

SLIP FOLDER,

Patented July 21, 1914.

1,104,276.

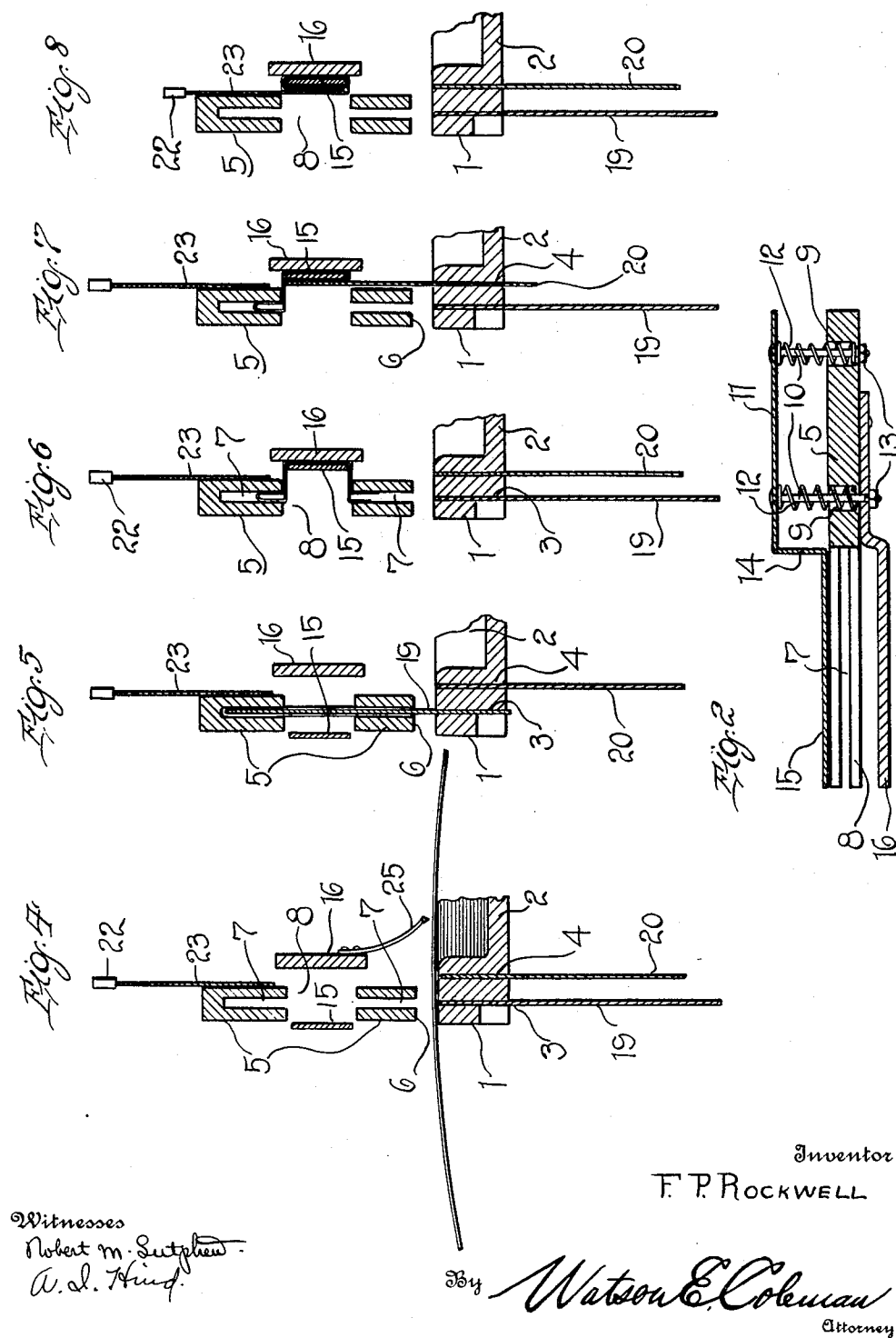


Witnesses
Robert M. Lutzpelt.
A. L. King.

By Watson E. Coleman
Attorney

1,104,276.

2 SHEETS—SHEET 2.



UNITED STATES PATENT OFFICE.

FRED P. ROCKWELL, OF ALBERT LEA, MINNESOTA.

SLIP-FOLDER.

1,104,276.

Specification of Letters Patent.

Patented July 21, 1914.

Application filed February 4, 1914. Serial No. 816,638.

To all whom it may concern:

Be it known that I, FRED P. ROCKWELL, a citizen of the United States, residing at Albert Lea, in the county of Freeborn and State of Minnesota, have invented certain new and useful Improvements in Slip-Folders, of which the following is a specification, reference being had to the accompanying drawings.

