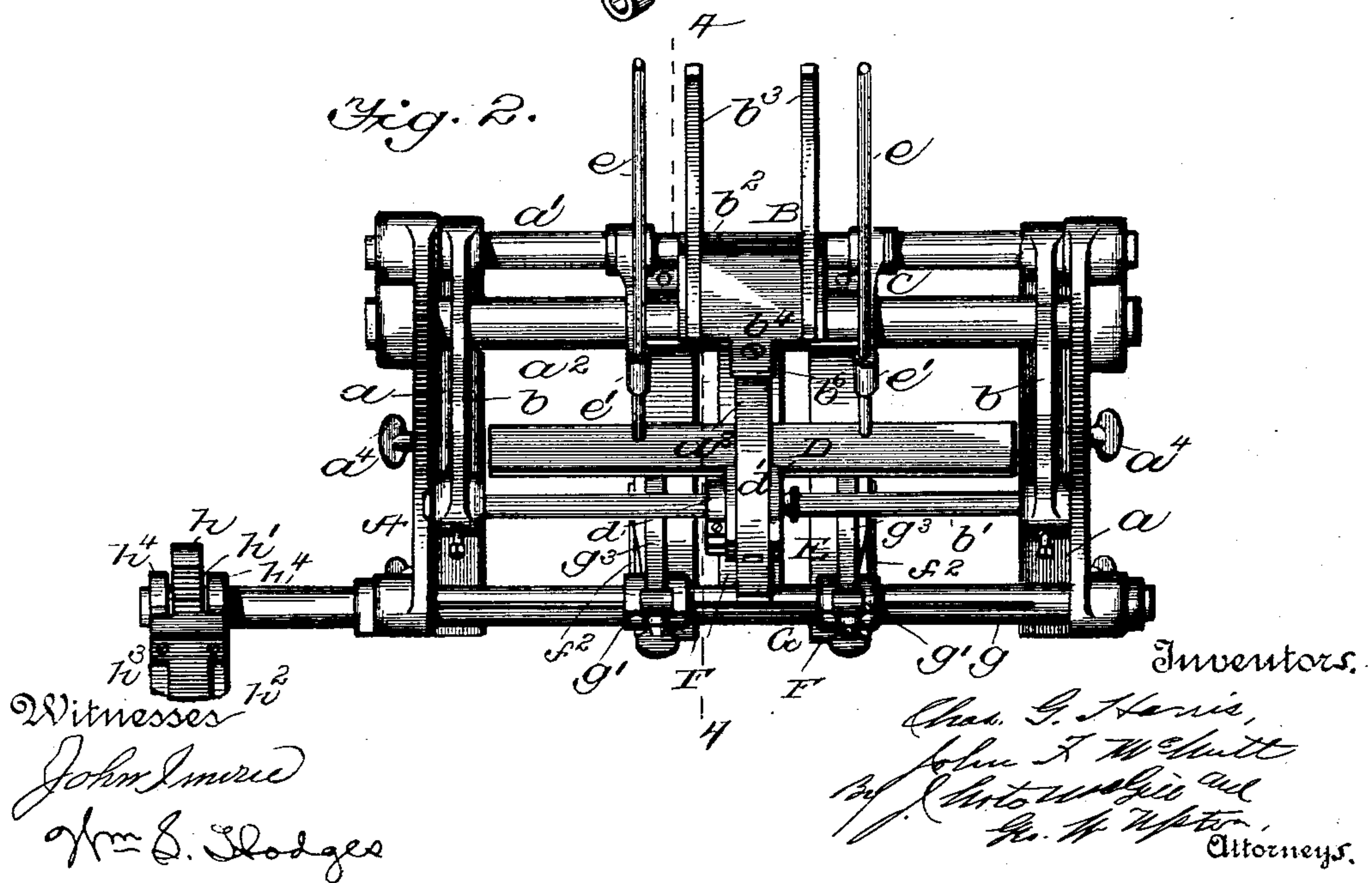
