(No Model.)

M. H. DEMENT.

TYPE WRITING MACHINE.

No. 301,487. Patented July 8, 1884.

Fig. 1.

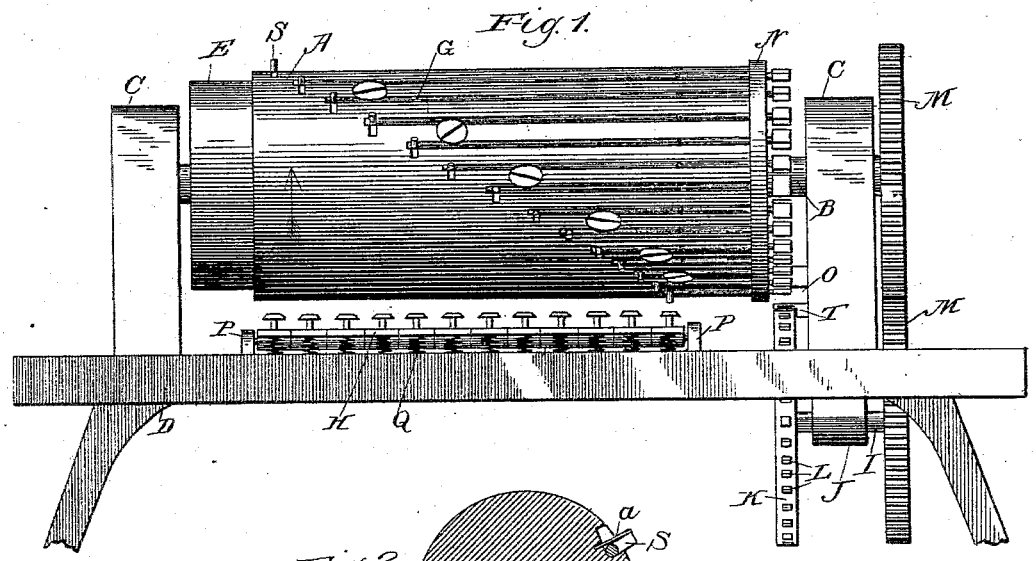


Fig. 2.

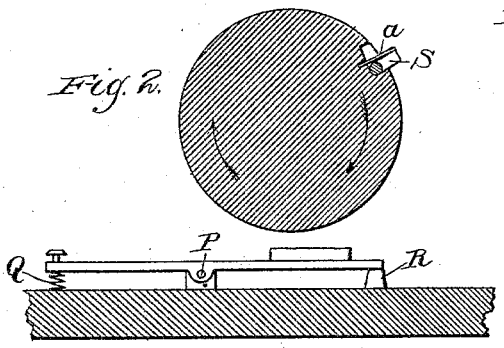


Fig. 3.

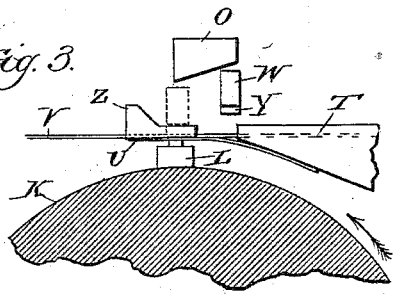


Fig. 4.

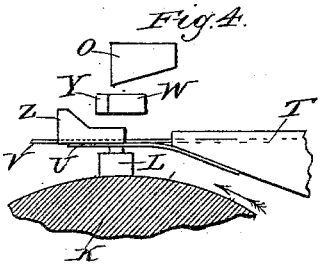
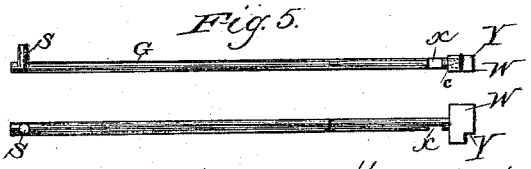


Fig. 5.



Witnesses.
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UNITED STATES PATENT OFFICE.

MERRITT H. DEMENT, OF CHICAGO, ILLINOIS.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 301,487, dated July 8, 1884.

Application filed November 16, 1883. (No model.)

To all whom it may concern:

Be it known that I, MERRITT H. DEMENT, of the city of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Type-Writing Machines, which invention is fully set forth in the following specification, reference being had to the annexed drawings, which form a part hereof.

My invention relates to the art of printing; and it consists of an improved machine for making type-indentations in papier-maché, or other suitable material.

