April 15, 1958 F. J. VERDERBER 2,830,533

MANUAL DUPLICATORS

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FIG. 1

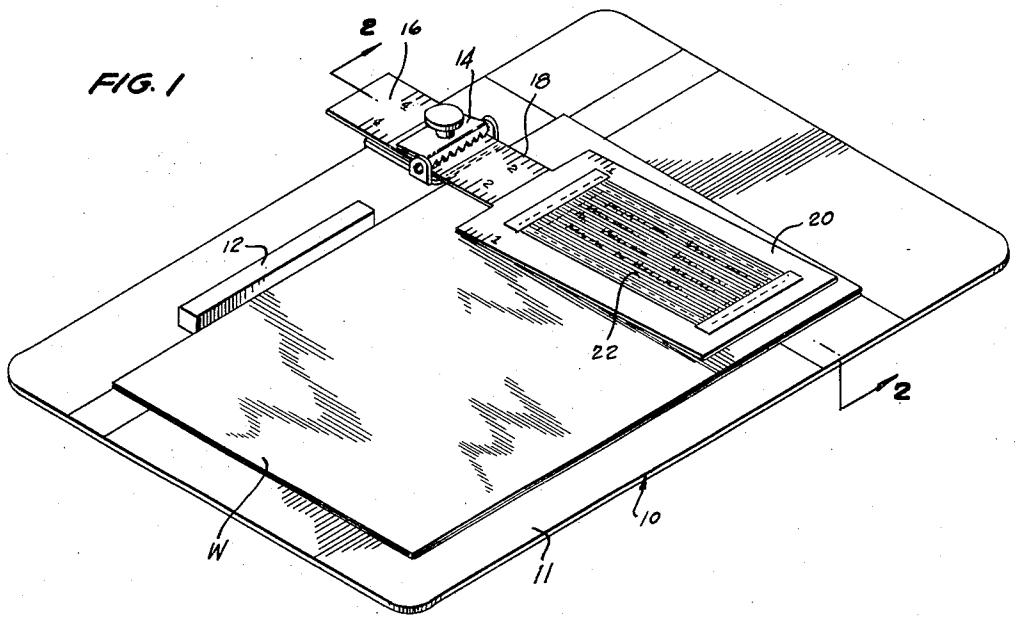

FIG. 2

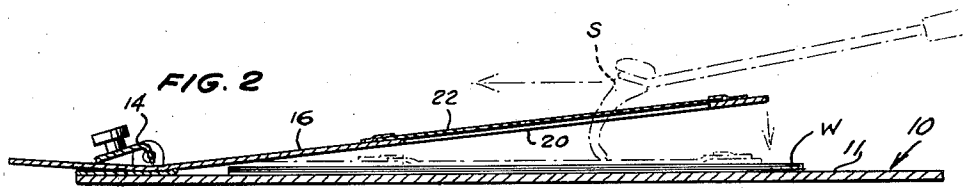

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FIG. 3

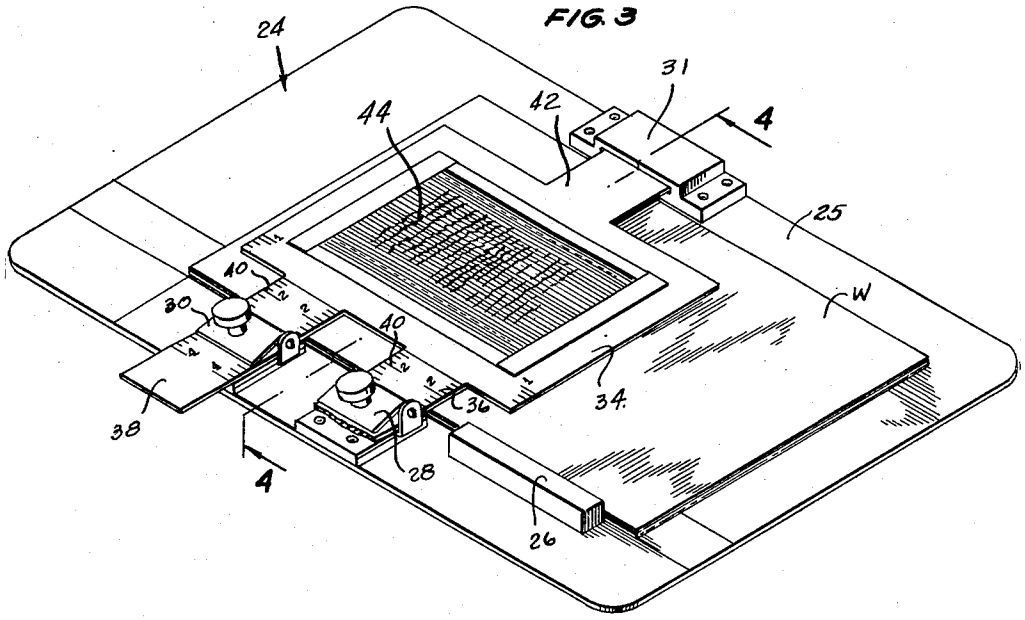

FIG. 4

