

H. C. MILLER.  
BUTTONHOLE MARKING MACHINE.

(Application filed Dec. 13, 1900.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

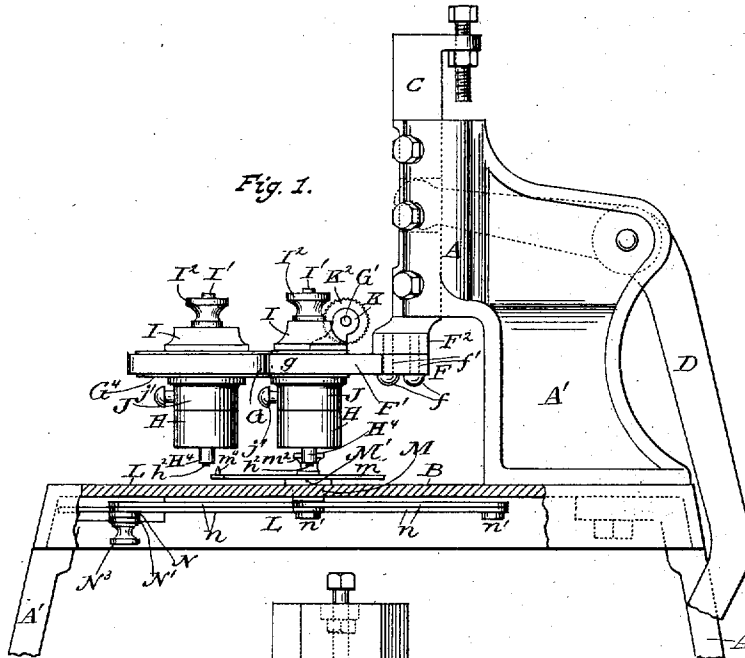


Fig. 2.

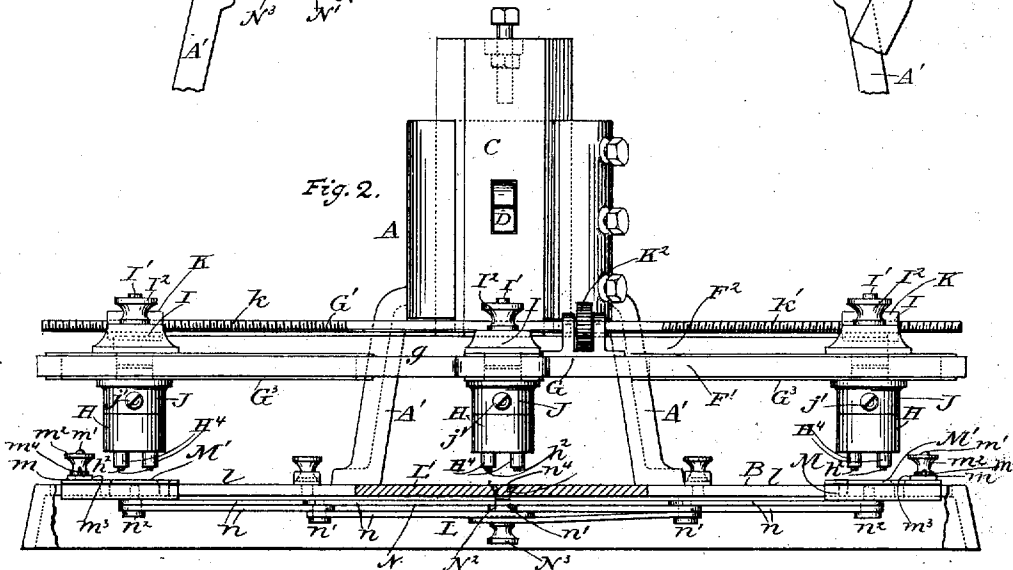
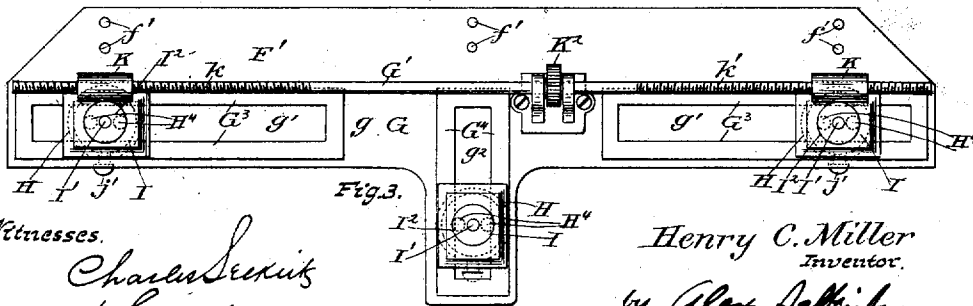


Fig. 3.



