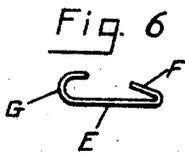
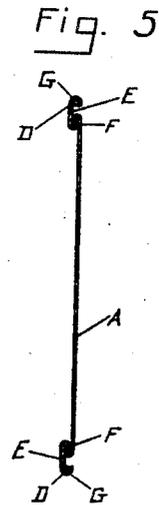
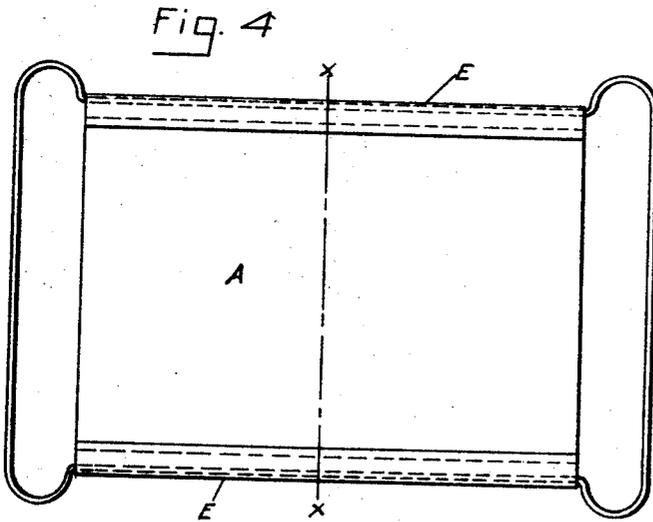
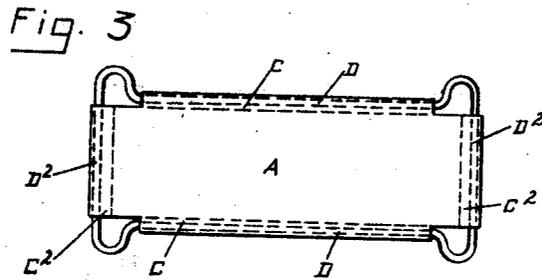
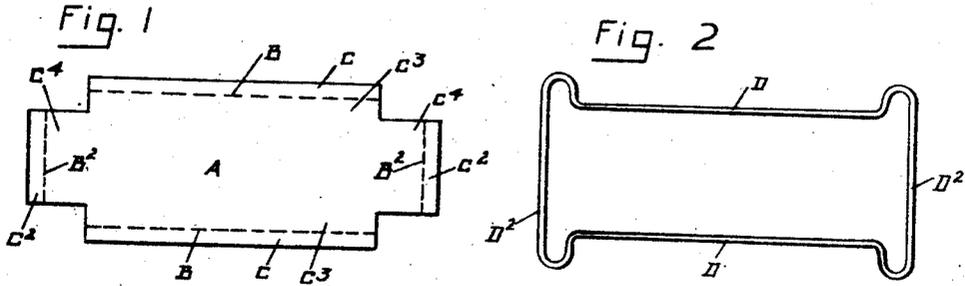


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E. E. GRAY
STENCIL FRAME

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UNITED STATES PATENT OFFICE.

ELMER E. GRAY, OF SAUGUS, MASSACHUSETTS.

STENCIL FRAME.

Application filed May 6, 1925. Serial No. 28,488.

To all whom it may concern:

Be it known that I, ELMER E. GRAY, citizen of the United States of America, residing at Saugus, in the county of Essex and Commonwealth of Massachusetts, have invented certain new and useful Improvements in Stencil Frames, of which the following is such a full, clear, and exact description as will enable others versed in the art to which it appertains to make and use the same.

My invention relates to stencil frames in general, and more particularly to the type assembled with stencil sheets adaptable for typewriter cutting.

It has for its objects to provide a spring stencil frame adaptable to automatically hold the stencil sheet taut; to provide a new and novel reinforcement for the stencil sheet at its point of contact with the stencil frame; to provide an improved means of securing the stencil material to the stencil frame; to increase the efficiency and wearing qualities of stencil sheets; to provide a new and novel stencil construction advantageous for stacking and storage purposes; to materially increase the available printing surface of stencils intended for use on machines of standard dimensions; to eliminate the blurred effect commonly seen on stencil printing; to materially reduce the cost of manufacture; to simplify and minimize the size and cost of manufacturing equipment; to provide a stencil surface of demountable construction particularly adaptable for use on stencil frames of major sizes; and to provide the other advantages and results made evident from the following specification.

It is well recognized that in the use of the ordinary commercial stencil, the operation of cutting same on the typewriter, or the use after cutting, or careless handling, as well as various other causes, expand the stencil material and create a buckling and sagging thereof on the holding frame. This sagging results in the stencil material contacting with other stencils when stacked, allows the letters and characters cut on the stencil material to fill with ink, and produces a blurred effect when used. A major purpose of my improved stencil frame is to eliminate these disadvantages.

The optional demountable stencil construction herein referred to and described is intended to fill the demand for stencils of

sufficient size and proportion to provide for the reproduction of letter composition, the demountable feature allowing free insertion of the stencil material in an ordinary commercial typewriter.

I accomplish the objects of my invention as shown in the accompanying drawings, in which Figure 1 shows the stencil material-unit. Figure 2 shows my improved spring tension stencil frame. Figure 3 shows the stencil material mounted on the spring frame. Figure 4 shows an optional construction of my stencil particularly adaptable for major sizes. Figure 5 shows a cross sectional view of my stencil material on the line X—X in Figure 4. Figure 6 shows the detail of the frame engaging member shown in Figures 4 and 5.

