W. T. BENJAMIN.

MACHINE FOR MARKING BUTTONHOLES.

APPLICATION FILED SEPT. 21, 1914.

1,156,580.

Patented Oct. 12, 1915.

2 SHEETS—SHEET 1.

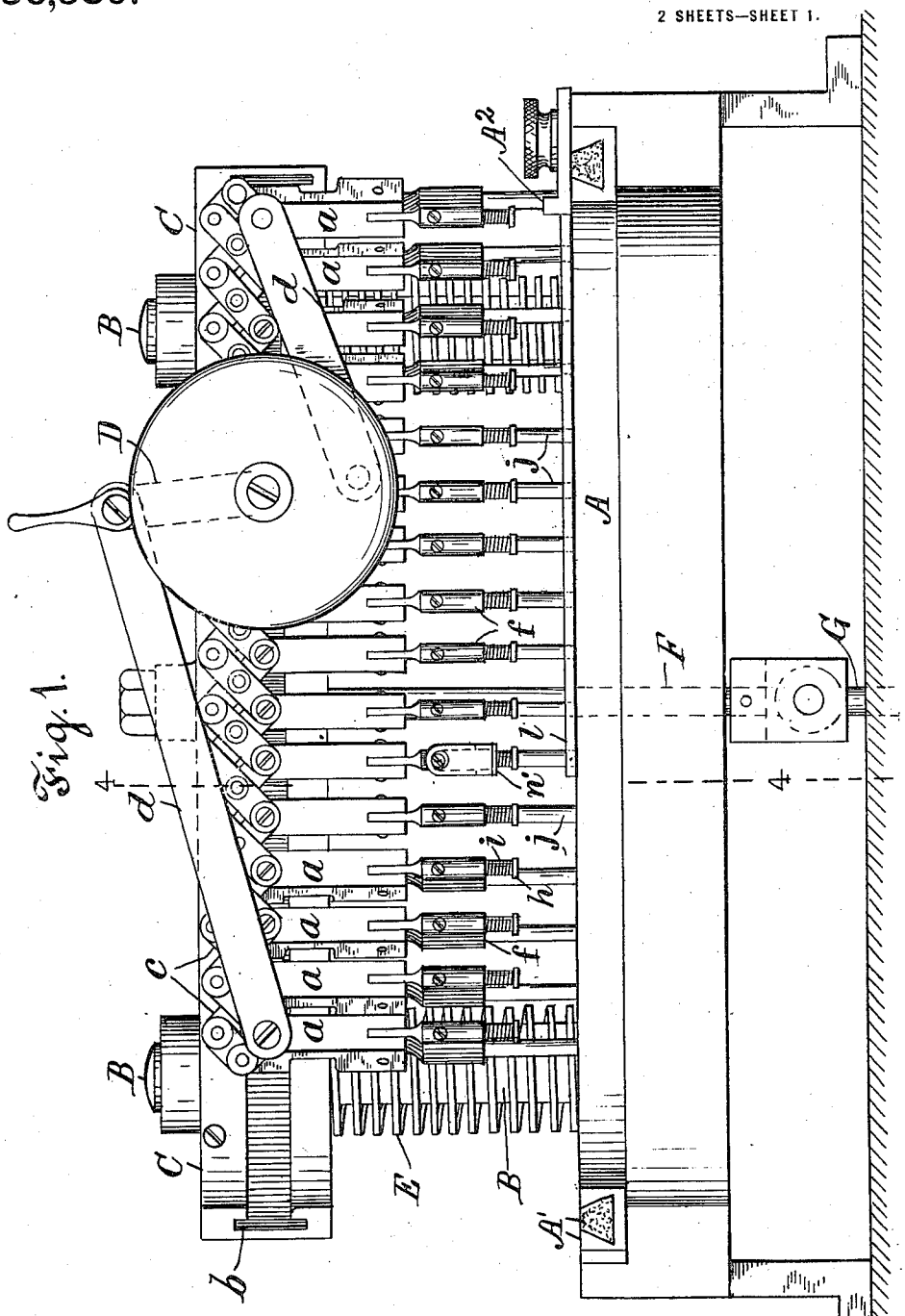


Fig. 1.