Witnesses.

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**No. 634,580.**

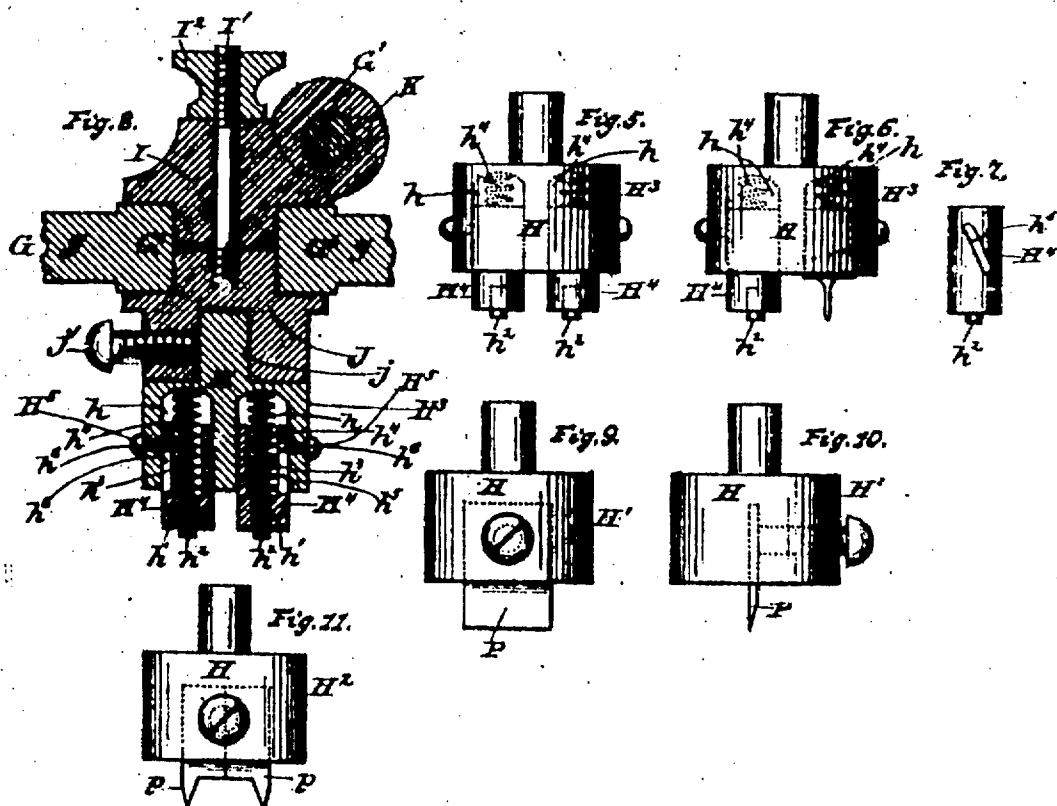
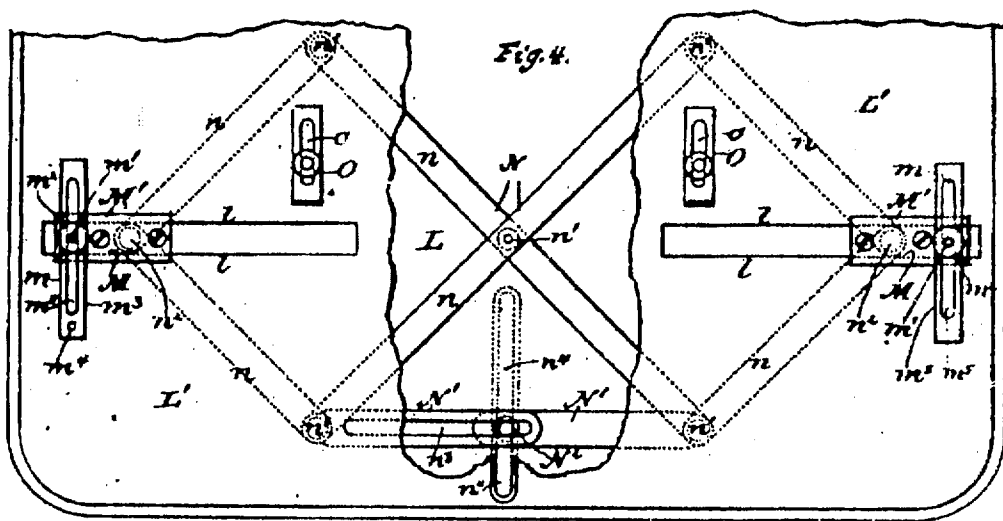
**Patented Oct. 15, 1901.**

