

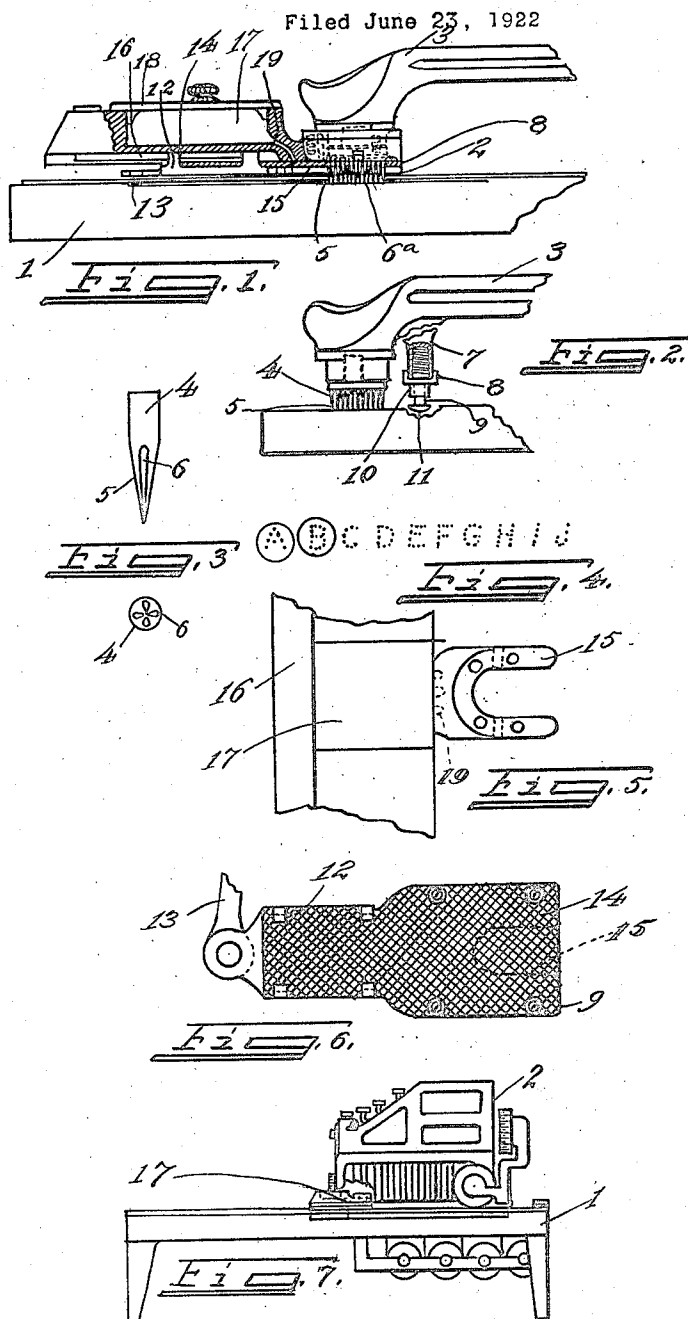
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MANIFOLDING TYPEWRITER

Filed June 23, 1922



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UNITED STATES PATENT OFFICE.

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MANIFOLDING TYPEWRITER.

Application filed June 23, 1922. Serial No. 570,388.

To all whom it may concern:

Be it known that we, JOHN Q. SHERMAN and ALBERT W. METZNER, citizens of the United States, and residents of Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Manifolded Typewriters, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

Our invention relates to typewriters which make an impression upon and through a number of copies at one and the same time. The usual method of making plural copies is either to employ carbon paper or else to employ a printing ribbon which is wound back and forth between the various webs to be imprinted.

It is the object of our invention to provide a penetrating type which of itself will penetrate and mark as many webs of paper as are desired, and to provide means for inking the type.

In the modification shown in the drawings, the invention is shown as applied to an Elliot-Fisher billing machine, although it will be understood that the invention may be applied to a number of different forms of typewriter.

We accomplish the objects of our invention by that certain construction and arrangement of parts to be hereinafter more specifically pointed out and claimed.

In the drawings,

Figure 1 is a detail side elevation partly broken away showing the essential features of our invention.

Figure 2 is a detail of the type member and stripper finger.

Figure 3 is a detail elevation of one of the pins making up the type member.

Figure 4 is a view showing the form taken by the letters printed by our invention.

Figure 5 is a top plan view showing the ink well and the reciprocating felt carrier, this carrier corresponding to the ribbon carrier of an Elliot-Fisher machine.

Figure 6 is a plan view of the inking felt.

Figure 7 is a side elevation showing a manifolding or billing machine and the mounting point of our inking devices.

Referring to the drawings, the frame of a billing machine is shown at 1, on which is mounted the typewriter 2. As in the

usual machine, this typewriter moves bodily in two directions, and it will be understood that the devices used in connection with the type must move with the machine, whereas in applying our machine to movable carriage machines, the inking devices will be stationary.

