounted upon a bolt 42 disposed approximately centrally of the rectangular frame 40 and extending longitudinally thereof, the opposite ends of the bolt being passed through the end bars of the frame. Secured to this block 41 is one end of a plate 43 which extends into the envelop magazine by way of the entrance slot 39 and below the elevated or higher portion of the bottom wall thereof. Contractile springs 44 each have one end secured to the block 41 and the opposite end fastened to one of the end bars of the rectangular frame 40 and these springs act to hold the plate 43 normally projected, that is, to say, at its limit of inward movement within the envelop magazine, while connected to the opposite sides of the block 41 are straps 45 the free ends of which are fastened to the under surface of the supplemental folder below the cross head 32 so that when the latter has reached its limit of outward movement under the action of the driving shaft, the plate 43 will be moved outwardly of the envelop magazine and swung in an upward direction and in contact with the under side of the higher portion of the bottom wall of the magazine incident to the frame 40 being pivoted upon the rod 8. When the cross head 32 travels in the opposite or reverse direction, the block 41 on the frame 40 is relieved of the influence of the cross head and the springs 44 react and restore the plate to its normal position thereby sliding the plate into the respective envelop. This action of the plate 43 brings the lower wall of the envelop into contact with the dropped portion of the lower wall of the magazine, while the tongue or flap of the envelop remains in engagement with the higher portion of such wall. Consequently, the envelop is in such a condition as to nicely receive the folded letter forced thereinto by the working end of the supplemental folder. Immediately succeeding the movement of the supplemental folder into the envelop, the latter under the action of such folder is carried out of the magazine by way of the exit or discharge slot 39′ thereof and may be deposited onto a suitable conveyer or otherwise moved out of the way of the following envelop and letter. To prevent the envelop from reëntering the magazine when the direction of travel of the supplemental folder is reversed and to avoid withdrawal of the letter from the envelop incident to this reverse movement of the supplemental folder, I employ, in this case, a roller 46 which bears against one wall of the exit or discharge slot of the magazine and is held in contact therewith by means of tension springs 47 secured to the opposite ends of the roller.

My invention, as shown and described, is particularly adapted for imparting three folds to a sheet of letter or other paper and subsequently depositing the folded letter within an envelop the paper being of a width substantially equal to that of the envelops, and it is to be understood that the sizes or dimensions of the various folders and other corresponding parts of the ma-

chine may be varied or changed to adapt the machine to paper of various widths. Any suitable or appropriate mechanism may be employed for feeding the sheets to the table for folding.

It will be understood that different forms of driving mechanisms may be employed for driving the various folders of the machine and in all cases the folders are, of course, so timed relatively to one another as to operate properly in the different phases of the folding operation.

While I have herein shown and described one preferred form of my invention by way of illustration, I desire it to be understood that I do not limit or confine myself to the precise details of construction herein described and delineated, as modification and variation may be made within the scope of the claims and without departing from the spirit of the invention.

I claim:

1. In a machine of the class described, a table adapted to hold a sheet of paper and provided with a folding groove, folders disposed at the opposite sides of said table and adapted to move toward the same to fold the paper thereon, means for elevating said folders above said folding groove, means for returning said folders to normal position to throw the same into the folding groove whereby the folding of the paper may be initiated, a magazine designed to contain a quantity of envelops disposed adjacent to said table, a supplemental folder and injector movable toward said table and across the folding groove therein and designed to act upon the paper to complete the folding thereof and subsequently carry the folded sheet into said magazine and into an envelop therein, means for opening said envelop previous to the supplemental folder and injector entering said magazine, and means common to all of said folders and said last means for operating the same.

2. In a machine of the class described, a horizontal table adapted to hold a sheet of paper and provided with a folding groove, folders disposed at the opposite sides of said table and movable horizontally toward and away from the same and adapted to enter the folding groove to initially fold the paper therein, a magazine designed to contain a quantity of envelops disposed adjacent to said table, and a supplemental folder and injector movable horizontally toward said table and across the folding groove therein and designed to act upon the paper to complete the folding thereof and subsequently carry the folded sheet into said magazine and into an envelop therein.