**H. C. MILLER.**  
**BUTTONHOLE MARKING MACHINE.**

(Application filed Dec. 12, 1900.)

(No Model.)

**2 Sheets—Sheet 2.**



### Witnesses.

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# UNITED STATES PATENT OFFICE.

HENRY C. MILLER, OF WATERFORD, NEW YORK.

## BUTTONHOLE-MARKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 684,580, dated October 15, 1901.

Application filed December 13, 1900. Serial No. 39,737. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY C. MILLER, a citizen of the United States, residing at Waterford, in the county of Saratoga and State of New York, have invented new and useful Improvements in Buttonhole-Marking Machines, of which the following is a specification.

My invention relates to machines for marking buttonholes of collars and cuffs; and it consists of the novel construction and combinations of parts, as will be hereinafter fully set forth, and pointed out in the claims.

The objects of this invention are to provide, in a buttonhole-marking machine, marking devices having a colored marking substance which are so operated as to mark with great accuracy and plainly on the material of collars and cuffs the places of buttonholes to be made, to provide, with buttonhole-marking devices, mechanisms by means of which said marking devices may be adjusted for direction of length of the buttonhole-marks and for regulating the placement of the marks on collars and cuffs of different lengths, and, further, to provide, with buttonhole-marking devices, a gaging mechanism for automatic adjustment of collars and cuffs in relation to the buttonhole-marking devices.

Other objects and advantages of the invention will be fully understood from the following description and claims when taken in connection with the annexed drawings, in which—

Figure 1 is a side elevation of a buttonhole-marking machine embodying my invention. Fig. 2 is a front elevation of the same. Fig. 3 is a plan view of a mechanism for adjusting the marking devices in relation to each other as the lengths of collars and cuffs may require. Fig. 4 is a plan of the mechanism preferred for adjusting the collars and cuffs to be marked in relation to the buttonhole-marking devices. Fig. 5 is a side elevation of a preferred form of marking device. Fig. 6 is a side elevation of a marking device in which are employed a color-marker and a puncturing-marker. Fig. 7 is a side view of the marking-pencil holder. Fig. 8 is a section on enlarged scale. Fig. 9 is a side elevation of a cutting form of marking device which may be employed in my improved machine. Fig. 10 is a view of the same, showing

an end of the cutter of the same, and Fig. 11 is a modification of form of a marking device which may be employed.

Similar letters of reference refer to similar parts throughout the several views.

In the drawings, A is a suitable standard provided with suitable legs A', which are shown to be secured to platform B. The said standard is provided with suitable ways, one of which may be adjustable.

C is a suitable slide with which the vertically-moving head of the marking devices is suitably connected. F is the head of the marking mechanism, which head is connected with said slide C, so as to be carried by it when operated. This head consists of the horizontal piece F' and vertically-extended piece F<sup>2</sup>, integral with said piece and suitably connected with said slide, either by bolting or by being integral with the same, as may be preferred.

G is the adjustable buttonhole-marking mechanism, which comprises the horizontal piece F', adjusting-shaft G', buttonhole-marking devices H, and the operating adjuncts employed in combination therewith, as hereinafter described. The plate g is made with a length and width suitable for being attached to the piece F' of the head F and for holding the adjusting-shaft G' and the two or more buttonhole-marking devices H employed for marking collars and cuffs of large sizes and is preferably secured to piece F' by means of suitable screws f, passing through holes f' provided in said plate and screwing into screw-threaded holes in said piece.