10 This invention relates to new and useful improvements in folding devices and more particularly to a folder for slips or labels, particularly used by railway clerks, for application to mail sacks to show the destination thereof and the primary object of the invention is to provide an improved device of this character which will eliminate the necessity of folding by hand.

15 A further object of the invention resides in providing a device which will enable a greater number of slips or labels to be folded in less time than can be folded by hand, or other devices designed for folding purposes and a still further object resides in providing a device which is simple and durable in construction, inexpensive to manufacture and one which will be very efficient and useful in operation.

20 With these and other objects in view, the invention consists in the novel features of construction, combination and arrangement of parts as will be hereinafter referred to and more particularly pointed out in the specification and claims.

25 In the accompanying drawings forming a part of this application, Figure 1 is a side elevation of a device constructed in accordance with my invention. Fig. 2 is a horizontal section therethrough as seen on line 2—2, Fig. 1. Fig. 3 is a similar view as seen on line 3—3, Fig. 1. Fig. 4 is a vertical transverse section as seen on line 4—4, Fig. 1, disclosing a label or slip in its first position in place to be folded. Fig. 5 is a similar view showing the first operation of the folding or knife blades. Fig. 6 is a similar view showing the third operation of the device or, in other words, disclosing the folding form in its operative position. Fig. 7 is a vertical transverse section showing the fifth step in the folding of the strip or, in other words, disclosing the folding form in

its operative position and one of the lower knife blades disposed to its operative position with respect thereto; and Fig. 8 is a similar view disclosing the last step in the folding operation.

In describing my invention, I shall refer to the drawings in which similar reference characters designate corresponding parts throughout the several views and in which—

1 indicates the main body of the device, which may be secured to a stationary object, the same being provided at one end thereof with a table or tray portion 2 which is adapted to receive thereon a plurality of slips or labels in their original state. The body 1, at a point immediately adjacent the tray or table portion thereof, is slotted longitudinally to provide the guide-ways 3 and 4, respectively, said guide-ways being arranged substantially parallel to one another for a purpose to be hereinafter and more particularly set forth.

30 Secured to the upper face of the body 1, is a plate-like member 5, which is offset from its lower edge at the forward portion thereof, as indicated at 6, whereby to permit a portion of the same to be spaced from the upper face of the body 1, and this plate at the forward portion thereof is slotted longitudinally, as indicated at 7. This slot extends from the lower edge thereof to a point adjacent the upper edge of the plate and is in vertical alinement with the longitudinal slot 3 in the body 1. This plate member 5 is bifurcated at the forward end thereof, by being provided with a slot or channel-way 8 extending transversely therethrough and disposed longitudinally for the full length of that portion having the offset therein. This may be termed a horizontal slot and affords a channel-way for the actuation of a folding form to be presently described. Formed in one face of the plate 5, are a pair of sockets or recesses 9, the inner walls of which are provided with central openings through which are guided the stems 10. These stems are carried on a strip 11 and encircling the stems between the strip and the inner walls of the recesses, are the coil springs 12 normally forcing said strip outwardly from the plate 5. Nuts 13 carried on the opposite or free ends of the stems 10

limit the movement thereof and permit said strip to be normally disposed to a predetermined position with respect to the plate 5. This strip 11 extends longitudinally of the plate 5 and is offset intermediate of its ends, as shown at 14, so as to permit a portion indicated as 15 to be disposed in alinement with the horizontal slot or channel 8 and immediately adjacent one face of said plate in its normal position. This portion, indicated as 15, may be termed the folding form and when pressure is placed on said strip 11 to overcome the tension of the springs 12, said portion 15 of the strip will be forced through the channel-way or slot 8, only to be stopped in its movement by a back-stopping plate 16 which is secured to the opposite face of the plate 5. This back-stopping plate is, of course, offset intermediate of its ends, whereby to permit that portion against which the folding form contacts to be spaced from the plane of the adjacent face of said plate 5.

Pivoted to the rear end portion of the body 1, are the ends of the levers 17 and 18 and connected to said levers are the blunted folding knives 19 and 20, respectively, which are guided through the guide-ways or channels 3 and 4, respectively of the body 1. In view of the fact that the slotted portion 7 of the plate 5 is disposed in vertical alinement, with the slot or guide-way 3, it will be seen that as the lever 17 is raised, the folding knife 19 will be guided through said slot 7 in the plate 5. When the lever 18 is raised, the knife 20 connected therewith will be guided through the space between the one face of the plate 5 and the stop plate 16. The levers 17 and 18 have the outer ends thereof designed to form gripping handles which are indicated as 21.