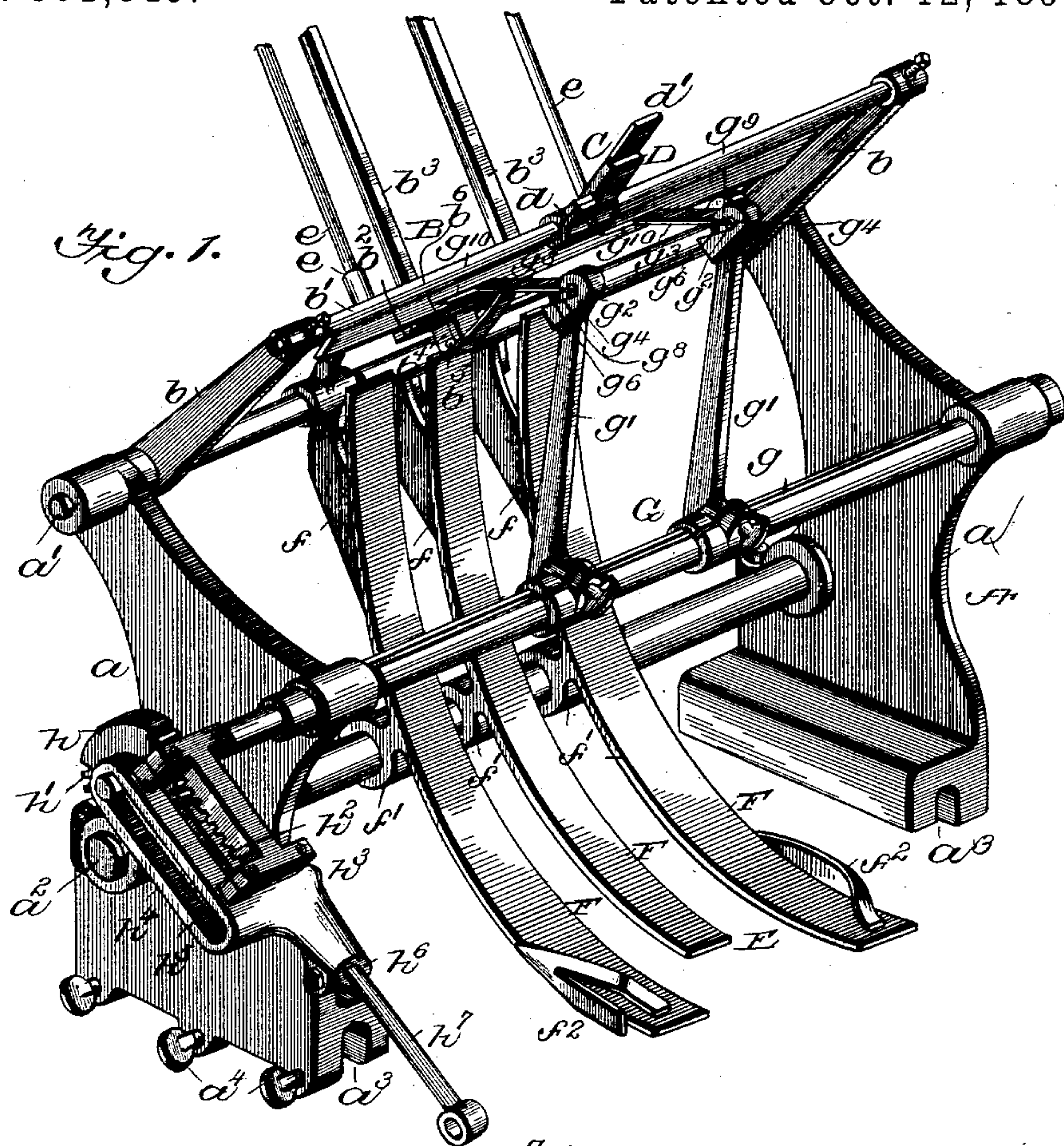