G<sup>3</sup> G<sup>3</sup> are suitable ways provided in the outer end portions of said plate g and in alignment with each other in direction of the length of said plate and have between them the longitudinal opening g', Figs. 3 and 8. Ways G<sup>4</sup> G<sup>4</sup> are provided in said plate at a point in its length relatively midway between the ways G<sup>3</sup> G<sup>3</sup> and separated by opening g<sup>2</sup>, as shown. These third pair of ways run in direction forward and at right angles to ways G<sup>3</sup> G<sup>3</sup> of the other two pairs, as shown. Arranged in openings g', respectively, between each pair of ways G<sup>3</sup> G<sup>3</sup> and guided by the latter are an upwardly-projected sliding piece I and a downwardly-projected sliding piece

J, which two sliding pieces are coupled together by means of coupling-bolt I', provided with nut I<sup>2</sup>, Fig. 8.

K K are screw-threaded nuts suitably connected with the upwardly-projected sliding pieces I, one being provided with right-hand screw-threads and the other with left-hand.

G' is a revolving shaft of suitable length and having one end portion thereof, as *k*, provided with a right-hand screw and the other, as *k'*, with a left-hand screw. These screw portions of said shaft respectively work in the screw-threaded nuts K K in correspondence.

K<sup>2</sup> is a suitable finger-wheel fixedly mounted on shaft G' at any suitable point of its length for convenience for revolving the same in either direction.

Means are provided with the downwardly-projected sliding pieces J J, respectively, for connecting a buttonhole-marking device H with the same. My preferred means consists of the circular form-socket *j* and set-screw *j'*, which not only are adapted to hold the marking devices securely connected with said pieces J J, but allows them to be turned horizontally in either direction for giving to the markers in each marking device such position in relation to the edges of collars and cuffs as may be advantageous or preferred. The marking devices to be combined with these sliding pieces will be hereinafter described. The sliding pieces I and J, coupled by bolt I' and working between ways G<sup>4</sup> G<sup>4</sup>, are preferably of like construction as pieces I and J, working in ways G<sup>3</sup> G<sup>3</sup>, and the marking devices connected with said sliding piece J are preferably of like construction as that of the others working between ways G<sup>3</sup> G<sup>3</sup>.

L is a mechanism for adjusting collars and cuffs in relation to the marking devices from which they are to receive their buttonhole-marks. In this mechanism L' is a suitable table for holding the articles to be marked and for carrying the several parts which cooperate to hold the said articles in place beneath the marking devices H. This table L' is shown in Fig. 4 on an enlarged scale with a portion thereof broken away for exposing part of the adjusting mechanism beneath. In the outer portion of each half of this table is provided a pair of ways *ll* in alignment with similar ways in the other half of the table, and between these ways *ll* are openings in which works a gage-carriage M, carrying, respectively, arm M', on the outer end of which is mounted a suitable gage *m*. The arms M', carrying the said gages *m*, are preferably fixed to said carriages, yet they may be movable in relation to them when preferred. The gages *m m* may be of any suitable form and preferably consist of rectangular pieces, as shown in Figs. 1, 2, and 4, secured to arms M' by means of a suitable bolt *m'* and nut *m<sup>2</sup>* in direction transverse to the direction of said arms, so that the inner edges *m<sup>3</sup>* of each gage may serve as gaging

edges, against which the ends of collar or cuff may abut. These gages may be turned on their fastening-bolts *m'* to any desired angle required or preferred for correspondence with the line of edge of the collar or cuff to abut the same. It is to be understood that when adjusting the gages *m m*, mounted on carriages M M, the former should in all cases be so set that the midway point between them may be in exact correspondence as to location with the center point between said carriages. The gage-carriages M may be moved at the same time in opposite directions to equal distances in either direction by any suitable means; yet I at present prefer to employ a suitable lazy-tongs comprising members *n*, pivoted together by pivots *n'* and dead-center pivot *n'*, which may hold this lazy-tongs in place against the lower side of table L, and end pivots *n<sup>2</sup>*, which pivot the outer ends of this lazy-tongs on the lower sides of carriages M. Suitable links N N'—one provided with slot *n<sup>3</sup>*, pivoted to the lazy-tongs N by pivots *n'*, and a suitable clamping-bolt N<sup>2</sup>, working in the transverse slot *n<sup>4</sup>* in the table at its middle of length between said carriages and provided with a finger-nut N<sup>3</sup>—may be employed to serve as a convenient and simple means for holding the lazy-tongs and the carriages M M, carrying the gages, from moving when said clamping device is tightened.

