

A. B. Childs & H. W. Dickinson.
Feeder for Printing Press.
N^o 12401. Patented Feb. 20. 1855.

Fig. 1.

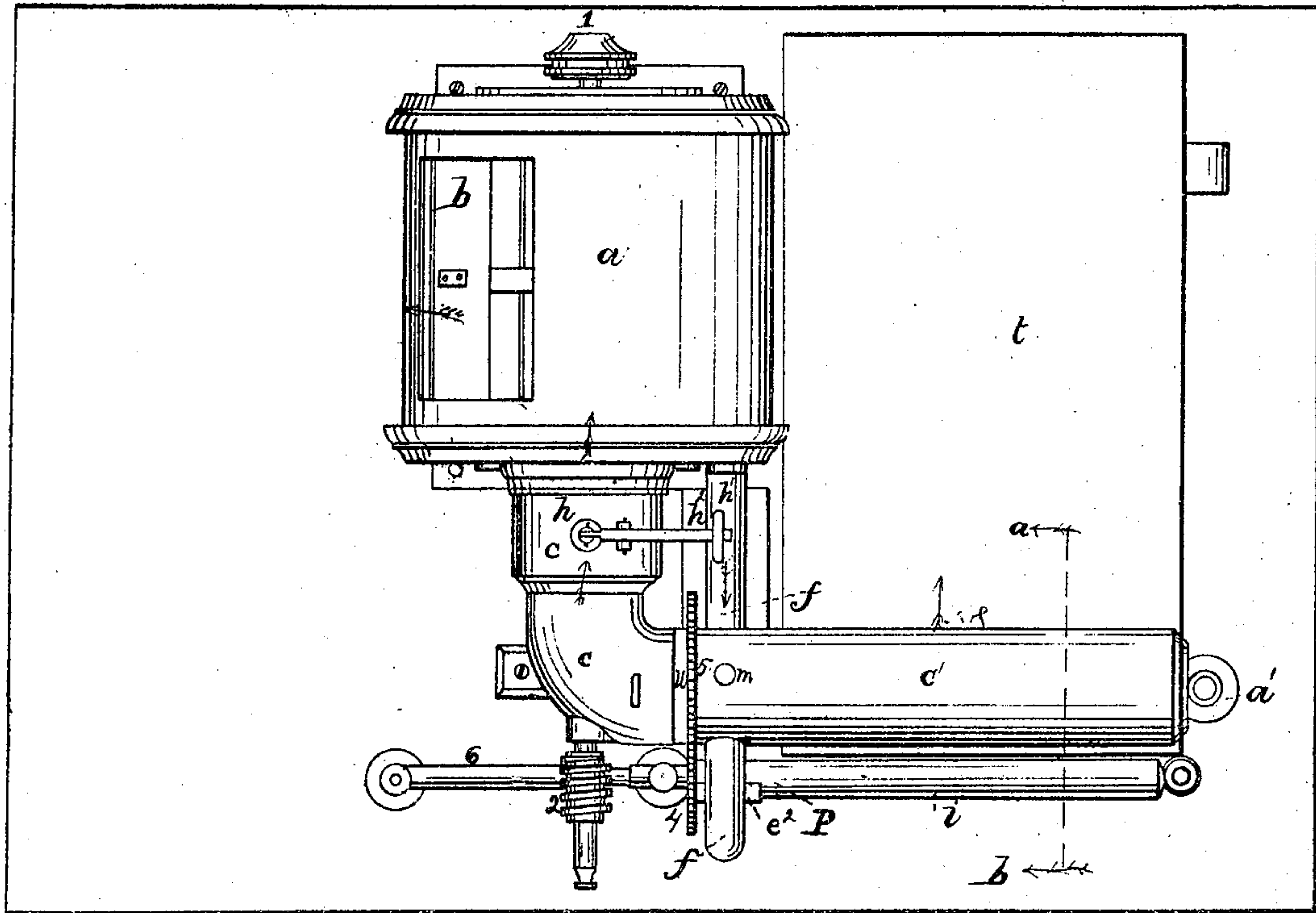
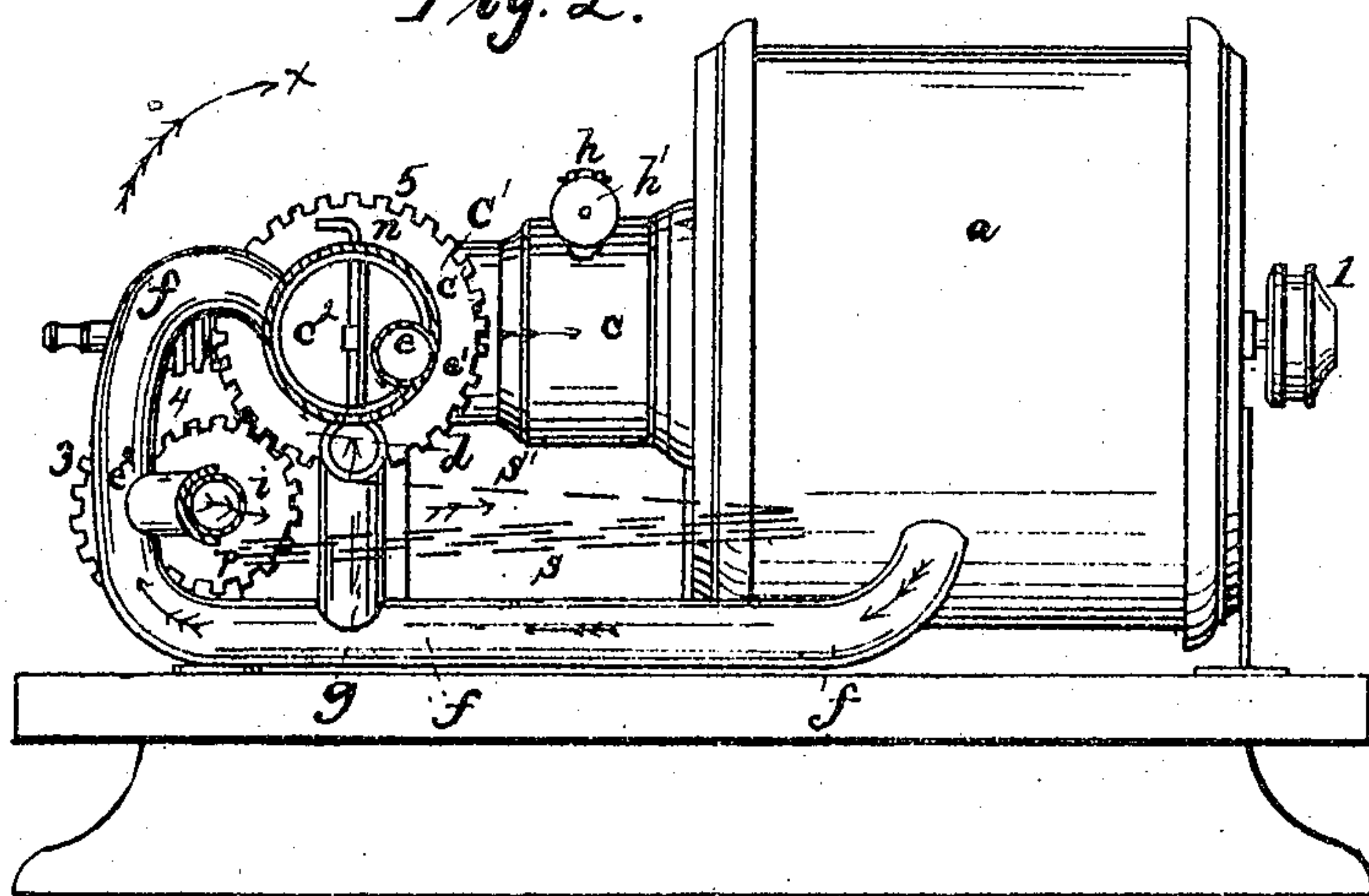


