(No Model.)

M. G. MERRITT.

TYPE WRITING MACHINE.

No. 444,889. Patented Jan. 20, 1891.

Fig. 1.

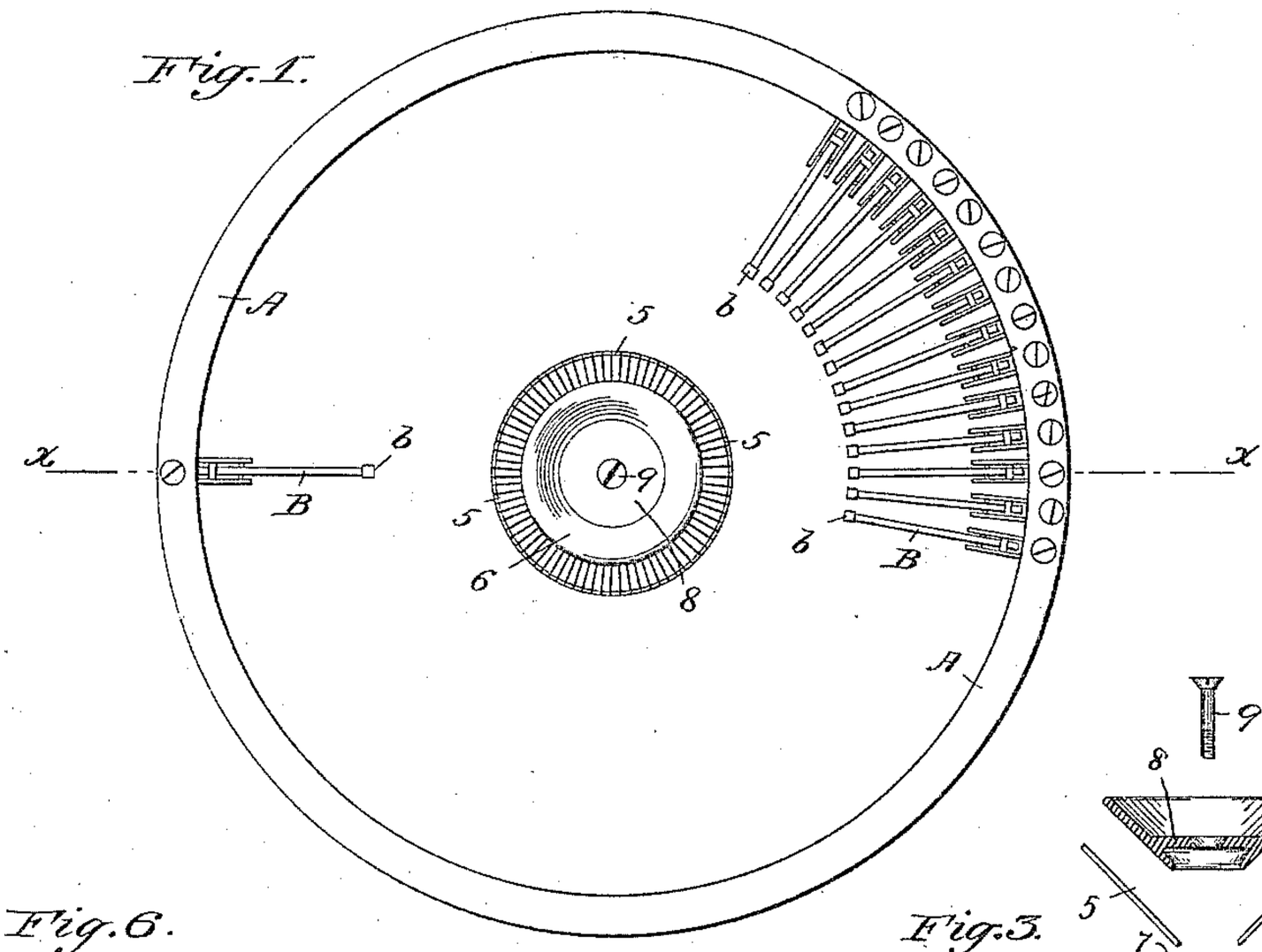


Fig. 6.

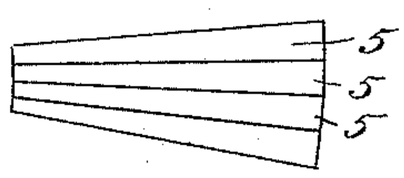


Fig. 2.