O O are adjustable gages provided with set-nuts and working in suitable transverse slots *o o*, provided at suitable points in the table, for gaging the distance to which the side edge of the article to be marked is to be set, so that the markers of the marking devices may mark the place for buttonholes at proper points at uniformly the same distance from said edges.

Although in this machine there may be employed marking devices having markers of any suitable kind and form, such as are shown in Figs. 9 and 10 to consist of a straight-line cutting-blade P, suitably secured in the body H' and adapted to mark the places for buttonholes in a collar or cuff by shifting the material of the same, or a pair of marking-pins *p*, fixed in the body H<sup>2</sup>, as shown in Fig. 11, may be employed, yet I at present prefer to employ marking devices having parts of construction shown in Figs. 5, 6, 7, and 8, which consists of the body H<sup>3</sup>, in which are provided, preferably, two chambers *h* of circular form made in said body from its lower end, as shown in Figs. 6 and 8, in which chambers or one of them works a cylindrical pencil-holder H<sup>4</sup>, having in its lower end perforation *h'* for reception of a suitable color-pencil *h<sup>2</sup>*, made of a substance which is adapted to be cleared from the material of the articles marked by washing. These pencil-holders are centrally perforated from their upper ends by perforations *h<sup>3</sup>*, which receive spiral spring *h<sup>4</sup>*, having lower ends seated on the bottom of the perforations *h<sup>3</sup>* and their

opposite ends bearing against the top wall of chambers *h*, all as shown in Figs. 6 and 8. These pencil-holders are adapted to rotate on their axis to a short distance when pressure is applied to their pencil ends. This rotary movement is preferably produced by means of the relatively-inclined short slot *h*<sup>5</sup>, made in a side thereof, as shown in Figs. 5, 6, and 8, and pins *h*<sup>6</sup>, which latter are shown to be integral with the point end of screw *H*<sup>5</sup>, screwing in the wall of chamber *h* and holding the pin *h*<sup>6</sup> in said slot. With this construction when the marking device *H* is forced down with its pencil ends carried with pressure down on the material of the article to be marked the end of the pencil or pencils will be rotated to a short distance and be made to rub on the material of the collar or cuff, and thereby effect a transfer from the pencil or pencils a sufficient portion of its colored substance so as to make a plainly-visible mark on the surface of the material of the article operated with, which substance may be readily removed by washing.

In some cases it is preferred to finish in the bands of collars the outer buttonholes in the same before marking the middle buttonhole and working the same, and in such cases the marking this middle buttonhole in collar-bands has been at points therein out of center between the outer end buttonholes. For marking this middle buttonhole at a point exactly midway between the outer end buttonholes I provide pin or spur form gages *m*<sup>4</sup>, Figs. 1, 2, and 4, carried by the arms *M*<sup>1</sup>, which are shown in Fig. 4, to carry the edge-gaging edges *m m*, and I at present prefer to provide these pin or spur form gages *m*<sup>4</sup> on the gaging-pieces *m*, which latter pieces are made with longitudinal slot *m*<sup>5</sup> and having said spur-form gage *m*<sup>4</sup> projected upward from one end portion of said gage-piece *m*, as shown at left-hand side of plan Fig. 4. This form of construction and arrangement of the said two forms of gages *m* and *m*<sup>4</sup> allows either to be adjusted and used independently of the other and without interference with each other and obviates the necessity of removal of either for placement of the other; yet, if preferred, these two forms of gages may be made to be removable at pleasure, so that either kind of gage selected may be removed and be replaced by the other form for use.

