March 23, 1948. F. E. CURTIS 2,438,271

APPARATUS FOR INDENTING CHARACTERS IN MEDALS AND THE LIKE

Filed Feb. 6, 1946 4 Sheets-Sheet 1

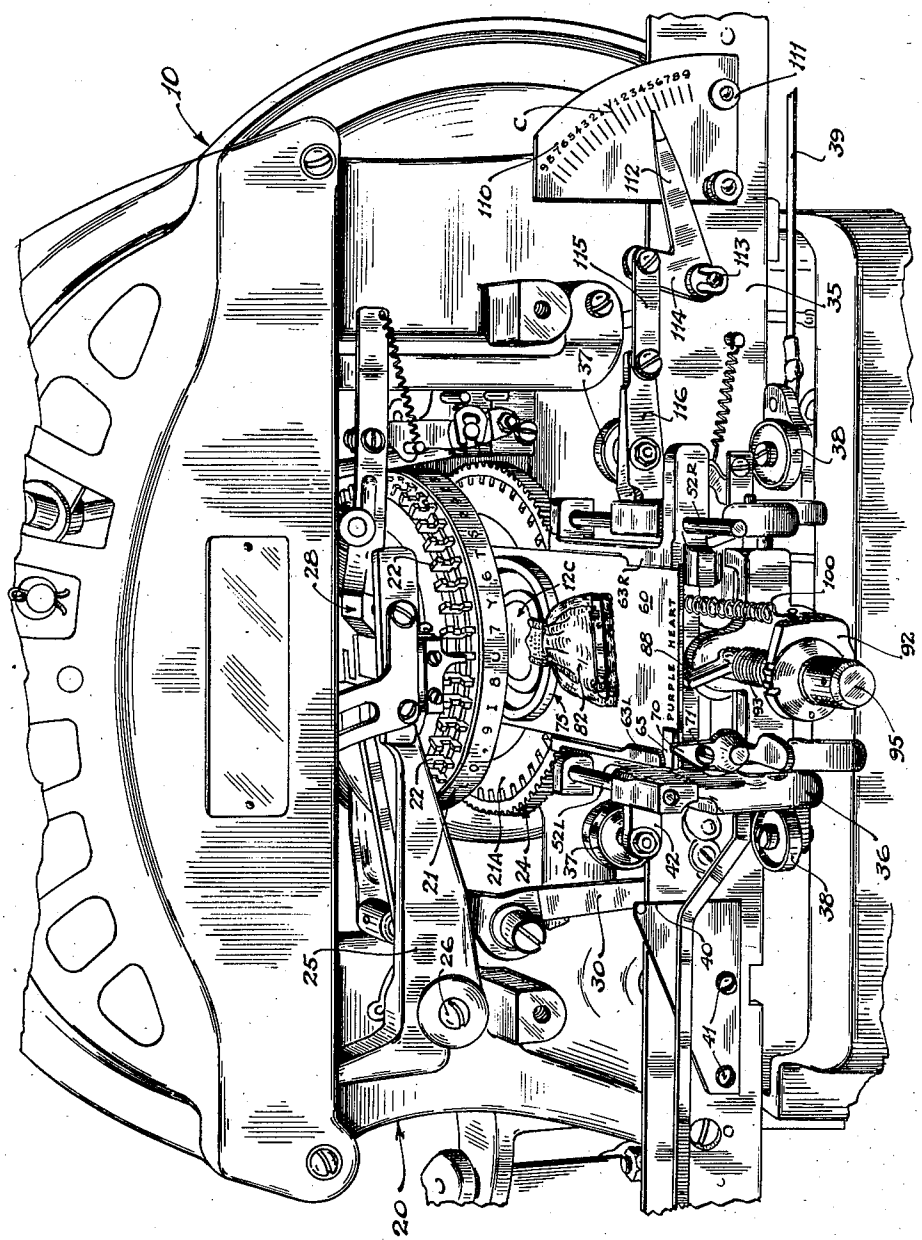


Fig. 1

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APPARATUS FOR INDENTING CHARACTERS IN MEDALS AND THE LIKE

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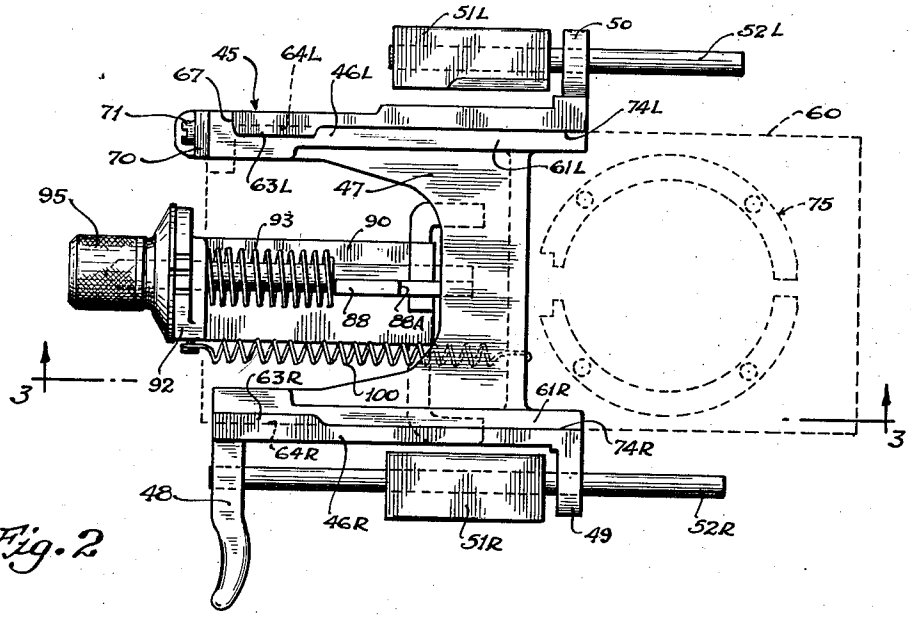