Fig. 2.



UNITED STATES PATENT OFFICE.

A. B. CHILDS AND H. W. DICKINSON, OF ROCHESTER, NEW YORK.

MACHINE FOR FEEDING PAPER TO PRINTING-PRESSES.

Specification of Letters Patent No. 12,401, dated February 20, 1855.

To all whom it may concern:

Be it known that we, A. B. CHILDS and HENRY W. DICKINSON, residing at Rochester, in the county of Monroe and State of New York, have invented new and useful Improvements in Printing-Press Feeders, of which the following is a specification.

Our invention consists in a certain mode of employing currents of air to raise and discharge sheets of paper from the pile for the purpose of feeding printing presses, of which the following is a description, the letters and figures used in said description referring to a drawing of our machine accompanying this specification.

a is the case of a fan blower connected with the central inlet or suction pipe c and the outlet or discharge pipe f .

The fan b is driven by the pulley 1 the shaft of which passes through the fan case and through the center of the inlet pipe c carrying near its end the endless screw 2 which takes into the periphery of cog wheel 3 on the shaft 6. On this shaft is a smaller cog wheel 4 which takes into the cog wheel 5. The cog wheel 5 is attached to and carries the suction and blast trunk c' , which has a working joint at w and turns on its axis, which has its bearing in the pillar a' . This trunk as represented in the drawings has a narrow slit extending nearly its whole length on the side which is lowermost in the position shown in the drawings, and this slit is shown in section in Figure 2. Exterior to this slit and extending nearly its whole length and attached to trunk c' is a smaller tube or trunk d which also has a narrow slit below, shown in section in Figure 2. Within trunk c' and extending nearly its whole length is a smaller trunk e having a slit e' extending nearly its whole length. Just beyond the end of the slit e' is a hole through the trunk c' which as the trunk revolves comes directly opposite the open end of the blast pipe f , and at other times is open to the air, the leak through this hole and also hole m being of no material consequence. As trunk c' revolves hole m which opens into the larger cavity or chamber of trunk c' is brought into opposition with the open mouth of blast pipe g .

At the point e^2 connected with blast pipe f is a short branch pipe, the open end of which is expanded into a half collar p which embraces i and covers an opening through the same not shown in the drawing. The

trunk i revolves so as to bring the opening opposite the mouth of the tube e^2 at the proper time. The open ends of blast pipe f and g where they press against the periphery of the trunk c' might also be provided with such collars if necessary to prevent leakage though we have not found it important. Within the trunk c at n there is a valve c^2 which turns upon the stem n and at h is a regulating valve opening inward, the pressure being adjusted by the regulating weight h' on the valve lever h^2 .

The pile of paper upon the table t is indicated by the red lines, s being the paper lying on the table and s' a sheet raised up from the pile.

Having thus described the various parts composing the machine we will now proceed to describe their operation. When the fan revolves the air enters the central trunk c (the valve c^2 being open) through the slit described as in the lowermost part of trunk c' , and escapes from the fan case into the tube f and thence into trunk i and out from the slit in the same manner as before described. The currents of air thus produced, viz., an inward current through trunk d and an outward one through trunk i , conspire to raise the uppermost sheet from the pile. The sheet adheres to trunk d over the slit in the same by outward pressure, and the effect of the outward blast, from trunk i is to raise up and separate the whole length of the sheet from the pile. As the trunk c' revolves in the direction of the arrow x it carries the sheet still adhering around with it. When the trunk c' has made a half revolution the valve c^2 is closed and hole m covers over the mouth of pipe g , and the hole connected with trunk e as before described comes opposite the mouth of pipe f ; the inward draft through trunk d ceases and is succeeded by an outward blast through the same and also an outward blast issues from trunk e —thus throwing off the sheet onto the press board or table, into its proper position to be seized by the fingers of the press.

The force of the blasts from the fan is regulated by the regulating valve h . The valve e^2 is not shown in connection with any gearing and the motion of the various parts is dependent upon that of the fan shaft but in actual service, the fan must be propelled by an independent connection with source of power, and the valve stem together with all the parts connected with the

changes and operation of the blasts must be connected and properly timed with the motions of the printing press by mechanical means which will be readily suggested by any skilful mechanic. It is evident by this arrangement that only one sheet can be lifted and delivered at a time. The projecting trunk *d* is important inasmuch as it enables us to carry the point or slit to which the sheet is lifted to any desired distance from the center of motion without enlarging the trunk *c'* and also prevents the sheet from "hugging" the surface of trunk *c'* which it would do if the slot were within its surface.

The valve *h* is not only a regulator of the draft of the fan but when the shut off valve *c*² is closed the fan is supplied through valve *h* which opens inward by the outward pressure, and it therefore acts in the two fold capacity of a regulating and supply valve. It is obvious that the effects of the various blasts might be attained by a vibratory instead of a rotary motion of the parts.

We claim as our invention—

1. The raising and delivering the sheets by means of the inward and outward currents, said currents being produced and

operating in one and the same trunk through one and the same slit or opening by means of the fan or its equivalent, trunk *c*, valve *c*², revolving trunk *c'*, and pipe *g* and aperture *m*; and in combination therewith we claim the outward blast produced through the trunk *e* by the means set forth.

2. We claim in combination with the inward blast through revolving trunk *c'* for raising the paper, the outward blast through revolving trunk *i* for separating the sheets, as described.

3. We claim the projecting trunk *d* in combination with the main trunk *c'* in the manner and for the purposes set forth.

4. We also claim the combination of the regulating and supply valve *h* with the shut off valve *c*² in the manner and for the two fold purpose as set forth.

In witness whereof we have hereto set our hands this eighth day of April in the year eighteen hundred and fifty four.

A. B. CHILDS.

HENRY W. DICKINSON.

Witnesses:

T. CAMPBELL,
E. HARMON.