Witnesses:
L. Lee.
J. Walter Greenbower.

Inventor
William T. Benjamin,
per Thomas S. Crane, atty

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2 SHEETS—SHEET 2.

Fig. 2.

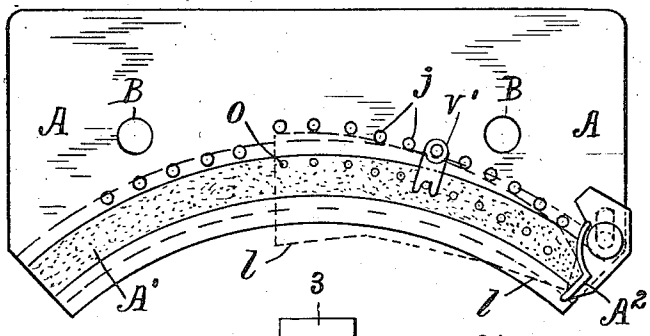


Fig. 11.

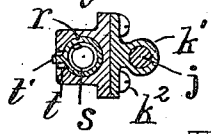


Fig. 5.

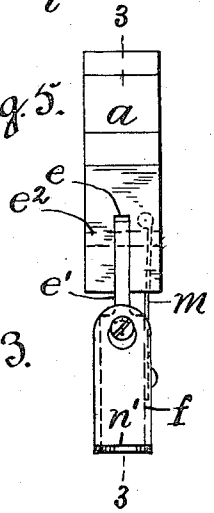


Fig. 7.

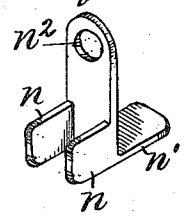


Fig. 6.

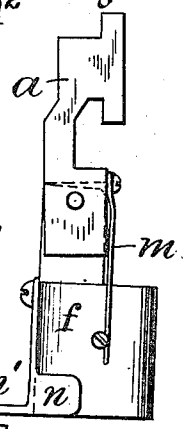


Fig. 3.

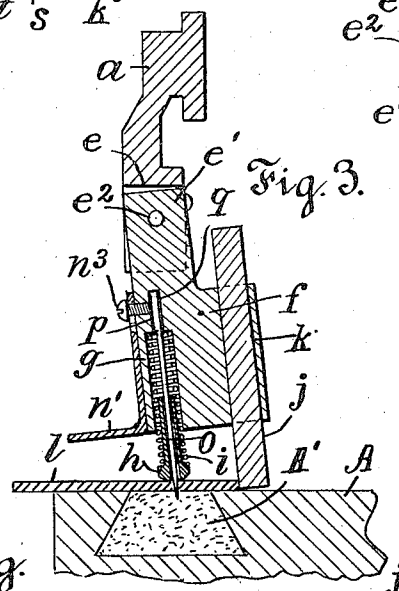


Fig. 4.

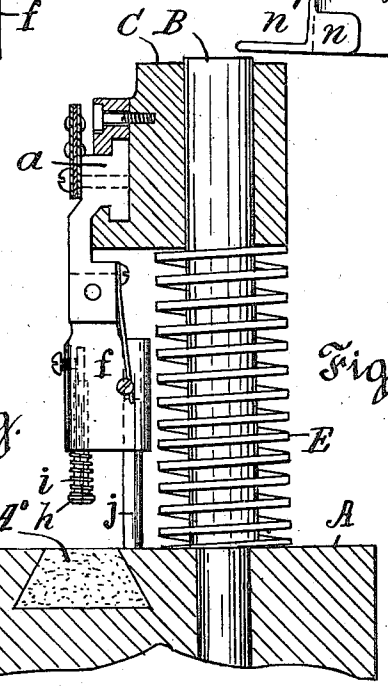


Fig. 8.

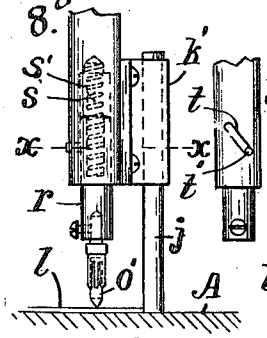


Fig. 9.