Fig. 2

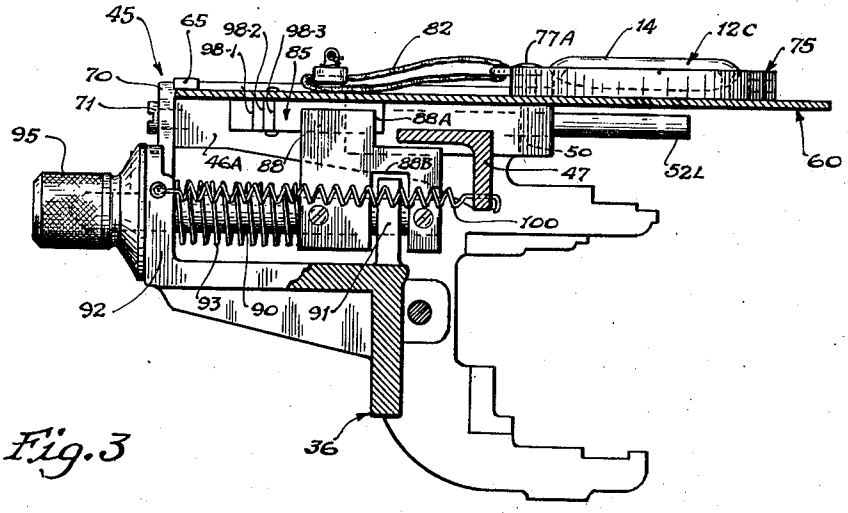


Fig. 3

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APPARATUS FOR INDENTING CHARACTERS IN MEDALS AND THE LIKE

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Fig. 4

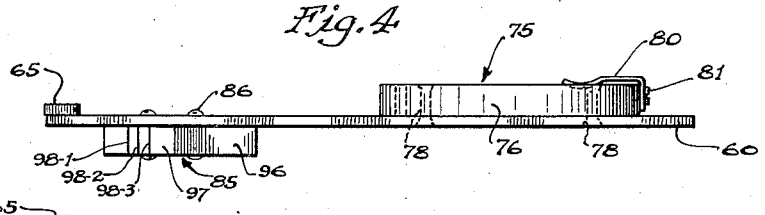


Fig. 5

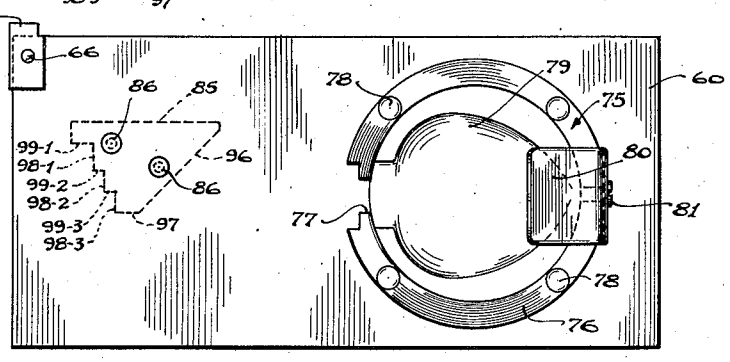


Fig. 6

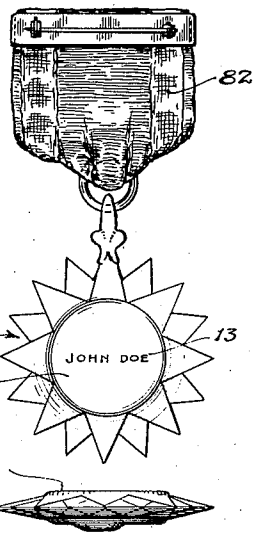