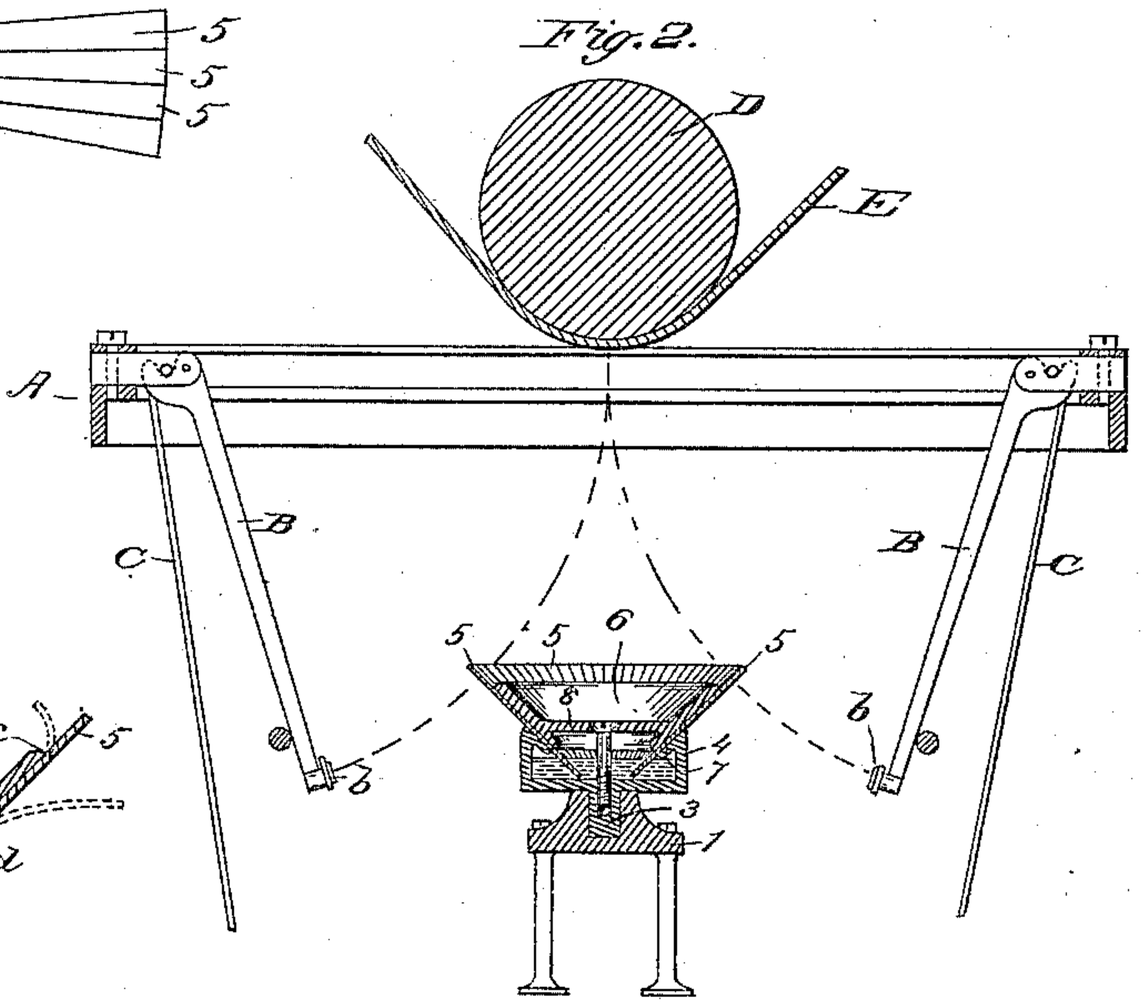


Fig. 3.

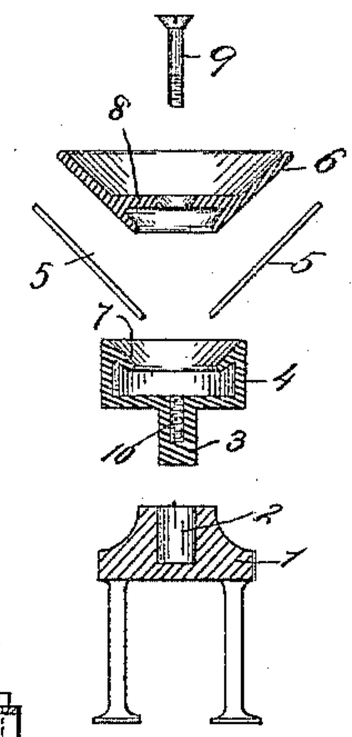


Fig. 5.

