

UNITED STATES PATENT OFFICE.

JOHN WOOTTON, OF BOONTON, NEW JERSEY.

HORSESHOE-NAIL MACHINE.

Specification of Letters Patent No. 18,617, dated November 10, 1857.

To all whom it may concern:

Be it known that I, JOHN WOOTTON, of Boonton, in the county of Morris and State of New Jersey, have invented certain new and useful Improvements in Machinery for Making Cut Horse-Nails and other Cut Nails; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a vertical section of a machine constructed according to my invention, taken transversely to the direction of the feed movement of the nail rod, in the plane indicated by the line z, z , in Fig. 2. Fig. 2 is a horizontal section of the same, in the plane indicated by the line y, y , of Fig. 1. Fig. 3 is a vertical section of the same, at right angles to Fig. 1, in the line x, x , of that figure. Fig. 4 is a face view (full size) of the nail rod in the condition in which it enters the machine. Fig. 5 is an edge view of the same.

Similar letters of reference indicate corresponding parts in the several figures.

The machine to which this invention relates punches the nails from a rod which has been previously rolled to a peculiar shape hereinafter described, to produce a number of partly formed but unseparated nail-blanks, of which several arranged side by side occupy the width of the rod with their length parallel or nearly so to the length of the rod. The peculiar form to which the rod is rolled gives it in certain parts of its longitudinal section the form of a ratchet; and my invention consists in employing the nail rod itself as part of a ratchet motion by which the rod is fed into the machine.

My invention also consists in giving the whole of the punching apparatus a series of movements back and forth laterally to the nail rod and in a certain manner intermittently to the longitudinal feed movements of the same, by which means the effect of a combined longitudinal and lateral feed motion is produced, so that a number of blanks greater than that of the punches employed may be cut from the width of the nail rod.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A, is the bedplate of the machine, having

cast or bolted on its front end a very strong standard B, on the lower part of which are planed ways h, h , to receive a strong sliding carriage C, the upper part of which contains vertical guides c, c , for a plunger D, carrying two punches a, a' , and the lower part of which contains two dies b, b' , corresponding with the said punches; the punches and dies being of proper form to cut the nails out of the nail-rod and give the proper form to two opposite sides of the nails.

E is a horizontal shaft working in one bearing in a standard K, erected on the bedplate A, and in another on the top of the standard B; said shaft carrying at its front end an eccentric F, which works in a slot d , in the plunger, for the purpose of giving the said plunger a vertical reciprocating movement to operate the punches.