Fig. 7

Fig. 8

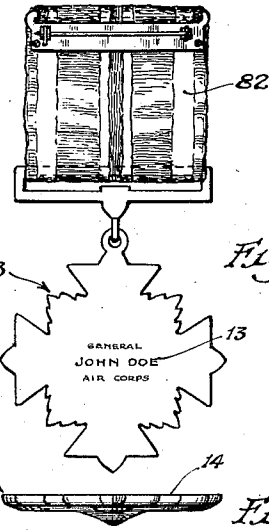


Fig. 9

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APPARATUS FOR INDENTING CHARACTERS IN MEDALS AND THE LIKE

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Fig. 10

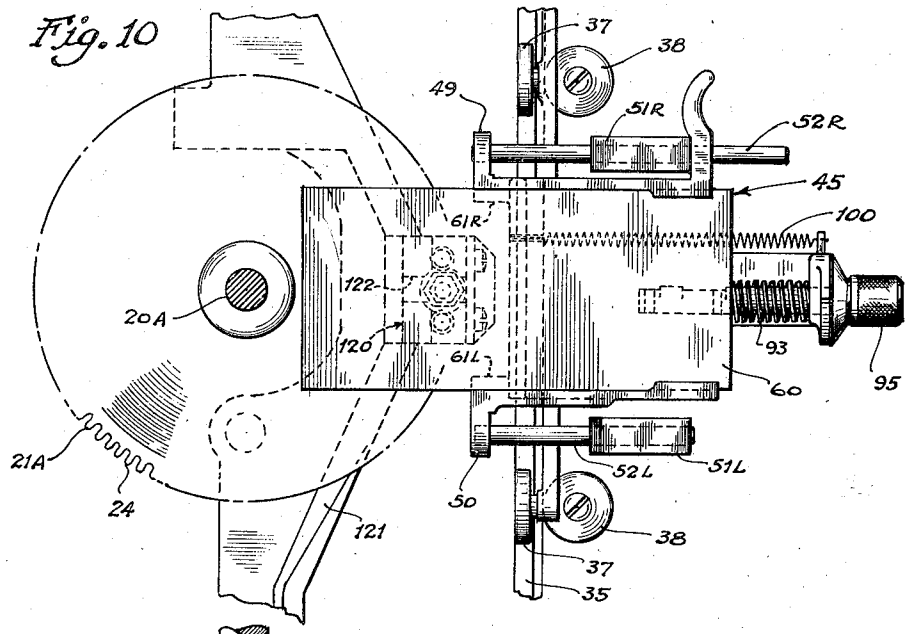


Fig. 11

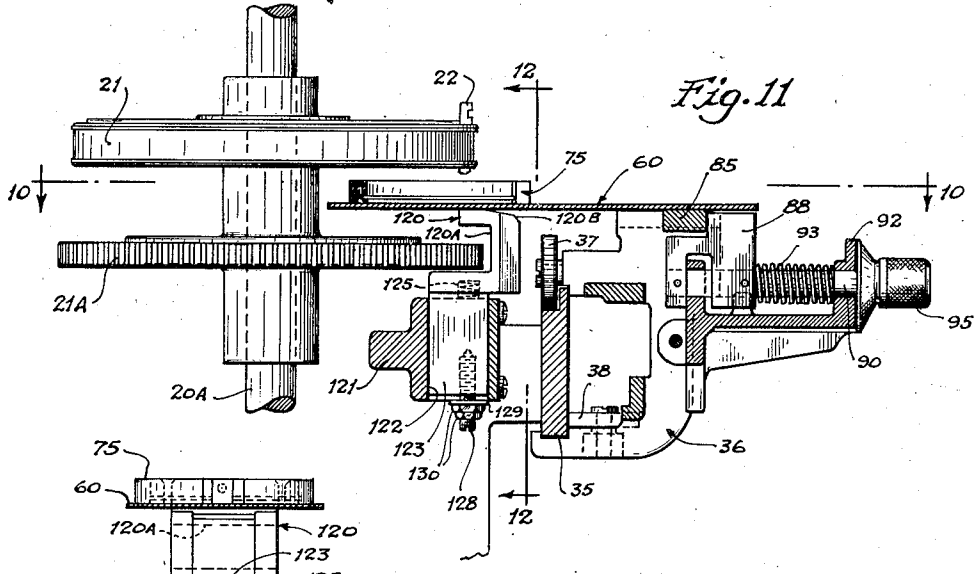
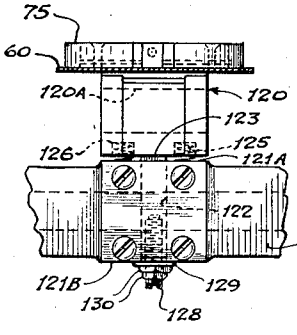


