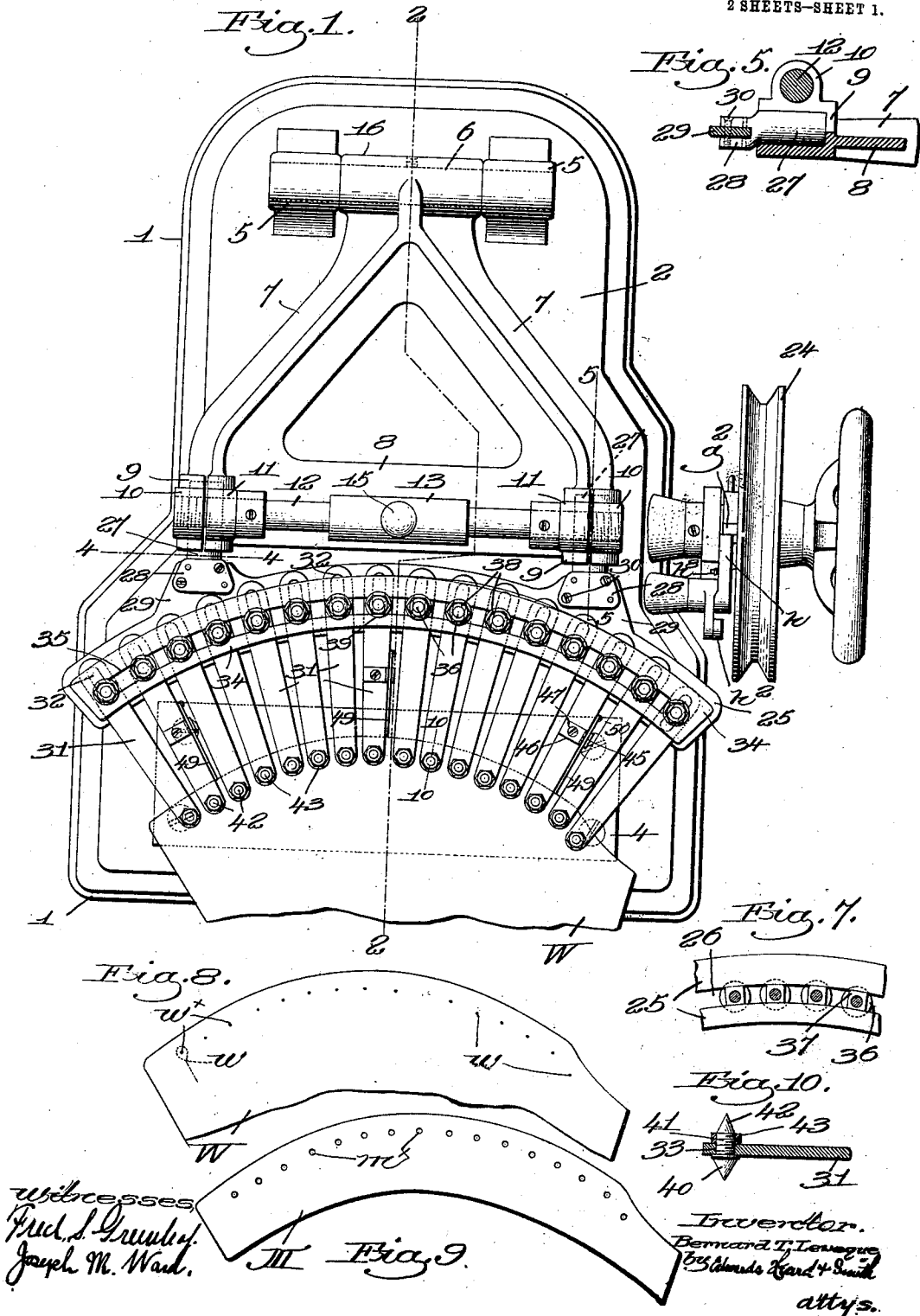


B. T. LEVEQUE.
 BUTTONHOLE AND BUTTON LOCATION MARKING MACHINE.
 APPLICATION FILED FEB. 27, 1911.

1,014,657.

Patented Jan. 16, 1912.