In the following description, similar letters of reference refer to similar parts throughout the several views.

As shown, in Figure 1, the stencil A comprises a body portion having side and end marginal portions C—C and C²—C² creased along the dotted lines B—B and B²—B², respectively, to fold about the sides and ends of the stencil frame and be secured by proper adhesive to the stencil material at C³ and C⁴. The stencil frame is effectively made from spring wire and is shaped to present oppositely disposed parallel stencil-holding side and end portions D—D and D²—D² resiliently connected together at their adjacent ends by a connecting bend of wire as shown, the bends serving to permit the stencil-holding portions to be flexed inwardly of the frame for a purpose hereinafter explained.

The stencil is made smaller both in length and width than the stencil frame so that when attaching the stencil to the frame it is necessary to flex the sides D—D and the ends D²—D² inwardly to an extent sufficient to permit the marginal portions C—C and C²—C² to be folded thereover and secured in place as seen in Figure 3. Hence, by reason of its shorter sides, the stencil tends to hold the sides and ends of the frame compressed or flexed inwardly of the frame while the tendency of the said sides and ends to regain their normal position under pressure from the spring bends at the corners of the frame serves to stretch and hold the stencil taut in the frame. The device may be made to fit any of the various

addressing machines on the market or to function with any other appropriate mechanism.

A stencil with detachable frame-engaging means is shown in Figures 4 to 6 inclusive. In this case, the stencil A is provided along each longitudinal edge with a detachable frame-engaging unit E comprising a strip having a marginal portion F along one side which folds over and holds the edge of the stencil material A; the opposite side of the strip being provided with a bent-over marginal portion G which is adapted to hook over a side of the stencil frame to hold the stencil in place. The detachable frame-engaging units E are preferably formed from spring steel, but other suitable materials may, however, be used.

While I have illustrated and described a preferred construction for carrying my invention into effect, this is capable of variation or modification without departing from the spirit of the invention. I therefore do not wish to be limited to the exact details of construction herein set forth but desire to avail myself of such variations and modifications as come within the scope of the appended claims.

Having thus described my invention I claim as new and desire to secure by Letters Patent of the United States of America:

1. In a device of the kind described, a reinforcement of the stencil material comprising an overlapping of said material about the stencil frame, said overlapping portion being secured to the body of the stencil material adjacent to the frame by a suitable adhesive.

2. In a device of the character described, a resiliently flexible stencil-holding frame and a stencil adapted to be engaged with the said frame and being of smaller size than the frame, said frame being resiliently compressible to a size to permit attachment of the said stencil thereto and being adapted by its resiliency to hold the stencil taut.

3. In a device of the character described, a resiliently flexible stencil-holding frame and a stencil stretched between opposite stencil-holding portions of the frame and tending to hold the said frame compressed at the said holding portions whereby the resiliency of the said compressed holding portions will tend to maintain the said stencil in a stretched and taut condition within the frame.

4. In a device of the character described, a resiliently flexible stencil-holding frame of spring wire and a stencil adapted to be supported within the frame and having means at opposite ends for engaging over portions of the said frame, said stencil being smaller than the frame and the said frame being compressible inwardly to permit attachment thereto of the said stencil.

5. In a device of the character described, a resiliently flexible stencil-holding frame presenting oppositely disposed parallel stencil-holding portions resiliently connected at adjacent ends and a stencil connected at its ends to the said stencil-holding portions so as to hold the said portions flexed inwardly of the frame whereby the tendency of the said portions to spring outwardly will stretch and hold the stencil taut within the frame.

6. In a device of the character described, a resiliently flexible stencil-holding frame formed of spring wire presenting oppositely disposed parallel stencil-holding portions and a connecting bend of spring wire at adjacent ends of the said stencil-holding portions, and a stencil connected at its ends to the said stencil-holding portions so as to hold the said portions flexed inwardly of the frame against the tension of the said stencil-holding ends whereby the said stencil will be stretched and held taut within the frame by the tendency of the said stencil-holding portions to spring outwardly under pressure of the said frame.

7. In a device of the character described, a resiliently flexible stencil-holding frame formed of spring wire presenting oppositely disposed parallel stencil-holding portions and a sheet of stencil material presenting a body portion having marginal extensions overlapping the said stencil-holding portions of the said frame and secured to the body portion of the stencil material, said sheet being smaller in length and width than the said frame to necessitate the temporary flexing inwardly of the stencil-holding portions of the frame to permit the overlapping thereof by the said marginal extensions whereby the said sheet is adapted to be stretched and held taut within the said frame by the tendency of the said holding portion to spring outwardly against the holding action of the stencil.

8. In a device of the character described, a resiliently flexible stencil-holding frame presenting oppositely disposed parallel stencil-holding portions, a stencil between the said stencil-holding portions of the frame, said stencil being of a width slightly less than the distance between the said parallel stencil-holding portions, frame-engaging units secured to respectively opposite edges of the stencil and being adapted to engage over the said stencil-holding portions of the said frame when said portions are flexed inwardly to permit such engagement, said stencil being stretched and held taut within the frame by the tendency of the said holding portions to exert a spring tension in the directions away from said stencil.

In testimony whereof I affix my signature.

ELMER E. GRAY.