Fig. 12



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UNITED STATES PATENT OFFICE

2,438,271

APPARATUS FOR INDENTING CHARACTERS IN MEDALS AND THE LIKE

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Application February 6, 1946, Serial No. 645,887

14 Claims. (Cl. 197—6.6)

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This invention relates to the indenting of type characters in the metallic surface of a medal or the like, and particularly the invention relates to apparatus whereby names and other information may readily be indented uniformly and in properly spaced locations in the surfaces of medals of different sizes and kinds.

It has of course been the practice in the past to form names and other information in the surface of medals or the like by indenting the appropriate type characters in such surfaces, but as heretofore known, this indenting operation has usually been performed either by the preparation of special indenting punches or through the use of manually operated punches that are manually put into position for the indenting operations. In accordance with past practice, the accurate and neat location of the indented characters and uniformity of the indented impressions upon a medal or the like have been difficult to accomplish, and to enable this to be done in a simple and expeditious manner is an important object of the present invention. Other and related objects are to facilitate the location or positioning of indented characters in medals and like objects, to compensate for variations in thickness of such medals and the like so as to insure uniformity of impressions, to enable a single machine to be employed for indenting names and other data in proper positions on medals of various sizes and shapes, and to enable the machine to be readily changed or set for operation on any desired one of a plurality of kinds of medals or the like.

In the production of indented data on medals or the like, it is desirable that the lines of type characters indented therein be centered in a vertical direction on the surface of the medal, and a further object of the present invention is to simplify the attainment of the desired location of the lines of indented characters formed on a medal or the like. An object related to the foregoing is to afford a different mounting member for each kind or type of medal that is to be operated upon by the apparatus of the present invention, and to incorporate in each of the holders, a portion of a line spacing means so that the line spacing means of the machine are automatically coordinated with the particular mounting member that is in place in the machine.

A further object related to the foregoing is to enable medals or the like to be mounted and supported upon mounting plates that are adapted to the particular configuration of the medal or the like that is supported by such plate, and to

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enable such plates to be readily mounted in or removed from the machine when a different type of plate is to be mounted therein. Another object is to simplify the mounting or removal of work supporting members or plates in a machine of the aforesaid character, and to incorporate in such plates a series of line spacing abutments that are related to the location of the work supporting elements on such work supporting plate.

It is of course important that the lines of indented characters formed in medals or the like be accurately centered laterally of such medals, and to enable this to be accomplished in a simple and expeditious manner is a further object of this invention.

Other and further objects of the present invention will be apparent from the following description and claims and will be understood by reference to the accompanying drawings which, by way of illustration, show a preferred embodiment and the principle thereof and what I now consider to be the best mode in which I have contemplated applying that principle. Other embodiments of the invention embodying the same or equivalent principle may be used and structural changes may be made as desired by those skilled in the art without departing from the present invention and the purview of the appended claims.

In the drawings:

Fig. 1 is a fragmental perspective view showing the front of an indenting machine embodying the features of the invention;

Fig. 2 is a plan view of the carriage and the cross slide construction utilized in the machine shown in Fig. 1;

Fig. 3 is a vertical sectional view taken substantially along the line 3—3 of Fig. 2;

Fig. 4 is a side elevational view of a work holding plate adapted to receive and support a medal of a particular form;

Fig. 5 is a plan view of the work holding plate shown in Fig. 4;

Fig. 6 is a rear elevational view of one form of medal that may have names and like information indented thereon through the use of the machine of the present invention;

Fig. 7 is an edge view of the medal shown in Fig. 6;

Fig. 8 is a rear elevational view of another form of medal that may have names and other data indented therein by the machine of the present invention;

Fig. 9 is a view showing the edge of the medal shown in Fig. 8;

Fig. 10 is fragmental plan section taken on the line 10—10 of Fig. 11;

Fig. 11 is a fragmental vertical sectional view similar to Figs. 2 and 3 and showing further structural relationships; and

Fig. 12 is a sectional view taken along the line 12—12 of Fig. 11.