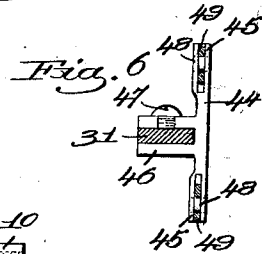
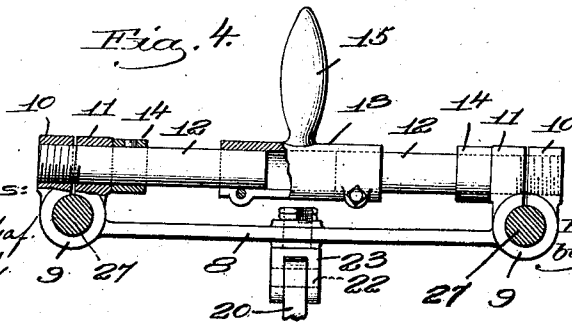
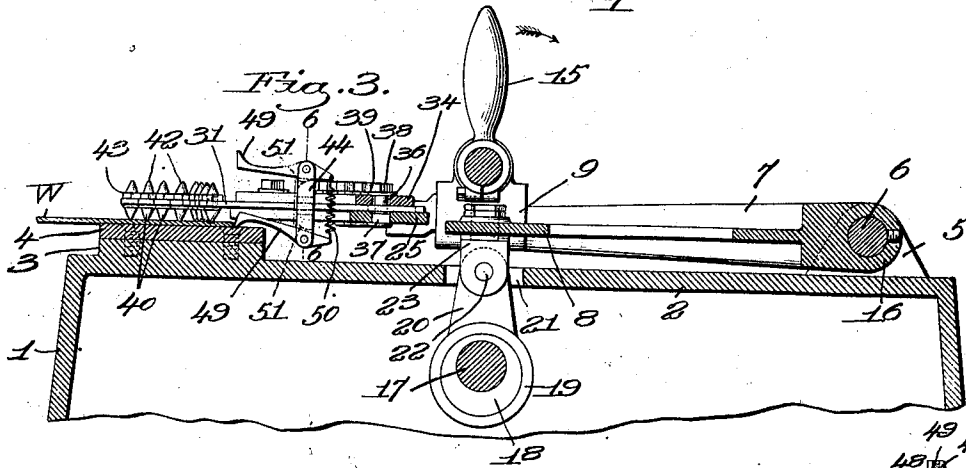
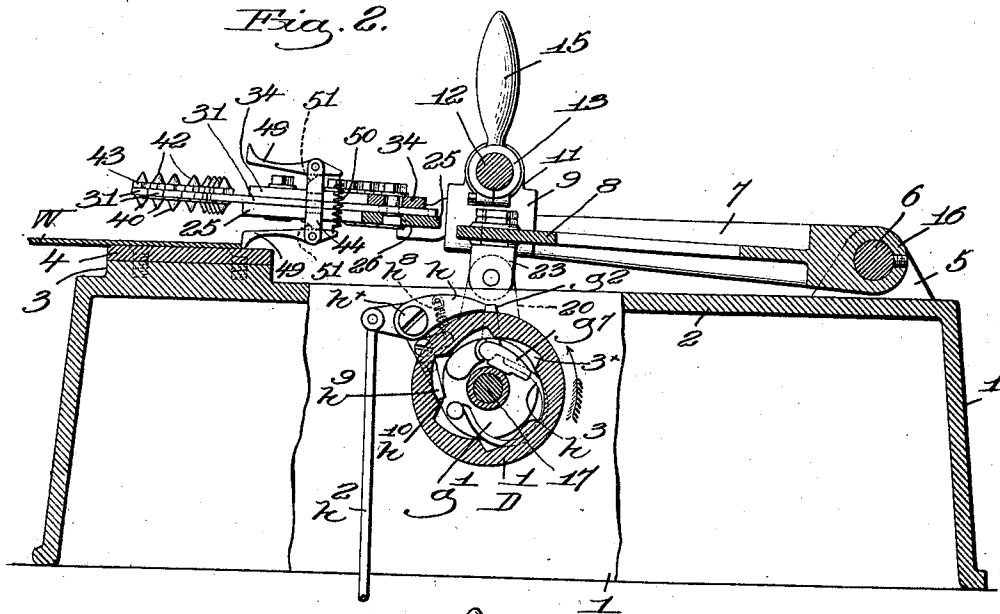
2 SHEETS—SHEET 1.



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 2 SHEETS-SHEET 2.



Witnesses:
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UNITED STATES PATENT OFFICE.