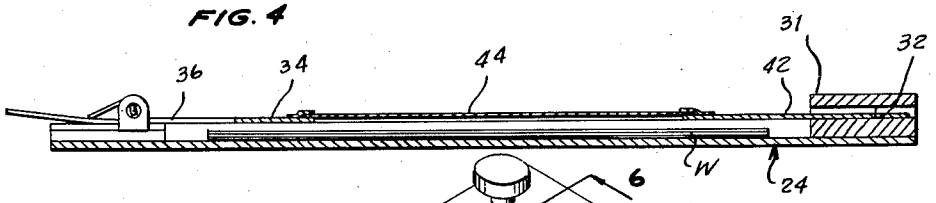

FIG. 5

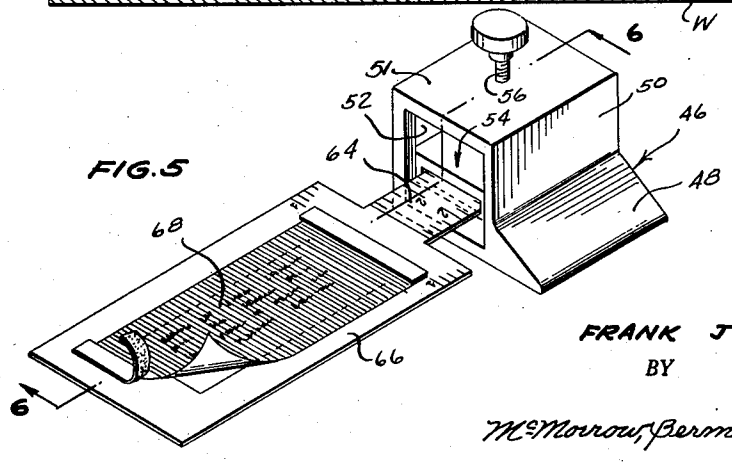

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FIG. 6

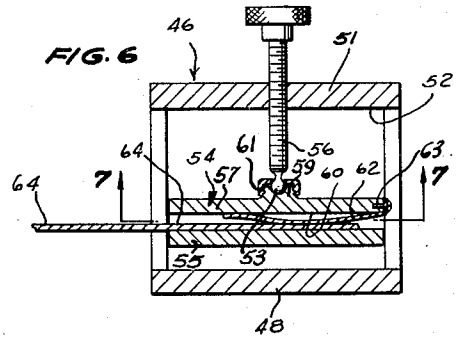


FIG. 7

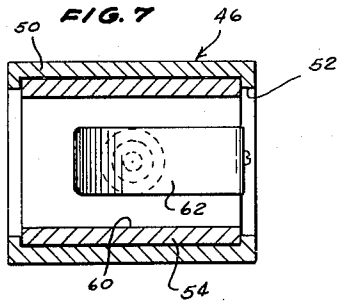


FIG. 9

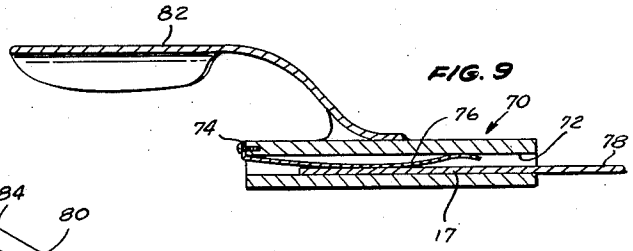
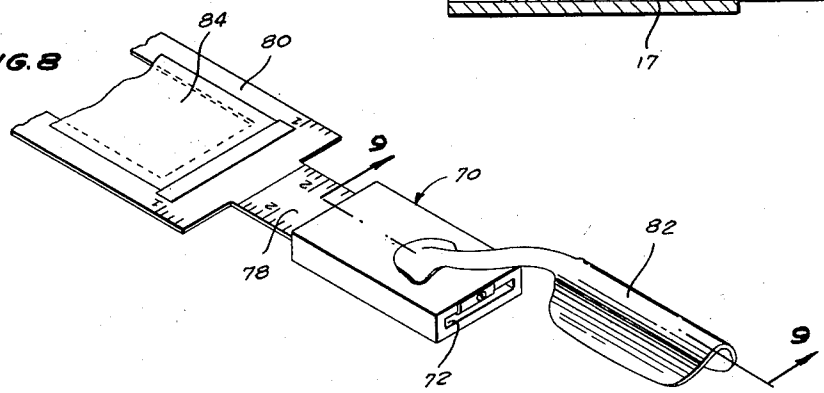