The levers 17 and 18 are pivoted to the body 1, so as to project below the latter and also pivoted to said body to project above the same, is an additional lever 22. The latter is curved somewhat upwardly adjacent its pivoted end, and the free end of the latter has a folding knife blade 23 connected therewith, the same being adapted to be disposed through the space between one face of the plate 5 and the stopping plate 16. This knife blade 23 is disposed slightly to one side of the plane through which the knife blade 20 passes. A spring 24 is provided in connection with the pivot of the lever 22, whereby to normally retain the latter in its raised and inoperative position, so as to dispose the guide blade 23 above the space through which it is designed to pass in connection with a slip or label.

Secured to or formed on the lower edge of the forward portion of the stopping plate 16, is a depending and outwardly bent flap 25. This latter flap extends to a point adjacent the plane of the upper face of the body

and acts as a registering means for portions of the slip or label to be folded, when applying the same in position over the slot 3. Thus, when positioning the slip or label to be folded, a certain mark thereon is adapted to be positioned so as to register with the lower edge of the flap 25.

In operation, a plurality of slips piled one upon the other, are first applied to the tray or receiving portion 2 of the body 1, assuming that the latter has been properly mounted on a stationary object. A slip is then removed from the pile and placed over that portion of the body having the slots 3 and 4 therein, a predetermined mark or line on the slip being designed for registration with the lower edge of the depending flap 25. When so positioned, the lever 17 is raised to force the folding blade 19 upwardly into engagement with said slip, thereby forcing the slip upwardly through the slot 7 in the plate 5. This operation folds the slip substantially in half and upon releasing the lever, the operator then forces the folding form or strip 11 inwardly against the tension of the springs 12 and that portion indicated as 15, will contact with the folded strip to force the central portion of the latter against the stopping plate 16. The lever 18 is then forced upwardly to cause the knife 20 in connection therewith to engage the portion of the folded slip extending across the space between the one face of the member 5 and the plate 16. This folds the slip one way. The lever 22 is then forced downwardly so that the knife 23 carried thereon will engage the folded slip from the upper portion thereof. The knife 23 contacts with that portion of the slip projecting through the space between the member 5 and the stop 16 and again folds the remaining portion of the slip over the last mentioned folded portion, this being possible in view of the slight offsetting of the blades 20 and 23 with respect to one another. The folding operation is then complete and the folded slip is readily removed by the hands and placed in the receiver or tray. It will be apparent that the slips are longer than the blade 15 and project out so that they may be readily grasped by the hand in removing the same. It will be noted that after the folding operation has been completed, a slight pressure upon the strip 11 will actuate the springs 12 and return the blade 15 to its normal position, as illustrated in Fig. 4.

From the foregoing it will be seen that I have provided a simple, inexpensive and efficient means for carrying out the objects of the invention and while I have particularly described the elements best adapted to perform the functions set forth, it is obvious that various changes in form, proportion and in the minor details of construction may

be resorted to without departing from the spirit or sacrificing any of the principles of the invention.

Having thus described this invention, what I claim is:—

1. A folding device of the class described comprising a base member having longitudinal slots therein, a plate member secured vertically on the upper face of said base portion and having a portion thereof offset whereby to provide a space between the lower edge of said plate and the upper face of said base member, said vertical plate being provided with a longitudinal slot alining with one of the longitudinal slots of said base member and also provided with a horizontal channel intersecting the aforesaid slot therein and bifurcating the outer portion of said plate, means movable vertically through the longitudinal slots of the base member and through the longitudinal slot of the plate member for applying certain folding operations to a slip, additional means movable laterally through the horizontal channel in the plate member to apply further folds to a slip, and additional means movable vertically with respect to the plate for the application of still further fold to said slip.

2. A folding device of the class described comprising a base member provided with a pair of longitudinal slots therein, a vertical plate applied thereto and having the lower edge thereof partially offset to provide a space between the portion of said plate and the upper face of said base member, said vertical plate being also slotted longitudinally for the length of the offset portion in alinement with one of the longitudinal slots of said base member, the vertical plate being also provided with a horizontal channel intersecting the slot therein and bifurcating said plate for the full length of the offset portion thereof, means movable vertically through the slots of said base member and the slot in said plate and operable from points below the plane of the base member to apply certain folds to a slip, means movable laterally through the horizontal channel in the plate to apply further folds to said slip, and additional means movable vertically with respect to said plate and operable from a point above the same for applying still further folds to said slip.

3. A folding device of the class described comprising a base member having a pair of vertical slots therein, a vertical plate secured to the upper face of said base member having the lower edge offset for a portion of its length to provide a space between a portion of the lower edge of said plate and said base member, said plate being also provided with a vertical slot extending for the full length of said offset portion and alining with one of the vertical slots of said

base member, said plate also having a horizontal channel formed therein to intersect the aforesaid slot in the same and bifurcate said plate for the length of the offset portion thereof, blades guided through the vertical slots of the base member, operating levers connected to said blades, one of said blades being adapted to be guided through the vertical slot of the plate and the other of said blades being adapted to be guided to one side of said plate, means movable laterally through the horizontal channel in said plate to provide vertical folds in a member to be folded, an additional blade designed for vertical movement along one side of said vertical plate, and an additional operating lever in connection with said last mentioned blade.