BERNARD T. LEVEQUE, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO THE REECE BUTTON HOLE MACHINE COMPANY, OF BOSTON, MASSACHUSETTS, A CORPORATION OF MAINE.

BUTTONHOLE AND BUTTON LOCATION MARKING MACHINE.

1,014,657.

Specification of Letters Patent.

Patented Jan. 16, 1912.

Application filed February 27, 1911. Serial No. 611,055.

To all whom it may concern:

Be it known that I, BERNARD T. LEVEQUE, a subject of the King of Great Britain, and resident of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Buttonhole and Button Location Marking Machines, of which the following description, in connection with the accompanying drawing, is a specification, like characters on the drawing representing like parts.

This invention has for its object the production of an improved machine for marking on leather or other fabric the exact location for a set of buttonholes or buttons, whereby in subsequent operations, such as the making of the buttonholes or the attachment of the buttons, the time and labor required to perform the operation are reduced very materially and the buttons or buttonholes are accurately positioned upon the work and correctly spaced.

My invention is particularly adapted for marking the location for a set of buttonholes on the buttonhole strip of a shoe, and I have so constructed and arranged the mechanism that when the marking devices have been properly set or adjusted for either a "right" or a "left" set the other set can be marked by a simple reversal of the head which carries the marking devices.

In the present embodiment of my invention the marking members are individually adjustable both laterally and in and out with relation to the head which supports them, so that any desired arrangement or location of the positions to be marked can be made.

The various novel features of my invention will be fully described in the subjoined specification and particularly pointed out in the following claims.

Figure 1 is a top plan view of the marking machine embodying one form of my present invention, showing the set or series of marking devices in adjusted position to mark a left-hand buttonhole strip; Fig. 2 is a longitudinal section thereof the greater part of which is taken on the line 2-2, Fig. 1, looking toward the left, with the machine at rest and in readiness to be set in operation, the clutch at the right hand side of the base being shown in section; Fig. 3 is a similar view but showing the

marking devices in coöperation with the work to mark the desired locations thereon; Fig. 4 is a transverse sectional detail, on the line 4-4, Fig. 1, and partly in section, of the means for clamping the head in the carrier; Fig. 5 is a detail in elevation and part section on the line 5-5, Fig. 1, through one of the clamping seats shown in Fig. 4; Fig. 6 is a detail, partly in section on the line 6-6, Fig. 3, of the edge-gage device, to be referred to; Fig. 7 is a detail of a portion of the head, to be described; Fig. 8 is a plan view of a buttonhole strip showing the buttonhole locations marked thereon; Fig. 9 is a plan view of a gage or templet for setting or adjusting the marking devices; Fig. 10 is an enlarged sectional detail of one of the marking devices, on the line 10-10, Fig. 1.

In Figs. 1, 2 and 3 of the drawing 1 is a cast-iron or other suitable base, to sustain the operative parts of the machine, the front of the flat top 2 having a rectangular, transversely extended raised portion 3 on which is fixedly mounted a flat work-bed 4, preferably a piece of thick leather.

At the back of the base ears 5 on the top 2 form bearings for a transverse rock-shaft 6 attached to the rear end of a yoke-like carrier comprising divergent arms 7 and a connecting cross-plate 8 at the front ends thereof, the front end of the carrier being a short distance behind the work-bed and fulcrumed in parallelism therewith.

The front and separated ends of the carrier arms are shaped to present two parallel split hubs 9 constituting contractile seats, the opposite sides of each seat having upright tubular ears 10, 11, the bores of said ears being alined transversely of the base 1 and at right angles to the axes of the seats 9, as shown in Figs. 1 and 4, the outer ears 10 being tapped to present right and left hand threads.

A two-part controlling rod 12 is fixedly connected centrally by a split sleeve 13 clamped to the inner ends of the two parts, as shown in Fig. 4, the outer ends of said parts passing loosely through the ears 11 and at their extremities threads engage the ears 10. Collars 14 fixed on the controlling rod just inside the ears 11 prevent longitudinal movement of the rod, but when the latter is rotated in one direction or the other

by the handle 15 the ears 10 will be drawn inward to close the seats 9, or moved outward to open said seats, as will be apparent. The controlling rod 12 is preferably made in two parts for convenience in assembling, as each part thereof is passed through an ear 11 and then screwed into the adjacent ear 10, and after the two parts are properly set they are rigidly coupled together by the split sleeve 13. A very slight angular movement of the controlling rod is sufficient to open or close the two seats 9 simultaneously, said seats being at right angles to the carrier fulcrum 6. The latter is held in a heavy hub 16 which is inserted between the ears 5 so that no lateral movement of the carrier is permitted, the casting constituting said carrier being made very rigid and stiff to insure accuracy in the operation of the machine.