FIG. 8



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MANUAL DUPLICATORS

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Application August 13, 1954, Serial No. 449,626

8 Claims. (Cl. 101—126)

This invention relates to improved manual duplicators of the type using stencils.

The primary object of the invention is to provide practical and efficient manual duplicators of this kind, which are simple in construction, are composed of a small number of uncomplicated and easily assembled parts, the duplicators being easy to use and manipulate.

Another object of the invention is to provide duplicators of this kind which can be made in attractive, rugged, and serviceable forms at relatively low cost.

Other important objects and advantageous features of the invention will be apparent from the following description and the accompanying drawings, wherein, for purposes of illustration only, a specific form of the invention is set forth in detail.

In the drawings:

Figure 1 is a perspective view of one form of this invention;

Figure 2 is a vertical transverse sectional view taken substantially on the line 2—2 of Figure 1;

Figure 3 is a perspective view of another form of the invention;

Figure 4 is a vertical transverse sectional view taken substantially on the line 4—4 of Figure 3;

Figure 5 is a perspective view of a further form of the invention;

Figure 6 is a vertical transverse sectional view taken substantially on the line 6—6 of Figure 5;

Figure 7 is a horizontal sectional view taken substantially on the line 7—7 of Figure 6;

Figure 8 is a perspective view of still another form of the invention; and

Figure 9 is a fragmentary vertical transverse sectional view taken substantially on the line 9—9 of Figure 8.

Referring to the drawings in detail, and first to Figures 1 and 2 thereof, the form of the invention therein shown comprises a base plate 10 of substantially rectangular shape having an upper surface 11 on which is secured along one longitudinal side edge thereof an upstanding longitudinally elongated rib 12, defining a work guide. Secured on the upper surface 11 of the plate 10 at one end of the guide 12 is a clamp 14 through which the laterally outward end portion of a flat resilient tongue 16 extends and is releasably clamped. The tongue 16 is preferably provided on its upper side along the longitudinal side edges with scales 18 by means of which its extension across the base plate 10 may be measured. Fixed on the laterally inward side of the tongue 16 and extending laterally inwardly therefrom across the base plate 10 is a rectangular stencil frame 20, on which a suitable stencil 22 is secured in a conventional manner. The tongue 16 is curved longitudinally upwardly and inwardly from the clamp 14, so as to yieldingly hold the stencil frame 20 in upwardly spaced relation to work W positioned on the upper surface 11 of the base plate 10, with a side edge thereof against the guide 12. It will be seen that when an inking squeegee S is passed across the top of the stencil 22 and pressed downwardly, as suggested by broken lines in Figure 2, ink carried by the squeegee will pass through the stencil 22 onto the top sheet of the work W. Obviously, by releasing the clamp 14, the tongue 16 and the stencil frame 20 and the stencil 22 can be removed from the base plate 10, and a new or different tongue, stencil frame, and stencil assembly can be substituted.

The form of the invention, illustrated in Figure 3, comprises a base plate 24 provided adjacent one longitudinal side edge with an upstanding longitudinal rib 26 defining a work guide, and at one end of the guide 26 longitudinally spaced clamps 28 and 30 are secured on the upper surface 25 of the base plate 24. On the upper surface 25 of the plate 24 at the side thereof remote from the clamps 28 and 30 is secured a block 31 having a slot 32 extending therethrough. The slot 31 is upwardly spaced from the upper surface 25 of the base plate 24.

A stencil frame 34 has on adjacent one longitudinal side edge thereof longitudinally spaced tongues 36 and 38 which are received in the clamps 28 and 30, respectively, and are provided on their upper surfaces with scales 40 for indicating distance between the stencil frame 34 and the guide 26. Fixed on and extending laterally from the frame 34 on the side thereof remote from the tongues 36 and 38 is a resilient tongue 42 which, as illustrated in Figure 4, engages in the slot 32 and cooperates with the tongues 36 and 38 in holding the stencil frame in spaced relation above work W resting on the upper surface 25 of the base plate 24 against the guide 26. A suitable stencil 44 is carried by and extends across the stencil frame 34 so that when a squeegee or the like is passed across the upper surface of the stencil 44 with downward pressure, the stencil 44 and the stencil frame 34 will be depressed, against the resistance of the tongues 36, 35 and 42, and ink carried by the squeegee will be passed through the stencil 44 onto the top sheet of the work W.