3. In a machine of the class described, a horizontal table adapted to hold a sheet of paper and provided with a folding groove, folders disposed at the opposite sides of said table and movable horizontally toward and away from the same and adapted to enter the folding groove to initially fold the paper therein, a magazine designed to contain a quantity of envelops disposed adjacent to said table, a supplemental folder and injector movable horizontally toward said table and across the folding groove therein and designed to act upon the table to complete the folding thereof and subsequently carry the folded sheet into said magazine and into an envelop therein, and means for opening said envelop previous to the supplemental folder and injector entering the magazine.

4. In a machine of the class described, a horizontal table adapted to hold a sheet of paper and provided with a folding groove, folders disposed at the opposite sides of said table and movable horizontally toward and away from the same and adapted to enter the folding groove to initially fold the paper therein, a magazine designed to contain a quantity of envelops disposed adjacent to said table, a supplemental folder and injector movable horizontally toward said table and across the folding groove therein and designed to act upon the paper to complete the folding thereof and subsequently carry the folded sheet into said magazine and into an envelop therein, means for opening said envelop previous to the supplemental folder and injector entering the magazine, and means connecting said last-named means with said supplemental folder whereby the latter will operate said opening means.

5. In a machine of the class described, a horizontal table adapted to hold a sheet of paper and provided with a horizontal folding groove, folders disposed at the opposite sides of said table and movable horizontally toward and away from the same and adapted to enter the folding groove to initially fold the paper therein, a magazine designed to contain a quantity of envelops disposed adjacent to said table, a supplemental folder and injector movable horizontally toward said table and across the folding groove therein and designed to act upon the paper to complete the folding thereof and subsequently carry the folded sheet into the magazine and into an envelop therein, means adapted to enter said magazine and open the respective envelop therein previous to the supplemental folder and injector entering said magazine, and means for operating said folders and said last-named means.

6. In a machine of the class described, a table adapted to hold a sheet of paper and provided with a folding groove, folders disposed at the opposite sides of said table and adapted to move toward the same to fold the paper thereon, means disposed in the path of movement of said folders for elevating

the same above said folding groove, means for returning said folders to normal position to throw the same into the folding groove whereby the folding of the paper will be initiated, a magazine designed to contain a quantity of envelops disposed adjacent to said table, and a supplemental folder and injector movable toward said table and across the folding groove therein and designed to act upon the paper to complete the folding thereof and subsequently carry the folded sheet into said magazine and into an envelop therein.

7. In a machine of the class described, a table adapted to hold a sheet of paper and provided with a folding groove, folders disposed at the opposite sides of said table and adapted to move toward the same to fold the paper thereon, means disposed in the path of movement of said folders for elevating the same above said folding groove, means for returning said folders to normal position to throw the same into the folding groove whereby the folding of the paper will be initiated, a magazine designed to contain a quantity of envelops disposed adjacent to said table, a supplemental folder and injector movable toward said table and across the folding groove therein and designed to act upon the paper to complete the folding thereof and subsequently carry the folded sheet into said magazine and into an envelop therein, and means for opening said envelop previous to said supplemental folder and injector entering said magazine.

8. In a machine of the class described, a table adapted to hold a sheet of paper and provided with a folding groove, folders disposed at the opposite sides of said table and adapted to move toward the same to fold the paper thereon, means disposed in the path of movement of said folders for elevating the same above said folding grooves, means for returning said folders to normal position to throw the same into the folding groove whereby the folding of the paper will be initiated, a magazine designed to contain a quantity of envelops disposed adjacent to said table, a supplemental folder and injector movable toward said table and across the folding groove therein and designed to act upon the paper to complete the folding thereof and subsequently carry the folded sheet into said magazine and into an envelop therein, means for opening said envelop previous to said supplemental folder and injector entering said magazine, and connections between said last-named means and supplemental folder and injector.

9. In a machine of the class described, a table adapted to hold a sheet of paper and provided with a folding groove, folders disposed at the opposite sides of said groove and adapted to move toward the same to fold the paper thereon, horizontal trackways for said folders, means contiguous said trackways and in the path of movement of said folders for elevating the latter, means for returning said folders to normal position to throw the same into the folding groove whereby the folding of the paper may be initiated, a magazine designed to contain a quantity of envelops disposed adjacent to said table, and a supplemental folder and injector movable toward said table and across the folding groove therein and designed to act upon the paper to complete the folding thereof and subsequently carry the folded sheet into said magazine and into an envelop therein.