A transverse shaft 17 is rotatably supported in suitable bearings at the sides of the base 1, and as shown in Fig. 3 said shaft has an attached eccentric 18, the strap 19 thereof having an ear 20 extended through an opening 21 in the top 2, and said ear is jointed at 22 to a bifurcated lug 23 depending from the cross plate 8 midway between its ends, Fig. 4. Every revolution of the shaft 17 will lower the carrier, as in Fig. 3, and elevate it, as in Fig. 2, and I provide any suitable one-revolution clutch device to operatively connect the shaft with a loose pulley 24 thereon, Fig. 1, and adapted in practice to be driven from any suitable source of power. The direction of rotation of the pulley and shaft is indicated by the arrow in Fig. 2. The clutch therein illustrated is substantially the one shown and described in United States Patent No. 828,844, granted to C. A. Dahl August 14, 1906. Briefly, the hub g' having notch h^{10} and fast on the shaft 17, the clutch dog g^2 having a tail-piece g^7 to at times engage one of a series of pockets 3^x in the interior of plate D' bolted to the loose pulley 24; the spring h^3 normally tending to effect engagement of the tail-piece g^7 with a pocket 3^x ; the dog holder h fulcrumed on a stud h^x projecting from the side of the base 1; the link h^2 connected with a treadle or other manually-controlled device (not shown) and the other adjuncts of the clutch, are and may be all as in said patent.

When the dog holder h is in engagement with the dog g^2 the tail-piece g^7 is withheld from a pocket 3^x , and pawl h^9 is moved by spring h^3 to engage the notch h^{10} to prevent rebound of the hub g' , and at such time the pulley 24 rotates but the shaft 17 is at rest.

To start the machine the link h^2 is drawn down to disengage the dog-holder h and dog g^2 , and immediately the spring h^3 throws the tail-piece h^7 into one of the pockets 3^x and the shaft is rotated with the pulley.

The link h^2 is released immediately after the clutch is thrown in, so that the dog g^2 makes one revolution with the shaft and is then engaged and stopped by the dog-holder h .

No further description of the clutch device or of the operation thereof is necessary to a proper understanding of my invention, as any suitable form of one-revolution clutch can be used instead of the one referred to.

Referring now to Fig. 8, a buttonhole strip is shown at W, and in such strip it is desired to make a series of buttonholes, for instance, of a given number and located at specified distances from each other and from the outer edge of the strip, the position of the first buttonhole being indicated by dotted lines at w .

By means now to be described a series of buttonhole locations are indicated on the strip, the locations being shown by the series of dots w^x .

The rocking carrier 7, 8 has detachably connected with it a reversible head, herein shown as a flat, rigid, and curved metal plate 25 having a segmental slot 26 therein, and the concave edge of the head and slot are toward the front of the machine, as shown. Laterally separated cylindrical lugs 27 have each a widened and bifurcated front end 28 to receive ears 29 on the back of the head, suitable fastenings 30 rigidly connecting the parts, as best shown in Figs. 1 and 5. The lugs 27 are in parallelism and so spaced as to exactly enter the contractile seats 9 on the carrier so that when the seats are closed the head is securely clamped upon the carrier and moves as a unit therewith, said head extending forward to overhang more or less the work-bed 4 and to move toward and from it as the carrier is depressed and raised, respectively.

The head can be clamped either side up, as will be apparent, so that said head is reversible. The head carries a series of separate, independently adjustable marking members, each of such members being shown herein as comprising an elongated flat and resilient metal finger 31, having a longitudinal slot 32 at its inner end and a hole 33, near its outer end, and a marking device, to be described, is carried by each finger. The slotted ends of the fingers are laid upon the head 25, crossing the slot 26 therein, so that the fingers project forward more or less in radial directions, as shown in Fig. 1, and a retaining plate 34 is laid over the fingers, said plate having a segmental slot 35 which registers with the head slot 26. A headed clamping bolt 36, having a portion 37 of its shank squared to enter the slot 26, is passed through the superposed slots 26 and 35, and through the slot 32 of the finger interposed between the head and plate 34, and a nut 38 is then