For purposes of disclosure, the invention is herein shown as embodied in an indenting machine 10, the front elevation of which is illustrated in Fig. 1 of the drawings, and this machine is under the present invention arranged so that medals, as 12A of Figs. 6 and 7, medals 12B of Figs. 8 and 9, or medals, as 12C of Fig. 1, may have names and other pertinent data indented therein as indicated at 13 on the back or rear surface of such medals. Medals of the character shown in Figs. 6 to 9 of the drawings, are made in various shapes and forms, but in every instance it is the practice to provide a flat surface 14 on the back of such medal to receive the name of the recipient and other data that are to be formed on each such medal so as to show the ownership of the medal and the facts concerning the award of such medal. The flat rear surfaces 14 that are provided on such medals are of different sizes and shapes so that with respect to each type or kind of medal it is necessary to arrange the name and other data on the flat surface 14 in a different manner, but in every instance it is desirable to have this indented information be substantially centered both horizontally and vertically with respect to the flat surface 14, and such location and centering of the data 13 is rendered relatively easy through the use of the present invention.

The indenting machine 10 of the present invention is, in many of its fundamental structural aspects, substantially similar to the embossing machine shown in the Duncan and Hubbard Patent No. 1,831,103, patented November 10, 1931, and the structure shown in the aforesaid Duncan and Hubbard patent has, in accordance with the present invention, been modified and rearranged so as to facilitate the formation of the data 13 on different kinds and type of medals in the proper centered relationship upon the flat surface 14 of the medals as 12.

The machine 10 has an upstanding frame 20 that has a constantly rotated vertical shaft 20A, Fig. 11, mounted therein, as shown in the aforesaid Duncan and Hubbard patent, and this shaft has a punch head 21 fixed thereon so as to be rotated with the vertical shaft 20A. The punch head 21 has a plurality of punches 22 disposed in vertically slidable positions about and adjacent to the periphery of the punch head 21 so that when a particular punch 22 is disposed in an operating position adjacent the front of the machine, this punch 22 may be operated downwardly through an operating or indenting stroke, and a character formed as the punching element on the lower end of such punch serves in such operating stroke to indent this character in a medal 12 or the like that is supported in an operating position beneath the punch. The punches 22 are selected so as to afford all the necessary characters which are to be indented into the work pieces or medals 12, and in the present case the various letters are all upper case letters, but it will be understood that in some instances sufficient punches 22 might be provided to enable both upper case and lower case characters to be formed.

The punch head 21 is constantly rotated, and

this is accomplished by rotation of the aforesaid vertical shaft 20A through a frictional connection that enables the punch head 21 to be stopped with any desired one of the punches 22 in the forward or operating position, and this setting of the punch head 21 is accomplished by the keyboard and stop means that are fully illustrated and described in the aforesaid Duncan and Hubbard patent. When a particular punch has been selected and stopped in the operating position, this punch is driven through its operative indenting stroke, and this actuation of the punch is accomplished by means that are of substantially the same character as the operating means disclosed in the aforesaid Duncan and Hubbard patent. It should be observed however that in the aforesaid Duncan and Hubbard patent there are opposed upper and lower heads that carry opposed pairs of punches and dies, and these punches and dies must be actuated in timed relation toward and away from each other, but in the machine of the present invention, the lower head, which is identified herein as 21A does not carry forming-elements or punches, and this lower head 21A is utilized only as a means for carrying a register ring 24 that functions as in the aforesaid Duncan and Hubbard patent in attaining accurate positioning of the head 21 after a particular punch 22 has been selected. In view of the foregoing, the mechanism that is utilized in the aforesaid Duncan and Hubbard patent for actuating the forming elements carried by the lower head 21A has been eliminated in the present machine, but the actuating mechanism for operating the forming elements of the upper head is utilized in the present instance in substantially the same form and relationship that is disclosed in the aforesaid patent. Thus an arm 25 is pivoted at 26 on the frame 20 so as to extend over the operating position of the machine, and means are provided on this arm 25 for imparting downward operating movement to the punch 22 that is in the operating position and for retracing the punch to its elevated position shown in Fig. 1. The arm 25 is actuated in a downward direction by means that are shown in the aforesaid Duncan and Hubbard patent and which include the toggle mechanism 30 and an anvil 32 of said patent that is operated by such toggle means. The aforesaid anvil of the Duncan and Hubbard patent is operated through substantially vertical reciprocating movements continuously during operation of the machine, and the anvil is rendered effective to actuate the arm 25 through the shifting of an interposer 28, Fig. 1, that is moved into position between the arm 25 and the aforesaid anvil of the Duncan et al. patent. Such shifting of the interposer 28 is accomplished by means including a rocker arm 30 that is shifted into its operative position by means shown in the aforesaid Duncan and Hubbard patent after the selected punch 22 has been stopped in the operating position of the machine.