10. In a machine of the class described, a table adapted to hold a sheet of paper and provided with a folding groove, folders disposed at the opposite sides of said groove and adapted to move toward the same to fold the paper thereon, horizontal trackways for said folders, means contiguous said trackways and in the path of movement of said folders for elevating the latter, means for returning said folders to normal position to throw the same into the folding groove whereby the folding of the paper may be initiated, a magazine designed to contain a quantity of envelops disposed adjacent to said table, a supplemental folder and injector movable toward said table and across the folding groove therein and designed to act upon the paper to complete the folding thereof and subsequently carry the folded sheet into said magazine and into an envelop therein, and means for opening said envelop previous to the supplemental folder and injector entering said magazine.

11. In a machine of the class described, a table adapted to hold a sheet of paper and provided with a folding groove, folders disposed at the opposite sides of said groove and adapted to move toward the same to fold the paper thereon, horizontal trackways for said folders, means contiguous said trackways and in the path of movement of said folders for elevating the latter, means for returning said folders to normal position to throw the same into the folding groove whereby the folding of the paper may be initiated, a magazine designed to contain a quantity of envelops disposed adjacent to said table, a supplemental folder and injector movable toward said table and across the folding groove therein and designed to act upon the paper to complete the folding thereof and subsequently carry the folded sheet into said magazine and into an envelop therein, means for opening said envelop previous to the supplemental folder and injector entering said magazine, and connections between said last means and supplemental folder and injector.

12. In a machine of the class described, a

table adapted to hold a sheet of paper and provided with a folding groove, folders disposed at the opposite sides of said groove and adapted to move toward the same to fold the paper thereon, horizontal trackways for said folders, means contiguous said trackways and in the path of movement of said folders for elevating the latter, means for returning said folders to normal position to throw the same into the folding groove whereby the folding of the paper may be initiated, a magazine designed to contain a quantity of envelops disposed adjacent to said table, a supplemental folder and injector movable toward said table and across the folding groove therein and designed to act upon the paper to complete the folding thereof and subsequently carry the folded sheet into said magazine and into an envelop therein, means for opening said envelop previous to the supplemental folder and injector entering said magazine, connections between said last means and supplemental folder and injector, and means common to all of said folders for operating the same.

13. In a machine of the class described, a table adapted to hold a sheet of paper and provided with a folding groove, folders disposed at the opposite sides of said table and adapted to move toward and away from the same and enter said folding groove to initially fold the paper therein, a magazine designed to contain a quantity of envelops disposed adjacent to said table and having a portion of the bottom wall thereof dropped to form an entrance slot, and formed with an exit slot, a supplemental folder and injector movable toward said table and across the folding groove therein and designed to act upon the paper to complete the folding thereof and subsequently carry the folded sheet into the magazine by way of the entrance slot and into an envelop therein, and means movable into said magazine by way of the entrance slot therein for opening the lowermost envelop previous to the supplemental folder and injector entering said magazine.

14. In a machine of the class described, a table adapted to hold a sheet of paper and provided with a folding groove, folders disposed at the opposite sides of said table and adapted to move toward and away from the same and enter said folding groove to initially fold the paper therein, a magazine designed to contain a quantity of envelops disposed adjacent to said table and having a portion of the bottom wall thereof dropped to form an entrance slot, and formed with an exit slot, a supplemental folder and injector movable toward said table and across the folding groove therein and designed to act upon the paper to complete the folding thereof and subsequently carry the folded sheet into the magazine by way of the entrance slot and into an envelop therein, and means movable into said magazine by way of the entrance slot therein for opening the lowermost envelop previous to the supplemental folder and injector entering said magazine with the folded sheet.

15. In a machine of the class described, a table adapted to hold a sheet of paper and provided with a folding groove, folders disposed at the opposite sides of said table and movable toward and away from the same and adapted to enter the folding groove to initially fold the paper therein, a magazine designed to contain a quantity of envelops disposed adjacent to said table and having a portion of the bottom wall thereof dropped to form an entrance slot, and formed with an exit slot, and a supplemental folder and injector movable toward and away from said table and adapted, in its movement toward the table, to cross the folding groove therein and act upon the paper to complete the folding thereof and subsequently carry the folded sheet into said magazine and into an envelop therein and then carry the envelop and sheet out of the magazine by way of the exit slot.