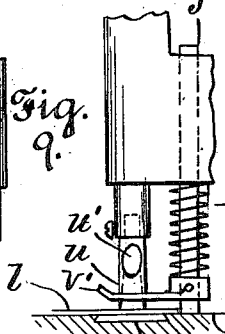


Fig. 10.

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UNITED STATES PATENT OFFICE.

WILLIAM T. BENJAMIN, OF NEWARK, NEW JERSEY, ASSIGNOR TO SHOE MANUFACTURERS' SUPPLY COMPANY, OF NEWARK, NEW JERSEY, A CORPORATION OF NEW JERSEY.

MACHINE FOR MARKING BUTTONHOLES.

1,156,580. Specification of Letters Patent. Patented Oct. 12, 1915.

Application filed September 21, 1914. Serial No. 862,660.

To all whom it may concern:

Be it known that I, WILLIAM T. BENJAMIN, a citizen of the United States, residing at 10 Cypress street, Newark, county of Essex, and State of New Jeresy, have invented certain new and useful Improvements in Machines for Marking Buttonholes and for Analogous Uses, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

The object of the present invention is to furnish a gage to use in connection with the marker which is employed in various machines for marking the location of buttonholes upon the buttonhole-fly of a shoe, and the invention furnishes an attachment or gage for such markers by which each one may be set separately at the proper distance from the edge of the fly.

Heretofore, buttonhole marking machines have been provided with a series of markers sustained by carriers adjustably upon a support, so that the marks upon the fly might be made at distances apart; but such carriers have always been guided by their support in a fixed line or curve, which line or curve did not conform with the outline of the buttonhole-fly, and the various markers could not therefore mark the fly at the same distance from the edge thereof. In the present invention, I combine a gage directly with the carrier or the holder which sustains the marker, and I hinge the holder upon the carrier so that each holder, with its marker and independent gage, may, by a lateral movement upon the carrier, accommodate itself to the edge of the fly wherever the gage may touch it.

The invention embraces markers having vertically movable gages to set them at the proper distance from the edge of the fly, and carriers having the markers movable thereon (as by a hinge, or otherwise) so that each marker may automatically adjust itself to the fly where its gage contacts therewith.

The apparatus embodying the invention may be used for marking not only a buttonhole-fly, but a tip or foxing of a shoe. The marker may consist of a piercer, a crayon, or a punch adapted to form a hole, and the holder may be made to receive any of these implements for operating upon the fly. The fly or other object to be marked by a needle or punch may be supported upon a strip of felt or other yielding porous fabric, as paper, pasteboard, or other renewable substance.

The invention includes a spring-stripper carried by the holder which sustains the marker, and operating upon the material adjacent to the marking points to yield during the marking operation, and then operating to strip the material from the marking implement.

Where a crayon is used, its shank may be mounted rotatably upon the holder and actuated by a spring and a pin in a spiral slot, to yield when pressed upon the material, and rotate during such yielding to make an effective mark.

These improvements with others claimed herein, are illustrated in the annexed drawing, in which—

Figure 1 is a front elevation of a machine embodying the invention; Fig. 2 is a plan of the bed-plate; Fig. 3 is a section of one of the carriers on line 3—3 in Fig. 5; Fig. 4 is a vertical section on line 4—4 in Fig. 1; Fig. 5 is a front view of one of the carriers with a holder hinged thereon; Fig. 6 is a side view of the same; and Fig. 7 is an index applicable to any of the holders for setting the same even with the end of the fly. Such index is shown in Figs. 3, 5 and 6. Fig. 8 is a side view of the holder showing the connection of a crayon therewith; Fig. 9 is a front view of the holder with the crayon shank fitted rotatably thereto; Fig. 10 is a side view of the holder with a punch carried thereby; and Fig. 11 is a section on line *x*—*x* in Fig. 8.

The improvements are illustrated in connection with the marking machine shown in my Patent No. 1,101,989, granted June 30, 1914, but the improvements are applicable to any other machine having a series of carriers to support markers.