screwed onto the threaded end of the shank, so that when set up the finger is securely clamped to the head, a washer 39 preferably being interposed between the nut and the plate 34. The squared part 37 of the bolt enters the slot 26 and prevents rotation of the bolt while permitting it to be adjusted laterally in said slot, and by means of the slot 32 the finger 31 can be adjusted longitudinally toward or from the head 25, and the finger can also be swung laterally on its clamping bolt. It will be seen that the clamping fingers are thus adjustable individually in various directions, so that their outer ends can be made to assume a line of any desired curvature, at desired distances from the head, and the front ends of said fingers may be separated from each other more or less, as required. So, too, any finger can be removed bodily from the head without disturbing its fellows, whereby any requisite number and arrangement of marking devices can be used.

In the present embodiment of my invention each marking device comprises a conical or pointed head 40, preferably made of steel, having a central, threaded shank 41 extended from the large end of the head, the end of said shank also being conical or pointed, at 42, Fig. 10, the points of the head and shank being alined with each other. Said pointed ends are at such a distance from each other that when the marking device is fixed on its finger said points will be equally distant from opposite sides of the finger. The shank 41 is passed through the hole 33 in a finger 31 and a nut 43 is set up on the threaded shank, so that the marking device is securely clamped upon the finger, with a marking point at each side thereof.

The marking devices are adjusted conveniently by means of a gage or templet M, Fig. 9, of leather or other suitable material, having indicated thereon at m^x the positions which the buttonholes, or buttons, are to have on the work. The gage is laid on the work-bed 4, the carrier is lowered, and the various fingers 31 are adjusted on the head 25 until all of the marking devices register with the indices m^x of the gage, and then the fingers are clamped in position. It will be manifest that when the work W is laid upon the work-bed 4 and the carrier is depressed the depending points of the series of marking devices will, as the head descends, impinge upon the work and form a series of slight pits or indentations w^x thereon, as indicated in Fig. 8. These marks indicate to the operator when the buttonholes are to be made, or where buttons are to be attached if the machine is used for marking button locations. Now, if the machine is adjusted for a "left" strip, as here shown, all that is necessary for marking "right" strips is to

remove the head 25 from the carrier, turn it over, and replace it, so that while in the first instance the marking heads 40 marked the locations on "lefts" the reversal of the head will cause the pointed ends 42 of the shanks 41 to mark the locations on "rights." Consequently, one setting of the marking members is sufficient for "rights" and "lefts" by a simple reversal of the head 25 in the carrier, saving much time and labor.

It is desirable to provide means to position the edge of the work on the work-bed, and as the marking devices are double-acting, as described, I have provided double-acting edge-gages, and mount the same adjustably on one or more of the fingers 31. An upright bracket 44, Fig. 6, is bifurcated at its upper and lower ends, at 45, and has a central, laterally extended slotted ear 46, which is adapted to embrace a finger 31 and be held firmly thereon by a set screw 47. In each of the bifurcated ends 45 I pivot at 48 an edge-gage 49, the longer arm thereof extending outward toward the marking devices, and the shorter arms are connected by a spring 50, which tends to separate the longer arms.

As shown by dotted lines, Figs. 2 and 3, the bottoms of the bifurcated portions of the bracket are curved at 51 to serve as stops to limit the separation of the longer arms of the gages.

When a bracket is clamped in desired position on a finger 31 the two gages 49 will be located at one side of said finger, Fig. 1, and above and below the same, Figs. 2 and 3, and the spring 51 will serve to hold the free front end of the lower gage against the work-bed irrespective of the position of the carrier and head, so that when they are raised, as in Fig. 2, the operator can slide the work W onto the work-bed until it is positioned by engagement with the lower set of edge-gages 49. Now the clutch is thrown in, and the shaft 17 makes one revolution, depressing the carrier and parts mounted thereon, so that the marking devices mark the work, and then the carrier and said devices are elevated as the machine stops. When the carrier descends the lower or active gages 49 rock upon the work-bed, as shown by comparing Figs. 2 and 3, while still serving to position the work, and the upper or inactive gages are held against the stops 51 by the springs 50.

When the head 25 is reversed the previously active edge-gages become inactive, and the formerly inactive gages now cooperate with the work-bed and become active, so that the work-positioning means is thus double-acting to accord with the reversible feature of the head and marking devices.

