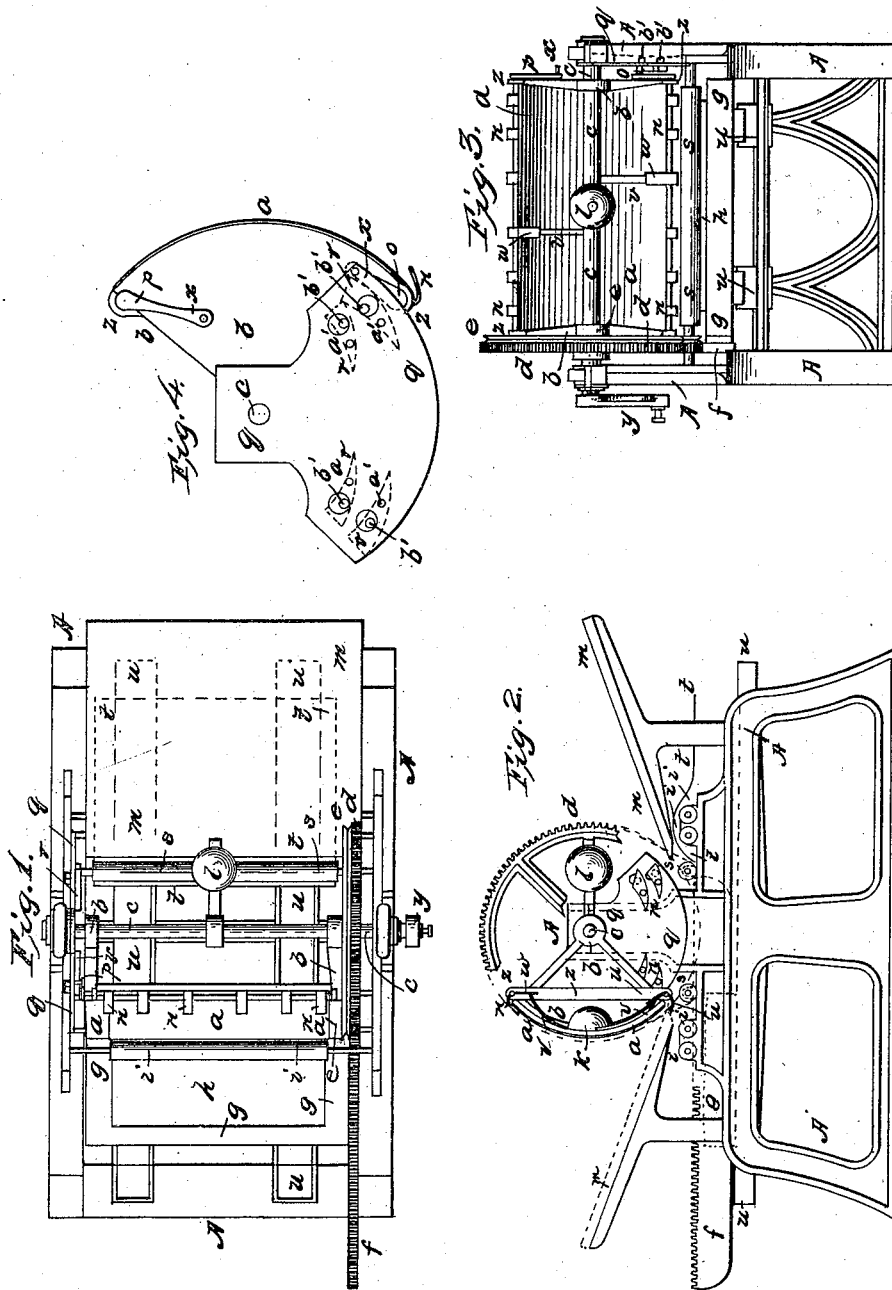


W. W. MARSTON.
PRINTING PRESS.

No. 4,756.

Patented Sept. 12, 1846.



UNITED STATES PATENT OFFICE.

WM. W. MARSTON, OF NEW YORK, N. Y.

PRINTING-PRESS.

Specification of Letters Patent No. 4,756, dated September 12, 1846.

To all whom it may concern:

Be it known that I, WILLIAM W. MARSTON, of the city of New York, in the State of New York, have invented a new and Improved Mode of Constructing Printing Presses or Machines for Letter-Press Printing; and I do hereby declare that the following is a full and exact description thereof.

10 To enable others skilled in the art to make and use my invention I will proceed to describe the improved machine as made by me and its operation, reference being had to drawings hereto annexed and making part of this specification of which—

15 Figure 1 is a plan of the machine with part of the mechanism removed for the purpose of more clearly exhibiting the improved parts of the machine and their connection with the other parts as usually constructed; Fig. 2 is a side elevation and Fig. 3 an end valuation; the working parts in all the drawings being in the same relative position but some of them kept out of view.