The form of the invention illustrated in Figures 5 to 7, designed for use without a base plate, comprises a stand, generally designated 46, having a base 48 having thereon an upstanding clamp body 50 having an opening 52 extending transversely therethrough. Mounted within the opening 52 for vertical movement therein is a clamp 54 comprising a lower plate 55 and a movable upper plate 57 having a central socket boss 59 on its upper side. A vertical clamping screw 56 is threaded through the top wall 51 of the body 50 and has its lower end 53 secured in the socket boss 59 by retaining means 61.

A downwardly bowed leaf spring 62 is positioned between the upper and lower clamp plates 51 and 55 and is secured at one end to an adjacent end of the upper plate 57, as indicated at 63. A stencil frame 66 is provided with a conventional stencil 68, and has a tongue 64 thereon positioned between the spring 62 and the lower clamp plate 55, and the frame 66 may be raised or lowered relative to a supporting surface, upon which the base 48 rests, by turning the screw 56.

The form of the invention illustrated in Figures 8 and 9 comprises a clamp body 70 provided with a slot 72 extending therethrough, wherein is longitudinally positioned a downwardly bowed leaf spring 76, which is secured at one end to an end of the body 70, as indicated at 74. A tongue 78 on a stencil frame 80 is frictionally held in the slot 72 by the spring 76. A handle 82 is secured on the upper side of the body 70 and extends upwardly and longitudinally beyond one end of the body 70, to enable carrying the stencil 84 to a selected position over work to be stenciled.

In all forms of the invention herein described, the resilience of the tongues and stencil frames serves in all cases to hold the stencil frames above the work until depressed by application of inking squeegees thereto with downward pressure.

While in the foregoing there have been shown and described preferred embodiments of this invention, it is to be understood that minor changes in the details of construction, combination and arrangement of parts may be resorted to without departing from the spirit and scope of the invention as defined by the subjoined claims.

What is claimed is:

1. A manual duplicator comprising a body, clamp means on said body, a stencil frame having resilient tongue means extending from a side thereof and engaged in said clamp means, and elevating means associated with said tongue means and said clamp means acting to resiliently hold the stencil frame elevated above the level of a support on which said body is supported.

2. A manual duplicator according to claim 1, wherein said body comprises a base plate having an upper surface, said clamp means being positioned above said upper surface with the said tongue means and the stencil frame extending across the upper surface of the base plate, said elevating means comprising a portion of said clamp means and a longitudinally and upwardly curved portion of said tongue means.

3. A manual duplicator according to claim 1, wherein said body comprises a base plate having an upper surface, said clamp means being positioned above said upper surface with the said tongue means and the stencil frame extending across the upper surface of the base plate, said elevating means comprising a portion of said clamp means and a longitudinally and upwardly curved portion of said tongue means, said tongue and said stencil frame being otherwise unsupported.

4. A manual duplicator according to claim 1, wherein said tongue means comprises two spaced tongues and said clamp means comprises two clamps in which the two tongues are severally engaged.

5. A manual duplicator according to claim 1, wherein said tongue means comprises two spaced tongues and said clamp means comprises two clamps in which the two tongues are severally engaged, said stencil frame having a further tongue opposite said two tongues, and said body has thereon a block having a slot receiving said further tongue, said slot being elevated above said level.

6. A manual duplicator according to claim 1, wherein said body has a base to rest upon a supporting surface, and is provided with an opening extending through the body and defining a top wall on said body, and said clamp means comprises an element having vertically spaced upper and lower plates, said element being mounted for vertical movement in said opening, a bowed leaf spring positioned between said plates and secured to one of said plates, said tongue means comprising a tongue positioned between said leaf spring and one of said plates, and a screw threaded through said top wall having a lower end secured to said upper plate.

7. A manual duplicator according to claim 1, wherein said body has a slot extending therethrough, a bowed leaf spring extending lengthwise of said slot and secured to said body, and said tongue means comprises a tongue positioned in said slot between said spring and a side of the slot.

8. A manual duplicator according to claim 1, wherein said body has a slot extending therethrough, a bowed leaf spring extending lengthwise of said slot and secured to said body, and said tongue means comprises a tongue positioned in said slot between said spring and a side of the slot, said body having a top, and a longitudinal handle having an end secured to said top and extending beyond an end of said body.

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