The operator will first adjust the end marking devices *H H* to such a distance apart as the size of the collars or cuffs may require the buttonholes to be placed at the ends of said articles. For marking cuffs he will remove the marking device provided for marking the middle buttonhole. For marking the third buttonhole he will secure the marking device for such middle buttonhole in place and adjust it to its proper position or place in reference to the two outer end buttonhole-marking devices. This he will do by revolving the shaft *G*<sup>1</sup> in proper direction

by means of finger-wheel *K*<sup>2</sup> for carrying the two end marking devices away from each other for longer collars (or cuffs) or toward each other for shorter ones, and he also will adjust (for collars) the middle buttonhole-marking device in direction transverse to that on which the two end marking devices were adjusted. These several marking devices being properly adjusted, the operator will now adjust the gages *m m*, carried by arms *M*<sup>1</sup>, secured to the gage-carriages *M* and operated by the mechanism provided for moving the said carriages farther apart or nearer to each other, as may be required. By means of this adjustment the length of the collar between the outer end buttonholes, as measured by the trade, and also the middle buttonhole will be accurately measured and located by the buttonhole-marking devices employed when the machine is operated. The above-described adjustments being made, the operator will now place each of the collars to be marked for buttonholes on table *L*<sup>1</sup>, with its finished stitched top edge against the gages *O O*, previously adjusted for gaging the depth of the collars. The collar will be placed on table *L*<sup>1</sup>, opened out and with its finished stitched ends between the gages *m m*, carried by the carriages *M*, with which the adjusting device, preferably the lazy-tongs *N*, is connected. Then by a simple movement of said adjusting device in proper direction the gages *m m* will be moved toward each other to a sufficient distance to be carried, respectively, toward each other for carrying the said gages *m m* against the finished stitched end gages of the collar and adjust the collar (it being free to be moved in either direction lengthwise on the table) properly beneath the buttonhole-marking devices, when the operator will by mechanism provided move the head *F* of the marking mechanism downward and carry the marking device down on the collar on table *L*<sup>1</sup> with sufficient force to cause the marker to mark, cut, or puncture the material of the collar with accuracy at the several places the buttonholes are to be located in the finished collar. When the layers of the fabric of the collars have been cut and otherwise manipulated by machine instead of by hand, so that the articles are the same without variations as to length, (which is not common when hand manipulations are employed,) the gage-adjusting device between the carriages *M* may be operated to carry the end gages *m m* to their proper places and at equal distances from the point at which the middle buttonhole is to be located, when the said adjusting device will be secured from moving the said gages in any direction. In such a case the operator will place the collars to be marked with their top edge against gages *O O* and their end edges against the end gages *m m* and then operate the mechanism which carries the marking mechanism down, and thereby mark the collars as above described with-

out moving the gage-adjusting device N. When the collars have had their outer end buttonholes finished and the central ones are to be located and finished, the carriages M M are to be so adjusted as to allow the spur-form gages  $m^1$ , Figs. 1, 2, and 4, to be adjusted, so that they shall be at points corresponding with the places at which the finished end buttonholes are located in the collar, so that the said spur-form gages may readily enter the said buttonholes at the outer ends, when the point at which the middle buttonhole is to be located and marked will be exactly midway between the two finished outer end buttonholes. When these outer end spur-form gages  $m m$  are thus employed, the two outer buttonhole-marking devices H will be for the time removed. The operator will now operate the machine so that the middle buttonhole may be marked in the collar.

It will be seen that by my above-described improvements the buttonholes of collars may be accurately located and marked either by cutting the material or by color-marks, as may be preferred, or be required by reason of practice of any procedures in the several systems now prevailing in the manufacture of collars.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a marking device, in a buttonhole-marking machine the combination with a suitable table adapted to support a collar to be marked, a body-piece adapted to be connected with a suitable part of the machine and having in it from an end thereof, a circular chamber, of a cylindrical pencil-holder having central in it from the outer end thereof a pencil-receiving perforation and adapted to be rotated within the said chamber when pressure is applied to its end, from a collar supported on said table in direction parallel to the axial line of said pencil-holder, and a pencil of substance adapted to make a colored mark, as set forth.