A designates a bed-plate having posts B extended upward therefrom to movably support a crosshead C, which has a series of carriers *a* fitted to a groove *b* therein. The crosshead sustains the carriers in a curve over the seat A′ shown on the bed in Fig. 2, over which seat the markers operate. An end-gage A^2 is shown secured adjustably at one end of the seat. The carriers are shown connected by crossed links *c* forming a lazy-tongs, the carrier at the right-

hand end of the series being secured in the crosshead and a double crank D being journaled upon one of the carriers and connected by links *d* with the carriers at opposite ends of the series, to adjust them upon the crosshead for spacing the markers at a suitable distance apart. Springs E are shown between the crosshead and the bed to hold the crosshead normally raised, and a rod F is shown with part of a treadle-link G by which the crosshead may be pressed downward during the marking operation.

Each carrier is formed with a slot *e* in its lower end to receive a tongue *e'* upon a holder *f*, by which the marker is carried, such tongue being pivoted in the slot by pin e^2. The holder is shown with a vertical socket *g* which receives the shank of the marker, and may also receive the shank of a stripper and a spring to operate the same. Such construction is shown in Figs. 3 and 4, the marker being a needle or piercer *o* having a shank *p* inserted in the bore *q* at the top of the socket *g*.

A stripper consisting of a sleeve with a collar *h* at the bottom is fitted movably to the bottom of the needle, and a spring *i* is applied to the socket *g* and to the sleeve to press the collar toward the point of the needle. The upper end of the spring is fitted tightly in the socket *g* to support the stripper when the crosshead is raised.

The individual gage for the marker is shown formed of a gage-bar *j* fitted to a vertical hole *k* upon the holder *f* at the rear side of the needle, and at a suitable distance therefrom to set the needle in the desired relation to the rear edge of the fly *l*, which is indicated in section in Fig. 3 and in dotted lines in Fig. 2.

The pin e^2 permits the holder to swing back and forward on the carrier *a*, and the upper corners of the tongue, to which the letter *e'* is applied in Fig. 3, act as stops to limit the lateral movement of the marker upon the carrier.

A spring *m* attached to the carrier, presses the holder normally forward, as shown in Fig. 6, when the crosshead raises the markers from the bed-plate, but the gage-bars *j* are not elevated with the markers, as they slide freely in the holes *k*, and they therefore rest upon the plate A in any position of the crosshead or markers. They therefore stand in readiness when the fly *l*, or other object to be marked, is applied to the end-gage A^2 upon the bed-plate.

The fly, or article to be marked, is laid upon the seat A' and pressed backwardly against the gages *j*, which force the holders backward in conformity with the outline or contour of the article, upon its rear edge. Such backward movement of the holders moves the markers into corresponding positions, as indicated by the circles *o* in Fig. 2. When the crosshead is lowered to press the markers upon the article (or material to be marked), the marks are therefore made at a uniform distance from the rear edge of such article, as indicated in Fig. 2. To support the material adequately under the markers when moved to such different positions, I employ a seat A' formed of yielding fibrous substance like felt, which is shown in Fig. 3 inserted in a dovetail groove in the bed-plate A, such felt forming a seat wide enough to compensate for all positions of the markers. The width of the groove and of the seat therein must be wide enough to compensate for all lateral movements of the holders upon the carriers, when such movements are produced by the edge of a fly, tip or foxing, pressing against the gage associated with each marker.

It has been common to use a slot in the bed-plate to clear the point of a piercer, but a slot as wide as the seat A' could not be used, as it would not adequately support the material.

A guide is made to fit adjustably upon any of the holders, to designate the setting of the carriers upon the crosshead in correspondence with the length of the article to be marked. Such guide is shown with elastic cheeks *n* adapted to embrace the sides of the holder, as shown in Figs. 5 and 6, and having a finger-piece *n'* for applying it, and if desired, a hole n^2 in its upper end to fit over a screw n^3 which is provided to clamp the shank *p* of the needle in the bore *q*. The guide is shown in Fig. 1 upon the eleventh holder, even with the end of the fly *l* lying upon the bed-plate A in contact with the end-gage.