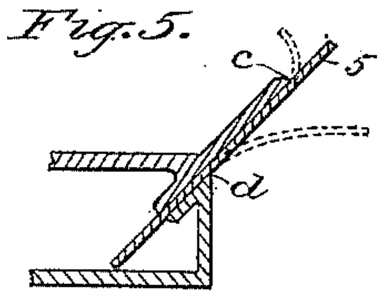
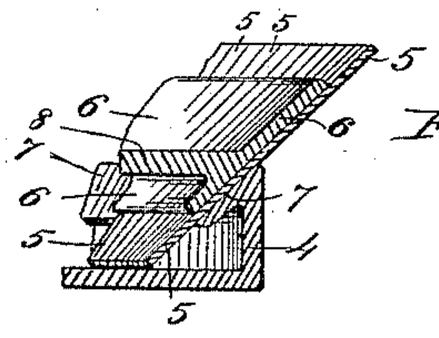


Fig. 4.



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UNITED STATES PATENT OFFICE.

MORTIMER G. MERRITT, OF SPRINGFIELD, MASSACHUSETTS, ASSIGNOR TO THE YOST WRITING MACHINE COMPANY, OF NEW YORK, N. Y.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 444,889, dated January 20, 1891.

Application filed April 9, 1887. Serial No. 234,252. (No model.)

To all whom it may concern:

Be it known that I, MORTIMER G. MERRITT, a citizen of the United States, and a resident of Springfield, in the county of Hampden and State of Massachusetts, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

In that class of type-writing machines known as "lever-machines" it is at present customary to employ a traveling inking-ribbon between the paper on the platen and the type, and to effect the impressions of the type upon the paper through the ribbon. This mode of printing is objectionable, for the reason that the impressions so made never correspond exactly to the lines of the type and appear clean cut and sharp as in press-printing, but have a smudged, dull, and blemished appearance, rendering the character of the work of the type-writer far inferior to that of the printing-press. The use of the ribbon necessitates the employment of many devices for supporting and feeding it, adding greatly to the cost of the machine, and is objectionable for the further reason that it frequently smuts or smears the paper between lines and renders the work unclean and unsightly. Further objections to the employment of the ribbon are, first, that it is in the way of the operator when it is desired to clean the type; secondly, it constantly soils the hands of the operator and is transferred to the work; thirdly, it requires frequent reinking, which is an annoyance and an expense, and, fourthly, it is comparatively soon destroyed by the type, which incessantly hammer it against the platen.

My invention has for its object to dispense with this inking-ribbon and provide a means for inking the type, by the use of which all the above-recited objections may be overcome and vastly better results in printing effected.

My invention consists in certain features of construction and in the combinations of devices hereinafter more fully described, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a plan view of a portion of a type-writing machine involving my invention. Fig. 2 is a vertical section taken at the line *x x* of Fig. 1 with the platen and a sheet of paper added. Fig. 3 is a sectional view of the parts of the inking mechanism separated. Fig. 4 is an enlarged partial sectional view of the devices assembled together. Fig. 5 is a fragmentary sectional view to illustrate particularly the movements of the inking-pads during the ascent and descent of the type-levers. Fig. 6 is a plan of several of the inking pads or strips.

In the various views the same part will be found designated by the same letter or numeral of reference.

A is the top plate or type-ring of a type-writing machine, to which are connected to radiate in the usual manner the type-levers B.

C represents the customary connecting-rods, which couple the key-levers (not shown) and the type-bars B together.

D represents the platen or printing-roller, and E a sheet of paper to be printed upon.

1 represents a standard, which is secured at the lower portion of the machine. The top of the standard is formed or provided with a depression or socket 2 for the accommodation of a hub or spindle 3, depending from the under side of an ink well or receptacle 4.

5 represents an ink pad or surface, and 6 a holder or clamp therefor and a cover for the ink-well. The ink-well is formed or provided with an annular tapering downwardly-extending flange 7 at its upper portion, and the combined holder and cover 6 is given a tapering configuration to match the flange 7, so that when the inking-pads 5 have been introduced and the several devices put together the pads will have a long bearing and be held at the desired angle. The device 6 is provided with an annular web 8, in which is formed a countersink perforation to admit the head of a screw 9, that passes through this perforation and takes into a threaded aperture 10 in the spindle 3 of the ink-well and serves to hold the several parts together, all as clearly illustrated. The pads 5 consist of strips of flexible material capable of raising the ink from the receptacle 4 by capillary attraction. So

far I have used silk and jaconet with good results, and have employed ink similar to that used for inking type-writer ribbons. The device 6 extends some distance above the ink-well and the pads 5 project beyond the device 6 in the direction of the pivots of the type-carriers and form the figure of an inverted frustum of a cone, as will be seen and for the purpose to be presently described.