In forming the indented characters in the flat surface 14 of a medal as 12, the medal is supported in the operating position beneath the selected punch 22 by means that provide for character spacing as well as line spacing movements of the medal at appropriate times in the operation of the machine. Thus the machine has a supporting rail 35 extended along the forward face of the frame 20, and a carriage 36 is mounted for reciprocating movement along the front of the machine by means including upper rollers 37 and lower front rollers 38. The carriage 36 is in

the present case urged in a right-hand direction, Fig. 1, by means including a spring biased tensioning band 39 of conventional form, and such movement is controlled by escapement mechanism, not shown, that is operated near the end of each machine cycle in the manner disclosed in the aforesaid Duncan and Hubbard patent. In the left-hand or carriage return movement, the initial position of the carriage 36 is limited and determined by a stop plate 40 that is secured by screws 41 to the forward face of the guide rail 35 so as to lie in the path of a rigid element or lug 42 of the carriage.

The requisite line spacing movements of the work or medal 12 with respect to the operating position of the machine are attained by means including a cross slide 45 that is mounted on the carriage 36 for movement in a front to rear direction, that is, transversely with respect to the direction of character spacing movements of the carriage 36. The cross slide 45 includes a pair of side bars 46L and 46R and an integral conecting web 47 that supports the side bars 46L and 46R in a rigid and spaced relationship with respect to each other, and guide means for supporting the cross slide on the carriage are associated with the side bars 46L and 46R. Thus the side bar 46R has a pair of rigid lugs 48 and 49 extended outwardly from the opposite ends thereof, while the side bar 46L has a rigid lug 50 extended outwardly from the rear end of the side bar. The lugs 48 and 49 on one side of the cross slide and the lug 50 on the other side of the cross slide are associated with guide means supported by the carriage 36, and in the present instance the carriage has a pair of upstanding bearing members 51L and 51R formed rigidly thereon and in a spaced relation such that the main body of the cross slide 45 may move in a front to rear direction between the bearing members 51L and 51R. The bearing member 51L has a guide rod 52L fixed thereon so as to extend horizontally in a rearward direction therefrom, and the lug 50 of the cross slide is apertured so as to slidably embrace the guide rod 52L. The bearing member 51R has a slide rod 52R fixed thereon in a horizontal position so as to extend frontwardly as well as rearwardly from the bearing member 51R, and the lugs 48 and 49 are apertured so as to slidably embrace the opposite extended end portions of the guide rod 52R. Thus the cross slide is supported for horizontal movement in a front to rear direction, thereby to enable a workpiece such as a medal 12 carried on the cross slide to be line-spaced with relation to the operating position of the machine.

In enabling different kinds and shapes of work pieces or medals 12 to be supported on the cross slide 45, the present invention provides a specially formed work holding means for each type and design of medal, and such work holding means are removably associated with the cross slide 45. Such work holding means in accordance with the present invention not only serve to support and position the work with relation to the cross slide, but also embody means that are related to the size and form of the particular work piece or medal so as to constitute a portion of a line spacing means for determining the line spacing positions of the cross slide 45. Thus as herein shown in Figs. 1 to 5 of the drawings, such work holding means are afforded, as to each type of medal, by a work supporting plate 60 that is adapted to be removably positioned in a predetermined relationship on the cross slide 45. The work supporting plate 60 is of rectangular form and is adapted to rest at its opposite edges on upwardly facing shoulders 61L and 61R that are formed respectively on the side bars 46L and 46R. The supporting shoulders 61L and 61R are disposed at the adjacent edges of the side bars in which they are formed, and near the forward edges of these side bars, the work supporting plate 60 is held in engagement with the respective shoulders 61L and 61R by overhanging ledges 63L and 63R which serve in effect to provide grooves 64L and 64R through which the work supporting plate 60 may be moved in a front to rear direction when it is desired to mount or dismount such work supporting plate. Near one of its forward corners, the work supporting plate has a positioning lug 65 rigidly secured thereto as by riveting at 66, and as the work supporting plate is moved rearwardly into position on the cross slide 45, the lug 65 engages the forward end 67 of the ledge 63L, thereby to limit the rearward movement of the work supporting plate 60. When the work supporting plate has reached the predetermined position that results from the abutment of the lug 65 with the surface 67, the plate 60 is held in such position by a releasable latch 70 that is pivoted intermediate its ends at 71 so that the latch 70 may have the upper end thereof moved into abutment with the forward edge of the lug 65. When the latch 70 is in the position shown in Fig. 1, the work supporting plate 60 is held against front and rear movement by the cooperating action of the shoulder 67 and the latch 70, while the engagement of the lateral sides of the plate 60 with the sides of the grooves 64L and 64R and with the rearward extensions or shoulders 74L and 74R that define the shoulders 61L and 61R serves to hold the plate 60 in position in a lateral sense. When the work supporting plate 60 is to be removed, the latch 70 is pivoted in a counterclockwise direction, Fig. 1, so as to be out of the path of the plate 60, whereupon the plate may be withdrawn in a forward direction.