2 Sheets—Sheet 1.

No. 591,649.

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2 Sheets—Sheet 2.

C. G. HARRIS & J. F. McNUTT.  
FEEDING DEVICE FOR PRINTING PRESSES.



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# UNITED STATES PATENT OFFICE.

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## FEEDING DEVICE FOR PRINTING-PRESSES.

SPECIFICATION forming part of Letters Patent No. 591,649, dated October 12, 1897.

Application filed September 12, 1896. Serial No. 605,611. (No model.)

*To all whom it may concern:*

Be it known that we, CHARLES G. HARRIS, of Niles, and JOHN F. McNUTT, of Warren, in the county of Trumbull and State of Ohio, have invented certain new and useful Improvements in Printing-Presses; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention contemplates certain new and useful improvements in feeders for printing-presses. As is well known, it is frequently required that envelopes be printed on their backs or reverse sides, and while several feeders have heretofore been produced for feeding envelopes to a press so that the imprint will be on the face of each envelop, yet we are not aware of any mechanical feeder for supplying one envelop at a time so that the imprint will be on the back or reverse side.

The object of our present invention is to provide a simple and highly efficient feeder for mechanically feeding envelopes one at a time to a printing-press with the back or reverse side facing upward to receive the imprint of the type.

The invention will be hereinafter fully set forth, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in perspective. Fig. 2 is a plan view. Fig. 3 is a side elevation. Fig. 4 is a transverse sectional view on line 4 4, Fig. 2. Fig. 5 is a longitudinal sectional view of the traveler for operating the ejector. Fig. 6 is a transverse section on line 6 6, Fig. 5.

Referring to the drawings, A designates the supporting-frame of the feeder, the same comprising two side pieces  $a$  and two cross-rods  $a'$   $a^2$ , which firmly hold said sides in fixed relation to each other. The bottom edges of these sides are formed with grooved flanges  $a^3$ , which are designed to fit snug on suitable side rods (not shown) of the press-frame, the same being firmly held by screws  $a^4$ . To the cross-rod  $a'$  are secured the lower rear ends of two inclined arms  $b$ , which at their outer ends support a cross-rod  $b'$ .

B is the envelop-guideway. It comprises a block  $b^2$ , adjustably mounted on the center

of rod  $a'$ , two rearwardly-extended inclined rods  $b^3$ , rigidly secured to said block, and a tongue  $b^4$ , projecting from the lower end of the latter and supporting a rubber block  $b^5$ , held in place by a plate  $b^6$ .

C is the rest or support for the envelopes, the same comprising an inclined plate D, adjustably secured on rod  $b'$ , at the center thereof, by a collar  $d$ . Attached to the plate D, and extending parallel therewith and perpendicular to and adjacent rod  $b'$ , is a flat plate  $d'$ , which aids in supporting the pile or stack of envelopes. The latter are positioned on the rest or support with their flaps on the under side, and to accommodate the said flaps a downward bulge or curve  $d^2$  is formed in plate  $d'$ . The end of the latter extends beneath the rubber block  $b^5$ , and said plate is so adjusted as to leave a narrow space for the passage of one envelop at a time. To further aid in guiding and holding the envelopes while stacked, we provide two obliquely-arranged guide-rods  $e$ , mounted in the outer ends of arms  $e'$ , fast on rod  $a'$ , but capable of being adjusted. The inclination of rods  $b^3$  and  $e$  is such as to allow the envelopes to always bear upon the rest or support C.

E is the discharge-guideway, which extends from the lower end of the rest or support to a lower horizontal plane on line with the entrance to a press for the feed-supply. This guideway is shown as being composed of three spaced-apart curved plates F, forming each an arc of a circle. These plates have rearward webs  $f$ , formed with collars  $f'$ , held fast on cross-rod  $a^2$ . The central plate is somewhat shorter at its lower end than the other plates, so as not to interfere with the operating mechanism of a press. Attached to the side plates, near the lower ends thereof, are spring-fingers  $f^2$ , which extend inwardly and bear against the upper surfaces of said plates, so as to slightly hold each envelop as the fingers of the ejector are withdrawn, allowing of the discharge on a straight line, directing each envelop to the tapes (not shown) of the press, and also to arrest the envelopes as they reach the lower end of the discharge-guideway, preventing the premature discharge thereof.