The gages can be moved in or out along the fingers 31 which support the brackets 44,

to properly position the work with relation to the marking devices.

The work may vary in thickness, and the resiliency of the fingers 31 compensates for such variations, a finger yielding more or less according to the thickness of the work at the point thereof engaged by its particular marking device.

When the work is of such a character that different patterns, sizes or arrangement of the marking will be called for from time to time it will generally be more convenient to have the requisite number of heads set up or adjusted, each for some particular arrangement or spacing of the marking members, so that when occasion demands the operator will mount in the carrier the head adjusted or set for the work next to be marked, thus obviating the delay attendant upon resetting any single head.

Changes or modifications in details of construction and arrangement may be made by those skilled in the art without departing from the spirit and scope of my invention as set forth in the claims hereunto annexed.

Having fully described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In a machine of the class described, a work-bed, a movable carrier, a head detachably sustained by the carrier and movable toward and from the work-bed, a series of fingers adjustably mounted on the head, a marking device carried by each finger, and an edge-gage for the work, yieldingly connected with the head and movable with it and also relatively thereto.

2. In a machine of the class described, a work-bed, a movable carrier, a head sustained by the carrier and movable toward and from the bed, a series of individually adjustable marking devices mounted on the head, and means to position the work on the bed, said means being mounted adjustably on the head, said head marking devices and work positioning means being bodily movable from the carrier as a unitary structure.

3. In a machine of the class described, a work-bed, a head movable toward and from it, a series of independently adjustable marking devices, individual means to fixedly connect each device in adjusted position on the head, and yielding edge gages for the work, operatively connected with the head and resting on the work-bed to position the work thereon when the head descends.

4. In a machine of the class described, a work-bed, a head movable toward and from the bed, and having a segmental slot extended from one to the other side, a series of fingers each provided at its outer end with an aperture and longitudinally slotted at its inner end to cross the slot in the head, a marking device detachably clamped in the

aperture of each finger, a clamping member extended through the superposed slotted portions of the head and each finger, to clamp the latter in adjusted position on the head, whereby the marking devices are adjustable independently of each other, both laterally and also in the direction of the length of the fingers, and yielding edge gages for the work, each mounted on a finger.

5. In a machine of the class described, a work-bed, a movable carrier, a head detachably sustained by the carrier and movable toward and from the work-bed, a series of marking devices mounted on the head and independently adjustable laterally and also in and out relatively to the head, and separate means to clamp each marking device in individually adjusted position and fixedly connect it with the head, combined with a plurality of devices on the carrier to clamp the head thereupon, and manually operated means to open and close said devices simultaneously.

6. In a machine of the class described, a work-bed, a reversible segmental head overhanging and movable toward and from said bed, a series of longitudinally and laterally adjusted fingers mounted on the head, two marking devices on the outer end of each finger, and individual means to clamp each finger in adjusted position on the head.

7. In a machine of the class described, a work-bed, a head overhanging said bed and movable toward and from it, a series of marking members carried by the head and independently adjustable thereon, and work-positioning means comprising a plurality of yieldable edge-gages, and means to adjustably connect an edge-gage with any one of the marking members, the edge-gages resting upon the work-bed as the head is moved toward it.

8. In a machine of the class described, a work-bed, a head overhanging said bed and movable toward and from it, a series of independently adjustable fingers carried by the head and each provided with a marking device, an edge-gage, a holder in which it is pivotally mounted, means to clamp the holder in adjusted position upon a finger, and a spring to maintain said edge-gage in engagement with the work-bed during the movement of the head toward and from it.

9. In a machine of the class described, a work-bed, a head movable toward and from it, a series of individually adjustable marking members mounted thereon, each comprising a longitudinally and laterally adjustable finger apertured at its outer end, and a marking device comprising a pointed head having a threaded, pointed shank adapted to pass through the aperture in the finger, and a nut to screw on the shank and clamp the device on the finger with the

pointed ends of the head and shank projecting oppositely, whereby the head can be reversed and used for marking rights and lefts.

5 10. In a machine of the class described, a work-bed, a reversible head movable toward and from it, a series of independently adjustable fingers mounted thereon, a double-ended marking device carried by each finger
10 and projecting therefrom, whereby the head can be reversed for marking rights and lefts without readjustment, and double-acting edge-gages adjustably connected with the head to cooperate with and position the
15 work on the bed when the head is moved toward it.