16. In a machine of the class described, a table adapted to hold a sheet of paper and provided with a folding groove, folders disposed at the opposite sides of said table and movable toward and away from the same and adapted to enter the folding groove to initially fold the paper therein, a magazine designed to contain a quantity of envelops disposed adjacent to said table and having a portion of the bottom wall thereof dropped to form an entrance slot, and formed with an exit slot, a supplemental folder and injector movable toward and away from said table and adapted, in its movement toward said table, to cross the folding groove therein and act upon the paper to complete the folding thereof and subsequently carry the folded sheet into said magazine and into an envelop therein and then carry the envelop and sheet out of the magazine by way of the exit slot, and means adapted to enter said magazine by way of the entrance slot therein to open the lowermost envelop previous to the supplemental folder and injector entering said magazine with the folded sheet.

17. In a machine of the class described, a table adapted to hold a sheet of paper and provided with a folding groove, folders disposed at the opposite sides of said table and movable toward and away from the same and adapted to enter the folding groove to initially fold the paper therein, a magazine designed to contain a quantity of envelops disposed adjacent to said table and having a portion of the bottom wall thereof dropped to form an entrance slot, and formed with

an exit slot, a supplemental folder and injector movable toward and away from said table and adapted, in its movement toward said table, to cross the folding groove therein and act upon the paper to complete the folding thereof and subsequently carry the folded sheet into said magazine and into an envelop therein and then carry the envelop and sheet out of the magazine by way of the exit slot, means adapted to enter said magazine by way of the entrance slot, therein to open the lowermost envelop previous to the supplemental folder and injector entering said magazine with the folded sheet, a connection between said last means and supplemental folder and injector whereby said last-named means will be withdrawn from the magazine when the supplemental folder reaches the limit of its outward movement, and means for throwing said last-named means into the magazine after the same has been relieved of the influence of said supplemental folder and injector.

18. In a machine of the class described, a table adapted to hold a sheet of paper and provided with a folding groove, folders disposed at the opposite sides of said table and movable toward and away from the same and adapted to enter the folding groove to initially fold the paper therein, a magazine designed to contain a quantity of envelops disposed adjacent to said table and having a portion of the bottom wall thereof dropped to form an entrance slot, and formed with an exit slot, a supplemental folder and injector movable toward and away from said table and adapted, in its movement toward the table, to cross the folding groove therein and act upon the paper to complete the folding thereof and subsequently carry the folded sheet into said magazine and into an envelop therein and then carry the envelop and sheet out of the magazine by way of the exit slot, means for opening said envelop previous to the supplemental folder and injector entering said magazine and carrying the folded paper therein, said means comprising a pivoted frame, a block slidably mounted within said pivoted frame, and a plate carried by said block.

19. In a machine of the class described, a table adapted to hold a sheet of paper and provided with a folding groove, folders disposed at the opposite sides of said table and movable toward and away from the same and adapted to enter the folding groove to initially fold the paper therein, a magazine designed to contain a quantity of envelops disposed adjacent to said table and having a portion of the bottom wall thereof dropped to form an entrance slot, and formed with an exit slot, a supplemental folder and injector movable toward and away from said table and adapted, in its movement toward the table, to cross the folding groove therein and act upon the paper to complete the folding thereof and subsequently carry the folded sheet into said magazine and into an envelop therein and then carry the envelop and sheet out of the magazine by way of the exit slot, means for opening said envelop previous to the supplemental folder and injector entering said magazine and carrying the folded paper therein, said means comprising a pivoted frame, a block slidably mounted within said pivoted frame, a plate carried by said block, a connection between said block and supplemental folder and injector whereby the plate will be withdrawn from the entrance opening of said magazine when said supplemental folder and injector reaches the limit of its outward movement, and means for sliding the block in the opposite direction when said block is relieved of the influence of the supplemental folder and injector.

20. In a machine of the class described, a horizontal table adapted to hold a sheet of paper and provided with a folding groove, folders disposed at the opposite sides of said table and movable horizontally toward and away from the same, means for elevating said folders above said folding groove previous to the former reaching the latter, means for returning said folders to normal position to throw the same into the folding groove whereby the folding of the paper may be initiated, a supplemental folder and injector movable horizontally toward and away from said table and in a path at right angles to the first-mentioned folders and adapted to cross the folding groove therein to act upon the paper to complete the folding thereof, and means for operating said folders.

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

CHARLES W. CAUSEY.

Witnesses:
HANS TEICH,
EMIL MUELLER.