It will be recognized that the forward or front faces of the different kinds of medals or the like that are to be operated upon by the present machine will differ quite widely in size as well as configuration, and each work supporting plate 60 has a work embracing structure 75 formed thereon that will not only conform with the size and configuration of the forward surface of the medal, but will also serve to hold the medal in position on the plate 60. Thus the work embracing structure 75 as herein shown includes a generally annular outer ring 76 that has a space or slot 77 in its forward edge through which the fastening or supporting element 77A of a medal may be extended, and the ring 76 is secured in place on the upper surface of the plate 60 by means such as rivets 78. In the space within the ring 76, a matrix 79 is formed from a suitable moldable material so as to conform with the general configuration of the forward face of the medal that is to be received in the work embracing means 75, and as shown in Figs. 2 to 4, this matrix is adapted to receive the medal that is known as the "Purple heart." The matrix 79 of course cooperates with the form or configuration of the medal to prevent lateral displacement of the medal with respect to the work supporting plate 60, and this action is rendered more effective through the use of a clamping means such as a spring clamp 80 that is secured in position on the ring 76 by means such as a screw 81, and

the spring clamp 83 extends upwardly and then forwardly over the matrix 79 so as to engage that portion of the medal that is remote from the slot 77. Thus in the mounting of a medal in the work embracing means 75, such medal is moved rearwardly into position beneath the spring clamp 80 so as to be held thereby in cooperative engagement with the matrix 79. When a medal is thus positioned, the supporting ribbon portion 82 of the medal extends forwardly and is supported on the flat upper surface of the forward portion of the plate 60.

In practice it has been found that best results are attained by removing the work supporting plate 60 from the cross slide for the purpose of mounting a medal 12 in position thereon, and the plate 60 and the medal carried thereby are then put into position on the cross slide 45 by inserting the plate into position in the slots 64L and 64R. After movement of the plate 60 to its most rearward position, the latch 70 is rendered effective so as to hold the work supporting plate 60 in this predetermined relationship. When the work supporting plate is thus positioned on the cross slide 45, means that are associated with the plate 60 are effective to cooperate with means on the carriage 36 to control and govern the line spacing positions of the cross slide 45 and such control is so related to the location of the work piece or medal on the plate 60 that the lines of characters formed on the medal will be disposed in a proper location upon the surface 14 of the medal. Thus each work supporting plate 60 has a stop member 85 secured as by rivets 86 on the lower face of the plate 60 and the stop plate 85 is adapted for cooperation with a shiftable stop arm 88 that is mounted on the carriage 36. The stop arm 88 has a rearwardly facing abutment edge 88A, and the stop arm is mounted in a substantially radial relationship on a rock shaft 90. The rock shaft 90 is extended in a front to rear direction on the carriage 36 and is supported at its rear end in a lug 91 formed on the carriage. At its forward end, the rock shaft 90 is supported in a forward lug 92 that is also formed on the carriage 36, and a torsion spring 93 acting between the lug 92 and the shaft 90 serves to rotate the shaft 90 in a counterclockwise direction as viewed in Fig. 1. It should be observed that the shaft 90 has a knurled operating head 95 at its forward end so that the shaft 90 may be rocked in a clockwise direction in opposition to the action of the spring 93, such rocking movements being utilized to cause line spacing movements of the cross slide 45 as will now be described.

The stop arm 88 is so urged by the spring 93 that when the cross slide 45 is empty, or in other words when a work supporting plate 60 is not in position on the cross slide 45, the upper end of the stop arm 88 will be disposed in what may be termed an inactive or left-hand position as viewed in Fig. 1, this position being determined by an upper portion 88B of the arm 88 that overlies the upper surface of the lug 91 so as to limit rocking movement of the arm.

When a work supporting plate 60 is inserted rearwardly into position on the cross slide 45, a cam surface 96 that faces rearwardly and to the right and which is formed on the stop plate 85, moves into engagement with the stop arm 88, thereby to rock the arm 88 to the right, and this enables the rearward movement of the plate 60 to proceed. When the stop plate 85 has moved rearwardly for a substantial distance, it moves along what may be termed a dwell surface 97 on the edge of the stop plate 85, and this dwell surface 97 then moves out of the path of the arm 88 so that the spring 93 may cause return movement of the arm 88 toward the left along a shoulder 98—3 and into engagement with an abutment 99—3. Further movement of the cross slide in a rearward direction moves the abutment 99—3 out of the path of the arm 88 and the arm thereupon moves along a shoulder 98—2 and into engagement with an abutment 99—2. Similarly, as the rearward movement of the cross slide progresses, the arm 88 is allowed to move laterally across a shoulder 98—1 and into engagement with an abutment 99—1. Such movement of the arm 88 against the abutment 99—1 takes place when the amount of rearward movement of the cross slide 45 that is desired has been completed, and the operator then releases the cross slide which is then urged yieldingly in a forward direction by a spring 100 that acts between the transverse member 47 of the cross slide 45 and the forward lug 92 of the carriage. The cross slide 45 thereby moves forwardly so as to shift the shoulder 98—1 into firm engagement with the edge 88A of the stop arm 88, and such engagement determines the first line spacing position of the cross slide. When the cross slide is to be shifted to its second line spacing position, the head 95 is turned in a clockwise direction, Fig. 1, in an amount sufficient to move the arm 88 laterally off of the shoulder 98—1 and into alignment with the shoulder 98—2, whereupon the spring 100 shifts the cross slide in a forward direction and into its second line spacing position. Similarly, a further rocking movement applied to the head 95 will move the arm 88 into alignment with the shoulder 98—3 so that the spring 100 may shift the cross slide 45 into its third line spacing position.