G is the ejector, which comprises a rotary



shaft  $g$ , mounted in sides  $a$ , two arms  $g'$ , keyed on said shaft and having socketed ends  $g^2$ , and two plate-fingers  $g^3$ , having rounded ends  $g^4$  fitted in said socketed ends. Coil-springs  $g^6$ , projecting from a hole  $g^7$  in each arm, bear against said plate-fingers and serve to normally hold them against the upper wall  $g^8$  of a slot  $g^9$ , formed in each of said arms  $g'$ . These fingers at their free ends  $g^{10}$  are slightly bent, and said ends in the back-and-forth movement of the ejector are held against the curved plates of the discharge-guideway. As the ejector starts on its downward movement the ends of the plate-fingers  $g^3$  engage the bottom envelop of the pile or stack, between the body and flap thereof, and force the latter through the narrow space between plate  $D$  and block  $b^3$  and carry it down the curved guideway and beneath the spring-fingers, from whence it is taken by the tapes onto the press. On the extended end of shaft  $g$  is keyed a wheel  $h$ , having a segment of its periphery provided with teeth  $h'$ , with which is designed to engage a toothed bar  $h^2$ , carried by a traveler  $h^3$ . This traveler consists of two spaced-apart slotted members  $h^4$ , between which the wheel  $h$  is located, the shaft  $g$  being extended through the slots  $h^5$  of said members. To the tubular end  $h^6$  of this traveler is connected one end of a pitman  $h^7$ , the other end of which is connected to some rotary part of a press, the rotation of which will impart a back-and-forth movement to the shaft  $g$ , causing the plate-fingers of the ejector to travel down and up the guideway  $E$ .

The operation of our feeder will be readily understood from what has been said. In practice the envelops are stacked against the rest or support  $C$  and in the guideway  $B$ , the inclined rods  $e$  being adjusted on cross-rod  $a'$ , so as to bear against the ends thereof, and hence the pile or stack is always kept in proper position. Motion being imparted to the rotary shaft  $g$ , the fingers of the ejector in their downward movement will engage the lowermost envelop and feed it to the press, one envelop being fed at a time. As the envelop leaves the pile or stack its back or reverse side is facing downward, but on an incline, and in being passed over the lower guideway it describes an arc of a circle, and as it reaches the lower end of said guideway it has been turned so that its back or reverse side will face upward. Thus it will be seen that the envelops are fed with their backs or reverse sides up, so that the printing will appear on said backs. While the use of our present invention is not limited to any special press, yet it is particularly applicable to and specially designed for employment in connection with the press shown and described in Letters Patent No. 577,405, granted to us February 16, 1897.

We claim as our invention—

1. A feeder of the character herein described having an elevated rest or support for a pile or stack of envelops, the latter be-

ing stacked with their flaps on the under side, and an ejector capable of oscillating in the arc of a circle and designed to engage the flap of the lowermost envelop and carry the same forward and discharge it so that its flap or reverse side will face upward, as set forth.

2. A feeder of the character herein described having an elevated rest or support for a pile or stack of envelops, the latter being stacked with their flaps on the under side, an ejector designed to engage the flap of the lowermost envelop, and means for guiding the latter so that it will be discharged with its back or reverse side facing upward, as set forth.

3. A feeder of the character herein described having an elevated rest or support for a pile or stack of envelops, the latter being stacked with their flaps on the underside, an ejector designed to engage the flap of the lowermost envelop, and a curved guideway forming an arc of a circle over which the envelop is carried by said ejector so that it will be discharged therefrom with its back or reverse side facing upward, as set forth.

4. A feeder of the character herein described, comprising a rest or support for a pile or stack of envelops, a curved guideway extending below said rest or support with its lower end on a horizontal plane, and an ejector capable of having an oscillating movement beneath said pile or stack so as to engage the flap of the lowermost envelop, and to discharge the latter with its back or reverse side facing upward, as set forth.