The improved machine is constructed as follows:

A cylinder, A, is placed upon a shaft, B, which runs in standard C C, secured to a plate or table, D, and which has a pulley, E, at one end, by means of which power is applied. In the surface of the cylinder the desired number of longitudinal grooves are made, in which are placed a series of rods, G, adapted to rock or turn laterally in their grooves or bearings, substantially in the manner of a rock-shaft. The rods are secured in their grooves by a band, N, at one end, and screws at the other, as shown. They all protrude a short distance—say about a quarter of an inch—from the end of the cylinder, and extend into the cylinder different distances, so that each rod may be operated upon by a particular key, H, in the lettered operating key-board, which is placed beneath and at the side of the cylinder. Upon a separate shaft, I, running in hanger J, beneath the end of the cylinder, is placed the type-ring K, wherein the types L are set radially in a circumferential line. The two shafts are connected by gear-wheels M M, and arranged to revolve in unison. The rods and type are so arranged that as the shafts revolve each rod will cover a particular type. For instance, the rod which is actuated by the key lettered "A" will operate upon the type "A" in the ring.

Upon the inner side of the standard C, and underneath the shaft B, is placed a cam, O, beneath which the rod ends will pass as the cylinder revolves. Upon the other and inner end of each rod is placed a cam-pin, S, directly in the line of the corresponding key. The keys are pivoted near their centers upon the rod P, the outer ends resting upon springs Q, which press the inner ends downward against a stop-plate, R. Each key, when depressed, lies in the line of the cam-pin upon the corresponding rod, and as the cam-pin strikes the key-bar the cam-pin is forced backward, and the rod simultaneously caused to turn or rock, so as to make about one-quarter of a revolution. This movement occurs immediately before the rod end arrives at the cam O.

Between the type-ring and the protruding rod ends is placed a grooved plate, T, in which a strip of papier-maché, V, is placed. Beneath the strip, and secured to the plate T, is placed a forked spring, U, so arranged that as the paper is pressed downward by the rod ends the type will strike the paper between the prongs of the spring, and as the paper is released from the pressure the spring operates to throw it up from the type.

As before stated, the rods, when at rest, pass freely under the cam O. The object to be accomplished is to cause them when actuated by the keys to press the paper upon the type. This I accomplish by making the ends of the rods at the point W oblong or flat, and arrange them so that their wide surfaces will pass freely over the cam O when the keys are not actuated, and as they are actuated and the rod partially turned, the oblong ends of the rod when they reach the cam O will be upright and the upper edge will strike the cam, which operates to press the lower edge on the paper. The rods near the printing ends are joined by means of a tongue in one piece working in a slot in the other, the two pieces being hinged together by means of a pin running through the jaws of the slot and the tongue. When the ends are at rest, the band N holds the hinged pieces securely in place; but the surface of each rod at the point *x*, which is presented to the band when the rod is turned a quarter of a revolution, is cut away to permit the rod to be depressed upon the paper. To throw the rods from the paper after printing a cam, Z, is placed after the cam O in such a position that the rods will strike it and be lifted from the paper. In connection with the

cam the ends of the rods in the oblong portion and on the lower side when operating as shown at Y are cut away to permit the cam Z to underlie them.

Behind each cam-pin S is placed a spring, *a*, which operates after the rod shall have passed the key to press the cam-pin back to an upright position, and thus at the same time cause the rod to return to its resting position, so that the flat surface of the oblong ends will freely pass over the cam O.

The types when embedded in the paper operate, as stated, in connection with the ends of the rods, to pull or feed the paper; but they are apt, especially if the paper has been dampened, to disarrange or tear out the thin wall of paper which is left between the preceding indentation and the indentation in process of making, because the strain or pressure of the pull comes almost entirely upon a very fragile portion of the paper. The effect of this is not only to damage the type-matrices, but also might seriously interfere with the accurate feeding of the paper strip by the slipping of the hold which the types would have on the paper. To remedy this defect, the rods on the edges which press upon the paper at the point *c* are milled or roughened in any suitable manner, so that they will slightly penetrate the blank side of the strip, and thus more readily grasp and hold the paper, and by this means aid in pulling or feeding it the required distance, as well as distribute the strain of the pull upon both sides of the strip.

The machine may also be used to print with ink upon strips of paper by adding suitable ink-rollers (not shown) and placing a milled ring or other device for grasping the paper by the side of the type-row.

In the annexed drawings, Figure 1 is a front elevation of the machine, with cam-plate Z omitted. Fig. 2 is a cross-section view showing one operating-key and one rod with cam-pin S and spring *a*. Fig. 3 represents the cams Z and O with oblong end of rod passing the cams in position for operating. Fig. 4 shows rod end at rest, passing the cams. Fig. 5 shows detail views of rods.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of a rotary holder with its series of rocking rods provided with oblong faces and the cam O, substantially as shown and described.

2. The combination of the rods with milled or roughened operating faces, and the type, substantially as and for the purposes shown and described.

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Witnesses:
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