25 The same letters in the different figures refer to the same parts.

a, *a* is a cylindrical segment of cast iron truly concentric to its shaft *c*, *c*, by which it vibrates, and to which it is fastened by its ends *b*, *b*, the journals of the shaft *c*, *c*, vibrate in brass bearings in the main frame A, A. The cylindrical segment when operating is covered with a blanket and tympan like the cylinders of other presses for which it is substituted. On the shaft *c*, *c*, is fastened the cog wheel *d*, *d*, the radius of its pitch line is the same as the radius of the tympan surface; this wheel works into the rack *f*, *f*, which is securely fastened to the bed *g*, *g*, movable on the ways *u*, *u* so that the surface of the bed and the tympan travel at the same speed when in motion. On the bed *g*, *g* is placed the form of type *h*, *h*, which in its motion forward and backward passes under the inking rollers *i*, *i*, as usual, and also under the cylindrical segment under a regulated pressure which gives the impression to the paper when passing between it and the form. The paper is taken from the feeding boards *m*, *m*, (one of which is removed in Figs. 1 and 2, and both in Fig. 3) by the grippers *n*, *n*; the gripper shafts are supported at each end by the pieces *z*, *z*; fastened to *b*, *b*, in which they vibrate; on one end of these shafts one gripper has a lever *o*, *o*, and the other has

a lever *p*, *p*, fastened; on the opposite end of each lever is a pin *x*, *x* which in passing during the vibrations of *a*, *a*, come in contact with the tappets *r*, *r*, these are movable around their centers *a'*, *a'*, to an extent limited by the action of the pins *b'*, *b'*, in the holes of the plate *q*, *q*; in Figs. 2 and 4 the position of the lower gripper is shown with the action of the tappet *r* on the pin *x*, of the lever *o*, and the fingers *n*, *n*, ready to seize the sheet of paper. The grippers are constantly kept close to *a* *a* by the action of the springs *v*, *v*, upon the letters *w*, *w*, except when the pins *x*, *x* are acted upon by the tappets *r*, *r*; the tappets are retained in their usual position in a state of rest by their own gravity, or a small spring acting on their pins *b'*, *b'*, fastened to the plate *q*, *q*. The inking rollers *i*, *i*, are covered as usual by a steel or iron plate and fly board *t*, *t*, on which the paper is delivered after being printed. *s*, *s*, are two cylindrical brushes having pulleys on their spindles driven by a band from the rigger, or band wheel *e*, *e*, fixed on the shaft *c*, *c*, or from the rack *f*, *f*; these brushes smooth the paper on its passing from the feeding board to *a*, *a*, and likewise assist the delivery of the paper on the fly board. *k* is a weight which is sometimes taken off according to the nature of the work, the speed, and weight of the form on the bed, and a further adjustment can be made by means of the movable weight *l*, *l*.

Motion may be given to the machine by any reciprocating movement to the crank *y*, *y*, or may be given to the bed which will be communicated in either case through the intervention of the wheel *d*, *d*, and rack *f*, *f*; or any other well known method may be adopted.

The improvements herein described will enable the press thus constructed to produce a larger number of impressions in the same time than the Napier press or any of the improved cylinder presses, where the surface of the cylinder travels over a much greater space than the surface of the paper and consequently must move with two, three or four times the velocity of this vibrating cylindrical segment. This comparatively slow velocity and vibrating motion of the segment permits the simple construction of the grippers which not only makes their first cost much less but greatly increases their durability.

The use of the revolving brush is an improvement on the methods now in use for smoothing the paper and likewise for aiding its delivery on the fly board.

5 The use of adjustable weights greatly facilitates the reversing of the bed and vibrating segment, and does away with the necessity for employing the very strong springs used in the cylinder and other
10 presses, which frequently give way, endangering the safety of the workmen, breaking parts of the machine and throwing the form into pi; and which at all times, from the violent shocks they impart to the bed, do
15 more or less injury to the walls of the building, and often make it necessary, for safety, to put the press in a cellar or some dark and inconvenient place.

I do not claim the invention of printing

by machinery, or those necessary parts common to printing machines, taken in connection with the parts substituted by me for others necessary to make one machine, but

What I do claim as my invention, and desire to secure by Letters Patent, is—

25 The use of a vibrating cylinder or cylindrical segment, having two sets of grippers constructed as described; also the application of revolving cylindric brushes in the manner described; and, finally the use of adjustable weights in connection with the vibrating cylinder; or segment; the whole
30 being constructed, combined and operating substantially in the manner set forth.

WM. W. MARSTON.

Witnesses:

WM. A. COX,
C. A. MAPES.