Where a pencil or crayon *r* is used, its shank *s* is fitted to the socket *g* in the holder and pressed normally downward by a spring *s'*. An inclined slot *t* is shown in the holder at the side of the socket, and a pin *t'* projects from the shank *s* into such slot so as to twist or rotate the shank and crayon when the shank is pushed upwardly. The downward movement of the crosshead thus brings the crayon first into contact with the material indicated at *l* in Fig. 8, and then the slot, as the movement continues, operates to twist the crayon and thus effectively mark the material. No yielding seat is required with the crayons.

Where it is desirable to mark the articles by punching holes therein, a punch *u* is held detachably upon the holder, the cuttings passing upward within the punch and escaping by the hole *u'*. A seat A^2 of paper, or other renewable material, may be used with such punch.

When the punch is used, a stripper may be fitted to its exterior, as to the needle *o* shown in Fig. 3, or the stripper may be combined with the gage *j* by applying a spring

v to press the gage-bar downward, and securing a foot v' upon the gage-bar to act as a stripper. Such foot may be curved upwardly at the forward end to facilitate the insertion of the article to be marked, and may be forked, as shown in Fig. 2, to embrace the punch.

The fitting of the gage-bar to a hole k formed in the holder f operates to set the marker at a fixed distance from such gage, and where it is desired to vary the distance from the edge of the article at which the marks shall be applied, the gage-bar may be mounted in a separate holder-block k', secured upon the rear side of the holder by screws k^2, or otherwise, as shown in Figs. 8 and 11. Such block k' may be made to hold the gage-bar movably at any distance in the rear of the marker.

Fig. 3 shows the holder swung considerably backward upon the carrier a, as would be the case with the carriers over the left-hand end of the fly l shown in Fig. 2, and such backward movement of the holder is effected by the pressure of the fly l against the gage-bar before the needle is depressed sufficiently to mark the fly.

The invention is obviously applicable to machines for marking any articles, as a tip or foxing of a shoe, having an irregular outline upon its edge, and which requires marks made at a uniform distance from such edge; and my claims therefore cover all such uses of the invention.

I have claimed herein a gage mounted upon a carrier, because a gage fitted movably to a hinged holder is also sustained by the carrier and moved vertically thereby, and because all gages heretofore used in such marking machines have been attached to the bed-plate and not to any carrier for a marker.

Having thus set forth the nature of the invention what is claimed herein is:

1. In a buttonhole marking machine, the combination, with a supporting plate, of a crosshead movable to and from the plate with a series of carriers adjustable upon the crosshead, each carrier having a marker and a vertical socket with a gage-bar mounted movably therein at a suitable distance from the marker and resting normally upon the plate to gage the edge of the material in relation to the marker.

2. In a buttonhole marking machine, the combination, with a supporting plate, of a crosshead movable to and from the plate with a series of carriers adjustable upon the crosshead, a holder hinged to move laterally upon each carrier and provided with a marker and with a vertical socket having a gage-bar mounted movably therein at a suitable distance from the marker, and resting normally upon the plate to gage the edge of the material in relation to the marker.

3. In a buttonhole marking machine, having a supporting plate, a crosshead movable to and from the same and a series of carriers adjustable upon the crosshead; the combination, with each carrier, of a holder pivoted to swing laterally thereon, and provided with a marker and with a spring-stripper operating in connection with the marker, and with a gage-bar movable vertically upon the holder and resting normally upon the plate to gage the edge of the material in relation to the marker.

4. In a buttonhole marking machine, the combination, with a supporting plate, of a crosshead movable to and from the same, a series of carriers adjustable upon the crosshead, a holder hinged upon each carrier and provided with a marker, a spring connecting the carrier and holder to press the holder normally forward, and a finger-piece with means for securing it detachably to one of the holders for gaging the end-mark upon the material.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

WILLIAM T. BENJAMIN.

Witnesses:
J. W. DENNY,
M. F. TOMPKINS.