5. A feeder of the character herein described, comprising an inclined elevated rest or support, and an upper inclined guideway for a pile or stack of envelops, a lower discharge-guideway extending from said rest or support to a lower horizontal plane, and an ejector capable of having an oscillating movement beneath said pile or stack of envelops and adapted to engage the flap of the lowermost envelop thereof and to discharge the latter with its back or reverse side facing upward, as set forth.

6. The feeder herein described, comprising an elevated rest or support and an upper guideway for a pile or stack of envelops, a curved guideway leading from said rest or support to a lower horizontal plane, and an oscillating rock-shaft carrying fingers designed to engage the flap of one of the envelops of said pile or stack and eject the same from said rest or support and carry it over said curved guideway, substantially as set forth.

7. The feeder herein described comprising an elevated rest or support and an upper guideway for a pile or stack of envelops, a lower guideway forming an arc of a circle extending from said rest or support to a lower horizontal plane, and an oscillating rock-shaft carrying spring-pressed fingers designed to travel beneath said rest and bear against the upper surface of said lower guide-



way, said fingers being designed to engage the flap of one of the envelops of said pile or stack and carry the same over said lower guideway, substantially as set forth.

5 8. The combination with an elevated rest or support for a pile or stack of envelops, of a rock-shaft and fingers carried by said shaft designed to pass back of and engage the flap of the lowermost envelop of said pile or  
10 stack and to convey the same over a curved plane, substantially as set forth.

9. The combination with an elevated rest or support for a pile or stack of envelops, of a rock-shaft, fingers carried by said rock-shaft  
15 designed to pass back of and engage the flap of the lowermost envelop of said pile or stack and convey the same over a curved plane, and a guide or support for said envelop while being so conveyed, substantially as set forth.

20 10. The combination with the frame, of the rest or support and guideway on the upper portion thereof designed to hold a pile or stack of envelops, a lower curved guideway supported by said frame and extending from said  
25 rest or support, and an oscillating rock-shaft carrying fingers designed to pass back of and engage the flap of the lowermost envelop of said pile or stack and convey the same over said curved guideway, substantially as set  
30 forth.

11. The combination with the frame, of the upper inclined guideway and the rest or support for a pile or stack of envelops having a bar extended beneath said guideway and  
35 formed with a bend or curve, a lower inclined guideway, and an ejector designed to travel back and forth beneath said rest or support and over said inclined guideway, said ejector being adapted to engage the flap of the  
40 lowermost one of said pile or stack of envelops, substantially as set forth.

12. The combination with the frame having two upper cross-rods, of the inclined guide-rods secured to one of said cross-rods, the rest or support mounted on the other one of said  
45 cross-rods and comprising a central bar and a second bar parallel with said rest or support and perpendicular to said latter cross-rod, a lower curved guideway, and a rock-shaft carrying fingers designed to move beneath said  
50 rest or support and over said curved guideway, said fingers being adapted to engage the flap of the lowermost one of said pile or stack of envelops, substantially as set forth.

13. The combination with the frame having  
55 two upper cross-rods and a lower cross-rod, of the inclined guide-rods secured to one of said upper cross-rods, the inclined rest or support secured to the other one of said upper cross-rods, the series of curved plates secured to  
60 said lower cross-rod, and the rock-shaft carrying fingers adapted to engage the flap of the lowermost one of a pile or stack of envelops, substantially as set forth.

14. The combination with the elevated rest  
65 or support and the lower curved guideway, of the oscillating shaft, the arms mounted thereon having slots therein, fingers fitted in said slots, and springs for normally holding said fingers against one of the walls of said slots,  
70 substantially as set forth.

In testimony whereof we have signed this specification in the presence of the subscribing witnesses.

CHARLES G. HARRIS.

JOHN F. McNUTT.

Witnesses as to Chas. G. Harris:

J. NOTA MCGILL,

JAS. H. BLACKWOOD.

Witnesses as to John F. McNutt:

GEO. W. UPTON,

GEO. D. KIRKHAM.