11. In a machine of the class described, a base provided with a work-bed, a carrier fulcrumed on said base, a reversible head detachably mounted on the carrier, and over-
20 hanging the work-bed, individually adjustable double-acting marking devices on the head, and means to rock the carrier and thereby move the head toward and from the
25 work-bed.

12. In a machine of the class described, a carrier, manually controlled means to lower and raise it, a work-bed, a reversible head having a double-acting series of marking de-
30 vices, a clamp on the carrier, to engage and clamp the head in operative position above the work-bed, and work-positioning means adjustably connected with said head.

13. The combination, with a yielding
35 work-bed, a yoke-like carrier adjacent thereto, means to raise and lower the carrier, a reversible head, a manually-operated clamp to connect the same with the carrier, a series of individually adjustable and detach-
40 able fingers on the head overhanging the work-bed, and a marking device on each finger and having alined work-engaging points located on opposite sides of the finger, where-
45 by, by reversal of the head either set of marking points can be used.

14. The combination, with a reversible head having a pair of laterally separated lugs, and a series of independently adjust-
50 able, double-acting marking devices connected therewith, of a rocking carrier having contractile seats to receive the lugs of the head, and manually operated means to open or close said seats simultaneously.

15. In a machine of the class described, a
55 reversible head having laterally separated lugs, a carrier having contractile seats for the reception of the lugs, and means on said carrier to open or close the seats simulta-
60 neously, combined with a series of double-acting marking devices on the head, a work-bed beneath the latter, and means to raise and lower the carrier and attached head, to thereby move the marking devices away from and toward the work-bed, respectively.

65 16. In a machine of the class described, a

base, a work-bed thereon, a carrier fulcrumed on the base adjacent said bed, a reversible head provided with a series of double-acting, individually adjustable mark-
70 ing devices overhanging the bed, means to clamp said head on the carrier in obverse or reverse position, a shaft rotatably mounted in the base, connections between said shaft and carrier to lower and raise the latter at each revolution of the former, and manually
75 controlled means to effect single revolutions of the shaft.

17. In a machine of the class described, a reversible head, a series of fingers adjust-
80 able laterally and longitudinally on the head, individual means to clamp said fingers in adjusted position on the head, and a rising and falling carrier for said head, com-
85 bined with a marking device for the outer end of each finger and comprising a shank extended through and clamped on the finger and pointed at one end, and a pointed head on the other end of the shank, the points of the shank and head being alined and on
90 opposite sides of the finger, whereby one set of points may be used for "rights" and the opposite set for "lefts" by reversal of the head in the carrier.

18. In a marking machine, a head, a series of elongated, longitudinally and later-
95 ally adjustable and independent fingers mounted thereon, a marking device carried by each finger and projecting therefrom, an edge-gage, a bracket on which it is pivoted, a lateral, slotted ear on the bracket to
100 embrace a finger, a clamp screw to clamp said ear in adjusted position on the finger, the operative end of the gage being located below the finger to cooperate with the edge of and position the work, and a spring co-
105 operating with said gage and normally acting to depress its operative end.

19. In a marking machine, a work-bed, a reversible head movable toward and from it, a series of individually adjustable fingers
110 mounted on said head, a double-acting marking device on each finger, an adjustable upright bracket adapted to be clamped on a finger and extending above and below the same, a pair of edge-gages pivoted on
115 the bracket and located respectively above and below the series of fingers, a spring connected with said gages and tending to separate their operating ends, and stops on the bracket to limit spring-induced movement
120 of the gages, the lower, active gage resting upon the work-bed to position the edge of the work thereon and rocking as the head is raised and lowered.

20. In a machine of the class described,
125 a work-bed, a carrier movable toward and from it, a reversible head detachably mounted in the carrier, a series of laterally and longitudinally adjustable resilient fingers independently connected with the head and
130

overhanging the work-bed, and a double-
acting marking device mounted on the outer
end of each of the fingers, to mark the work
when the head is moved toward the work-
bed, the marking points of each device being
5 at opposite sides of the supporting finger
and alined with each other, whereby the
head can be reversed in the carrier for mark-
ing rights and lefts, variations in the thick-

ness of the work being compensated for by 10
the resilience of the fingers.

In testimony whereof, I have signed my
name to this specification, in the presence
of two subscribing witnesses.

BERNARD T. LEVEQUE.

Witnesses:

THOMAS J. CARTY,
FREDERICK W. DAVISON.