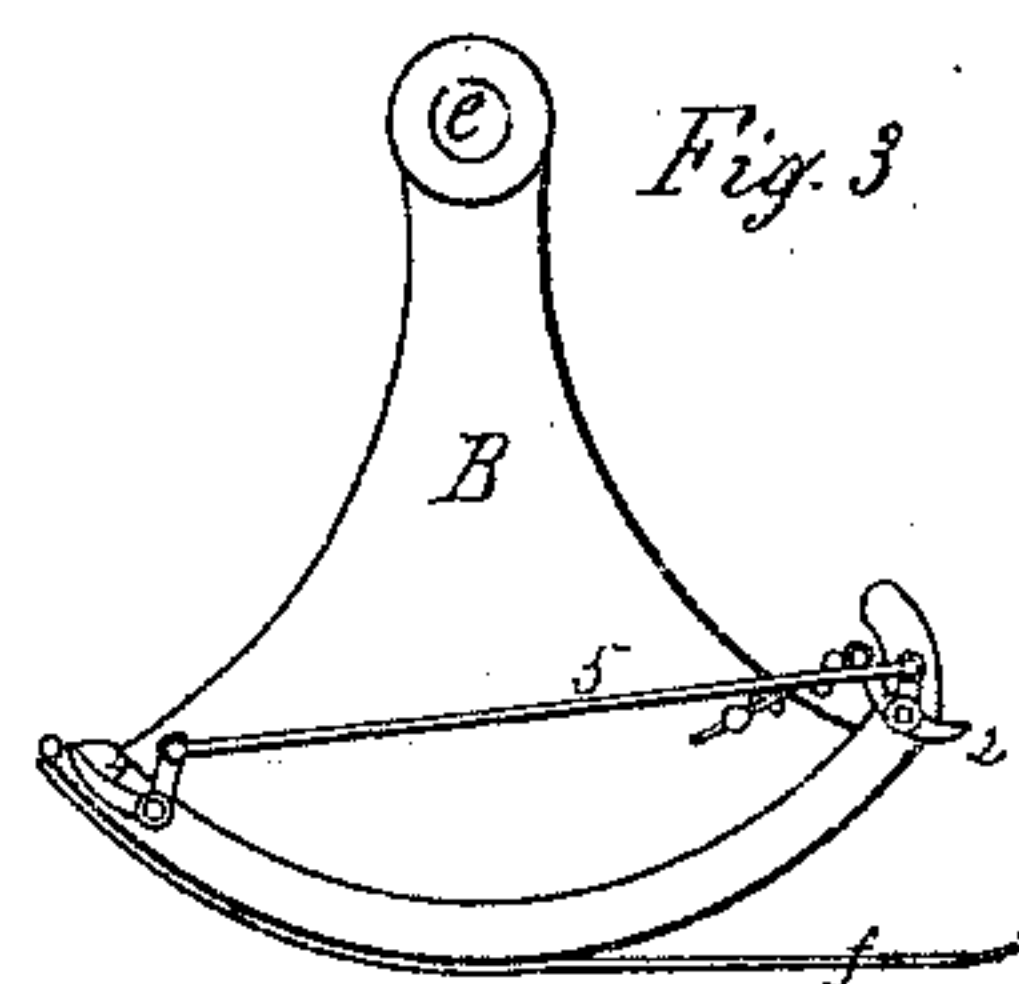
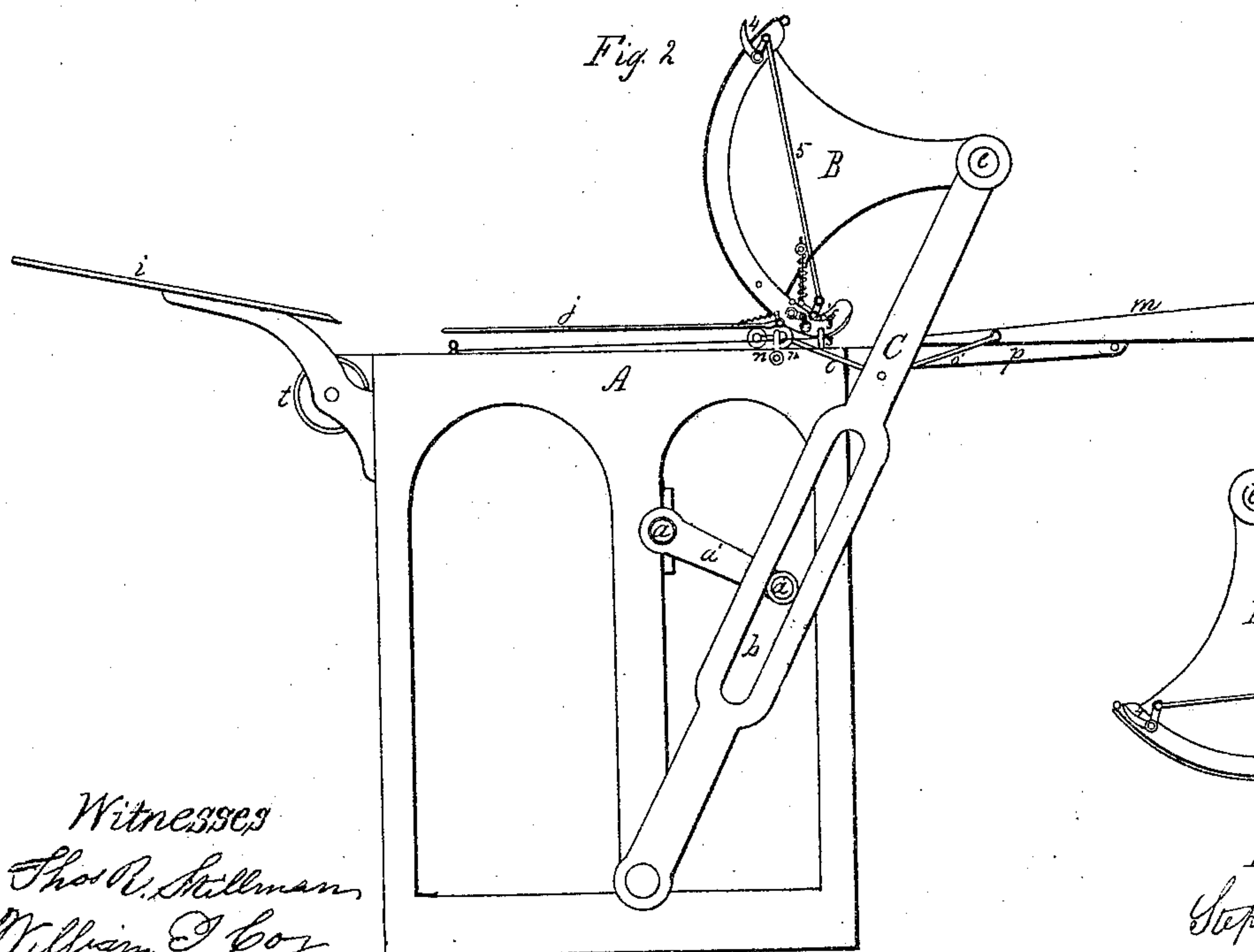
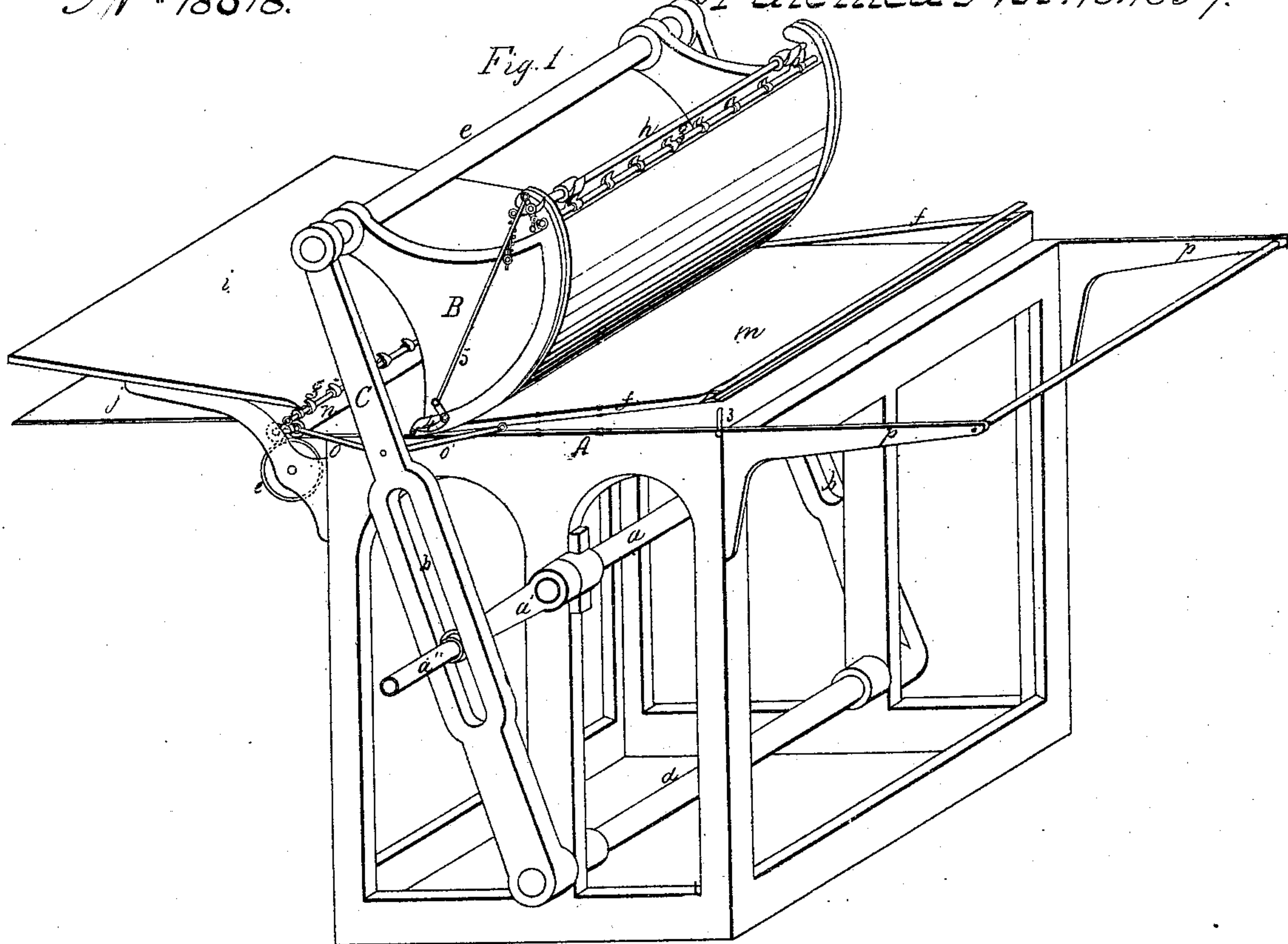
G is the driving shaft of the machine, carrying a pinion H, working in bearings in pillow blocks L, L, secured to the bedplate, which pinion gears with a large gear I, on the shaft E, for the purpose of giving to said shaft E, the necessary rotary motion for the eccentric to operate the plunger D.

J, is a horizontal shaft working in bearings in two standards M, M, below the shaft E, and deriving motion from said shaft at a relative velocity of one revolution for every two of the latter, through the agency of a pair of gears N, O. This shaft J carries a cam P, the duty of which it is to give the carriage C, with the punches and dies, a horizontal movement along the ways h, h ; said cam acting upon the end of a lever Q, of the second order which is attached by a fulcrum pin g , to the standard B, and which bears against a transverse bar u , that is secured at the back of the carriage C, and, by its action on the said lever, moving the carriage forward or in the direction of the arrow shown in Fig. 1, and said carriage being returned backward or in the opposite direction as far as a stop t , on the standard B, by the action of a spring i , attached to the front of the standard B. The cam P is of such form that the entire forward and backward movement of the carriage C, is effected during about one-fourth of its revolution or half the revolution of the punching shaft, and that the forward movement of the said carriage is completed just before the punch descends far enough to touch the

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Printing Press.

No. 18618.

Patented Nov. 10. 1857.



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