4. A folding device of the class described comprising a base member having a pair of longitudinal slots therein, a vertical plate secured thereto and having a portion of the same spaced from the upper face of said base member, said plate being provided with a longitudinal slot in vertical alinement with one of the longitudinal slots of said base member and also provided with a horizontal channel intersecting said vertical slot, whereby to substantially bifurcate the forward portion of the plate, a pair of folding knife blades guided through the longitudinal slots of said base member, the one of said blades being also adapted for disposition through the alining longitudinal slot of the aforesaid plate, a movable folding strip carried on said plate adapted for lateral movement thereon to be disposed through the horizontal channel therein, means to limit the movement of said folding strip, and an additional folding blade guided against one face of said plate and adapted for vertical movement with respect thereto.

5. A folding device of the class described comprising a base member having a pair of longitudinally spaced apart slots therein, a vertical plate secured to the upper face of said base member and having the lower edge thereof offset for a portion of its length to provide a space between a portion of said plate and the base member, said plate being provided with a vertical slot in registration with one of the vertical slots of said base member and also having a horizontal channel intersecting the slot therein and bifurcating said plate for the length of the offset in the same, a pair of levers pivotally connected at one of their ends to the rear end of said base member and disposed below the latter, blades connected to said levers and guided through the slots in said base member, one of the blades being movable through the longitudinal slot of the plate and the other of the blades being movable vertically along one side thereof, an additional lever pivotally connected at its end

to the rear end portion of said base member and disposed above the latter, an additional blade secured to the last mentioned lever and movable along one side face of said vertical plate, said blades being adapted to provide certain folds in a member to be folded, and means movable laterally through the horizontal channel in said plate to provide certain other folds in a member to be folded.

6. A folding device of the class described comprising a base member having a pair of longitudinally spaced apart slots therein, a vertical plate secured to the upper face of said base member and having the lower edge thereof offset for a portion of its length to provide a space between a portion of said plate and the base member, said plate being provided with a vertical slot in registration with one of the vertical slots of said base member and also having a horizontal channel intersecting the slot therein and bifurcating said plate for the length of the offset in the same, a pair of levers pivotally connected at one of their ends to the rear end of said base member and disposed below the latter, blades connected to said levers and guided through the slots in said base member, one of the blades being movable through the longitudinal slot in the plate and the other of the blades being movable vertically along one side thereof, an additional lever pivotally connected at its end to the rear end portion of said base member and disposed above the latter, an additional blade connected to the last mentioned lever and movable along one side face of said vertical plate, said blades being adapted to provide certain folds in a member to be folded, a folding strip movably mounted on one side face of said vertical plate having a portion thereof adapted to be disposed through the horizontal channel of said plate, and means to limit the movement of said folding strip.

7. A folding device of the class described comprising a base member having a pair of longitudinally spaced apart slots therein, a vertical plate secured to the upper face of said base member and having the lower edge thereof offset for a portion of its length to provide a space between a portion of said plate and the base member, said plate being provided with a vertical slot in registration with one of the vertical slots of said base member and also having a horizontal chan-

nel intersecting the slot therein and bifurcating said plate for the length of the offset of the same, a pair of levers pivotally connected at one of their ends to the rear end of said base member and disposed below the latter, blades connected to said levers and guided through the slots in said base member, one of the blades being movable through the longitudinal slot of the plate and the other of the blades being movable vertically along one side thereof, an additional lever pivotally connected at its end to the rear end portion of said base member and disposed above the latter, an additional blade connected to the last mentioned lever and movable along one side face of said vertical plate, said blades being adapted to provide certain folds in a member to be folded, a folding strip, means for slidably mounting the strip on the plate to permit a lateral movement of the former with respect to the latter, whereby to permit portions of the former to pass through the horizontal channel of the latter, spring means in connection with said strip and plate to normally retain the former in substantially an extended position with respect to the latter, and a stopping plate carried on the first mentioned plate against which said folding strip is adapted to contact.

8. A device of the class described including a body member having spaced parallel longitudinal slots, an upright plate member carried by said body, said plate having a longitudinal slot arranged in alinement with one of the slots of the body and further provided with a transverse slot, means carried by said body movable through said longitudinal slot for applying certain folding operations to a slip, a strip carried by said plate and normally arranged in spaced relation thereto, yielding means arranged between said plate and strip for retaining the plate and strip in its normal position, a folding form formed on said strip and movable through said transverse slot to apply further folds to said slip, and said yielding means returning said strip to its normal position.

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

FRED P. ROCKWELL.

Witnesses:

J. O. PETERSON,
C. L. HILL.