The parts of the inking apparatus having been assembled together in the manner illustrated and ink supplied to the reservoir, as indicated by dotted lines at Fig. 2, the contrivance is secured to the machine with its vertical axis in line with the impression or printing point, and so that the pads will extend across the paths which the type *b* move in as they are swung up to print upon the paper E. As the type are elevated their faces strike the pads perpendicularly and bend the upper free ends inwardly, as indicated at Fig. 5, taking therefrom at the same time a sufficient quantity of ink to print their characters directly onto the paper. When the type shall have passed by the pads in ascending to print, the portions bent inwardly, being flexible and comparatively short, will spring outward again into their original positions. After the printing shall have been effected and the stem-keys released the type-bars will descend by gravity, as usual, and in their descent will strike the free ends of the pads and bend them downwardly and outwardly a distance, as indicated at Fig. 5, when they will part company and the pads spring back to their normal positions.

By constructing the device 6 in the manner shown it will be observed that the pads are supported for a considerable part of their lengths, and that during the upward movement of the type under the force exerted by the operator the pads will be bent at the point *c*, while during the downward movement under the lesser force of gravity the pads will be bent back at the point *d*, where it requires less power, and hence there is no liability of the type-bars catching in the pads. There may be as many pads as there are type to the machine, each pad acting independently of every other, or there may be one pad for every two or more type, or the pad or inking-surface may be constructed of a single piece of material slitted at requisite points to form independent sections; but I prefer the construction shown.

The web 8 acts as a cover to the ink-fountain and serves to exclude dust, &c.

By the socket-and-spindle construction shown the pads may be revolved by hand. This may be desired to preserve the life of the pads, as it will be understood that some characters are used more than others, and if the inking contrivance were incapable of this turning movement some of the pads or portions of the inking material would be destroyed sooner than others.

By means of the reservoir, the device 6, and the screw 9 the pads may be clamped as tightly as desired and the ascent of the ink by capillary attraction regulated to give the best results.

Although I purpose using an ink-reservoir, as shown, I desire it to be understood that in so far as one feature of my invention is concerned this device may be omitted and inked pads used alone.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a type-writing machine in which the type print directly onto the paper, the combination of a paper-platen, a series of radially-arranged type-carriers adapted to strike at a common center, and a series of inclined textile inking-pads arranged to intersect the paths of travel of the type.

2. In a type-writing machine in which the type print directly onto the paper, the combination of a paper-platen, a series of radially-arranged type-carriers adapted to strike at a common point, an ink-pad support arranged vertically in line with the common center of the type, and a series of textile ink-pads arranged to radiate from said support in substantially the direction of the pivots of the type-carriers and to intersect the paths of travel of the type.

3. In a type-writing machine in which the type print directly onto the paper, the combination, with the paper-platen and the radially-arranged type-carriers, of an inking contrivance arranged vertically in line with the impression-point, and consisting of an ink-reservoir and a flexible inking-surface disposed in the paths of travel of the type, substantially as set forth.

4. In a type-writing machine in which the type print directly onto the paper, the combination, with the paper-platen and type-carriers, of an inking contrivance consisting of an ink-reservoir, a flexible flaring inking-surface, and a tapering or inclined holder, substantially as set forth.

5. The combination of the ink-reservoir, the tapering or inclined holder, and the flexible inking-surface projecting beyond the holder, substantially as set forth.

6. The combination of the ink-reservoir, the adjustable tapering or inclined holder, and the flexible inking-surface projecting beyond the holder, whereby the feed of the ink to the free end of the inking-surface may be regulated, substantially as set forth.

7. The combination of an ink-reservoir, a holder having a perforated web, an inking-pad between the reservoir and the holder, and the retaining and adjusting screw.

8. The combination of a base or standard formed with a seat or bearing, an ink-reservoir provided with a hub or spindle, a holder, and an inking-pad clamped between the reservoir and the holder.

9. An inking contrivance having a flexible

inking-surface clamped near one end and supported interiorly to near its other end, whereby two points of bending are provided, substantially as set forth.

10. An inking contrivance provided with a series of independent textile inking-pads arranged in the form of an inverted frustum of a cone.

Signed at Springfield, in the county of Hampden and State of Massachusetts, this 30th day of March, A. D. 1887.

MORTIMER G. MERRITT.

Witnesses:
CHARLES HARMAN,
FRANK. A. YOUNG.