2. In a marking device in a buttonhole-marking machine, the combination with a body-piece adapted to be connected with a suitable part of the machine, and having in it from an end thereof two circular chambers, of two cylindrical pencil-holders having central in each, from its outer end, a pencil-receiving perforation and provided, each, in a side thereof with a slot which is inclined in relation to the axial line of the same, pins fixed in the walls of the respective circular chambers and working respectively in said inclined slots in said pencil-holders, and pencils, respectively, of substance of color adapted to make a visible mark on the material to be marked, when pressed on the same, as set forth.

3. In a buttonhole-marking machine, the combination with a suitable collar-supporting table and a moving part of the machine

adapted to be moved alternately toward and from the said collar-supporting table, and two buttonhole-marking devices, of a plate having in the outer end portion of each half thereof suitable ways in alinement with each other, sliding devices working, respectively, on said ways and connected to said buttonhole-marking devices, and mechanism adapted to move the said sliding devices in opposite directions, in either way, to an equal distance, and, at equal times, toward and from the point of middle of length of distance between said marking devices.

4. In a buttonhole-marking machine, the combination with a moving part of the same, a collar-supporting table, and two buttonhole-marking devices, of a plate having in the outer end portion of each half thereof suitable ways which are in alinement with each other, sliding devices working, respectively, in said ways and connected to said buttonhole-marking devices, and right and left hand screw-threaded nuts connected respectively, with said sliding devices, a shaft having the outer end portion of each half thereof provided with screw-threads in correspondence with the screw-threads of said nuts in which they respectively work, bearings connected to a fixed piece and holding said shaft from moving endwise, and means for revolving said shaft.

5. In a buttonhole-marking machine the combination with a suitable plate having in the outer end portions of each half thereof suitable ways which are in alinement with those in the other half portion, sliding pieces adapted to be moved at equal distances in either direction in said ways, buttonhole-marking devices connected to each of said two sliding pieces, of a third sliding piece adapted to be moved in either direction in ways located in said plate at a point midway between the ways of the two sliding pieces in alinement and relatively in direction at right angles thereto, as set forth.

6. In a buttonhole-marking machine, the combination with a plate adapted to be moved vertically in either direction, two adjustable buttonhole-marking devices which are supported from said plate, and are adapted to be moved toward or from each other, a collar-supporting table beneath said marking devices, guiding-ways provided in the outer end portions of each half of said table, carriages working in said ways, gages connected with said carriages from their upper sides and adapted to be moved, respectively, in relation to the said buttonhole-marking devices in direction the latter may be moved, and mechanism adapted to be operated, at pleasure, for moving said carriages and gages therefor simultaneously in opposite direction and at like distances, as described.

7. In a buttonhole-marking machine, the combination with a fixed collar-supporting table provided with ways which are in alinement in each end portion thereof, a carriage

working in each way, gages, for abutting the finished ends of collars connected with said carriages from their upper sides, a lazy-tongs provided below said table and jointed on said  
 5 carriages so as to move both simultaneously in opposite direction and to equal distances, of a piece adapted to be moved in direction alternately toward and from said collar-supporting table, ways in alinement provided  
 10 in the respective outer end portions of said piece, two buttonhole-marking devices supported from said ways in said movable piece and projected downward toward said fixed collar-supporting table, and mechanism, de-  
 15 scribed, adapted to move the said buttonhole-marking devices simultaneously in opposite directions either way, and in relation to the adjustable gages, supported from the said collar-supporting table, as described.  
 20 8. In a buttonhole-marking machine, the combination with a collar-supporting table provided in its opposite end portions with suitable ways which are in alinement, car-  
 25 riages supported in said ways and adapted to be moved in opposite directions, spur-form

gages, which are adapted to readily enter the finished outer end buttonholes of a collar, projected upwardly and carried by the said carriages, and mechanism adapted to move said carriages and the said spur-form gages simul-  
 30 taneously in opposite directions at equal distances either way, of a piece adapted to be moved at pleasure toward and from said collar-supporting table, a buttonhole-marking device which is located relatively directly  
 35 over a line which is midway between the two spur-form gages which is projected above the plane of the said collar-supporting table and is adjustable in direction transverse to the lines on which the said two spur-form gages  
 40 may be moved, whereby collars of varying lengths may have their middle buttonholes located and marked at a point exactly at the middle of length between the two finished  
 45 outer end buttonholes of the collar, as de- scribed.

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