Each type bar 3 of the typewriter is formed at its end with the desired letters or symbols, made up of pointed pins arranged to make up the letter by the projecting pin points. It is preferred that these pins be made with shanks 4 and points 5, which are formed with ink carrying grooves 6, so as to take ink through any number of webs of paper which the pins will puncture.

In making an impression the type bars are operated as usual and the pins thrust into the paper. They will make small holes in the paper in the desired design, each hole being surrounded by a rim which is inked, thereby making a non-erasable, but quite neat typewritten impression on all webs without the use of carbon paper or multiple printing ribbon.

We preferably mount on each type bar a small socket piece 7 in which is a spring 8 surrounding a plunger 9. The plunger is held in the socket by a cap 10, with its end 11 projecting to contact with the paper. As the type bar is thrown against the paper, the plunger is forced into the socket, and as the type bar is raised, the spring will force the pins out of the paper, thereby stripping it, after which the type bar will be free to move away in the usual manner.

The stripper will not be necessary in some instances, depending upon the nature of the paper and the number of the webs used.

It will be noted that in the Elliot-Fisher machine the inking ribbon is carried by a holder which moves back and forth in a horizontal plane beneath the printing point. We use this operation in our machine.

Thus on the carrier 12 reciprocated and carried in a horizontal plane by the arm 13 is a piece of felt 14. A horseshoe-shaped piece 15 is used as part of the felt holder, this horseshoe-shaped piece being arranged to swing in under the printing position of the type bars.

On a cross bar or frame piece 16 on the typewriter we form a chamber 17 for ink, which chamber is closed by a plate 18 and has a number of holes 19 extending to a

point just above the position of the felt piece, so that the felt wipes the nozzle formed by said channels and the chamber casing.

5 In operation the felt carrier swings the felt back and forth so that the felt wipes ink from the well as a wick. The ink flows in the felt to the point between the horseshoe frame piece, which frame piece swings under
10 the type just before it makes its impression.

The pins forming the type pass through the felt, thereby becoming inked, and the ink rests on the surface of the pins, and is accumulated in the small grooves or veins
15 in the points.

The pins then pass down through as many webs of paper as are used and form small ink outlined dots (Figure 4) in the points.

We have, as stated, merely described one
20 embodiment of our invention, the scope of which will be stated in the claims that follow.

Having thus described our invention, what we claim as new and desire to secure
25 by Letters Patent, is:—

1. In a manifolding machine, the combination of a typewriter having its type bars faced with type in the form of pointed pins having the arrangement of the desired letter
30 or symbol, a well for ink having a port and a pad movable as in the case of the ribbon holder in a typewriter to wipe the ink port of the well and project into interposition between the type face and the webs to be
35 penetrated by the pins.

2. In combination, a platen for a plurality of webs of paper, a member movable to and from the printing point on said webs, a typewriter having type bars movable to
40 and from said point, said bars having type faces formed of pointed pins, said movable member comprising a penetrable inking pad through which the pins will pass and a fixed ink supplying means located and
45 adapted to supply ink to the penetrated portion of the pad when withdrawn from the printing print.

3. In combination, a platen for a plurality of webs of paper, a member movable
50 to and from the printing point on said webs, a typewriter having type bars movable to

and from said point, said bars having type faces formed of pointed pins, said movable member comprising a penetrable inking pad through which the pins will pass, and a
55 resilient member on the type bar adapted to force it away from the platen.

4. In a manifolding typewriting machine, the combination of a type base having a face formed of pointed pins arranged to project
60 in the form of a desired letter or symbol, and an inking device adapted to deposit ink on said pins, and means connected with the type base and having resilient action to force the base away from projected position
65 of said base.

5. In combination, in a typewriter, a type bar having a type face formed of projecting pointed pins, means for inking said pins, and a spring contact or the like on the type
70 bar adapted when the type bar is forced against a platen to project it away from the platen, thereby pulling the pin points out of web material thereon.

6. A type bar for machines of the character described, comprising the bar proper, a type face formed of projecting pointed pins arranged in the form of a desired letter or symbol, and a resilient platen contact on the bar adapted to force the bar away from
80 a platen when it strikes the same.

7. A type bar for machines of the character described, comprising the bar proper, a type face formed of projecting pointed pins arranged in the form of a desired letter
85 or symbol, and a resilient platen contact on the bar adapted to force the bar away from a platen when it strikes the same, said resilient contact device comprising a spring plunger mounted on the type bar and projecting
90 alongside of the pins.

8. An inking device for projecting pin type faces, comprising a rocking member, operable as an ink ribbon guide, an ink well having a port, a pad holder on the rocking
95 member having a cut-away space, a penetrable pad mounted on the holder and lying over said cut-away portion, and said rocking member adapted to move the pad in constant wiping contact with the ink well port.

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