It will be clear of course that the location of the stop block 85 on the lower face of the plate 60 may be accurately related to the location of the work embracing structure 75, and both of these elements may be accurately located on the plate with respect to the positioning lug 65 so that when the work supporting plate 60 is in position on the cross slide 45, the abutment block 85 on the plate 60 will cooperate with the stop arm 88 on the carriage to accurately locate the various lines of indented characters on the surface 14 of a medal.

It is of course important that the lines of indented characters formed on the surface 14 of a medal be accurately centered transversely of the surface 14, and to enable this to be accomplished, indicating means are provided on the machine for indicating the position of the carriage and for enabling accurate setting of the carriage so as to locate such lines of characters in centered position. Such means as herein shown are afforded by a scale 110 secured at 111 to the forward face of the guide rail 35 somewhat to the right of the range of travel of the carriage 36. A pointer 112 is pivotally supported at 113 on the guide rail so as to cooperate with the scale 110, and this pointer is formed as one element of a bell crank, the other arm 114 of which extends upwardly and is connected by a link 115 to an arm 116 that is rigid with the carriage 36. Thus the pointer 112 is moved along the scale 110 so as to be indicative of the position of the carriage 36, and the scale 110 is so related to the carriage 36 that when the

vertical center line of a medal mounted on a work supporting plate 60 is disposed in the operating position of the machine, the pointer will be located at a center mark C of the scale 110. The other markings of the scale 110 indicate the successive character spacing positions of the carriage 36 on opposite sides of the central position thereof. Thus the operator may count the number of letters or letter spaces that are to be included in a particular line of the medal, and through the use of this scale 110, may set the carriage 36 so that the line of characters will be properly centered laterally of the medal.

As will be evident in Figs. 10 and 11 of the drawings, the mounting plate 60 projects rearwardly or to the left substantially beyond the lugs 49 and 50 and the ends of the supporting surfaces 61L and 61R, and this relationship is utilized in enabling the machine of the present invention to produce uniformly indented characters even though there is inevitably some slight variation in the thickness of medals of a particular type or kind. In other words, the tolerances imposed in the manufacture of such medals are often relatively large so that variations in thickness may in many instances be of such magnitude as to tend to produce uneven indenting of the characters, and means are afforded under the present invention to prevent this undesirable result.

Thus the overhanging relationship of the rear end of the supporting plate 60 is utilized to enable the work to move downwardly a slight amount when the work is engaged by a punch 22, and such downward movement is resiliently resisted by a yieldingly mounted anvil 120 that is mounted at the embossing position beneath the plate 60 on a rigid cross bar 121 of the machine frame. The cross bar 121 has a vertical guideway 122 formed therein which receives and slidably supports a complemental guide stem 123 formed integrally and in a depending relation on the anvil 120. The anvil 120 is in the form of a head at the upper end of the stem 123, as will be evident in Fig. 12, so as to project laterally over an upper surface 121A of the cross bar 121, and a pair of coil springs 125, disposed in downwardly facing bores 126 in the anvil, act against the surface 121A to urge the anvil in an upward direction. Such action of the springs 125 is limited by an adjustable stop means associated with the stem 123. Thus a threaded stud 128 is mounted in the stem 123 so as to project downwardly beyond the lower surface 121B of the cross bar 121, and a washer 129 disposed on the stud 128 engages the surface 121B to limit such upward movement of the anvil 120 by the springs 125. The stop washer 129 may be adjusted by a pair of lock nuts 130 threaded onto the stud 128, thereby to enable the normal or uppermost position of the anvil 120 to be accurately adjusted.

The form of the anvil 120 is in the present case arranged to afford clearance for the head 21A, as shown in Fig. 11, and for this purpose is slotted at 120A along its rear face. Moreover, in order to facilitate insertion of the plate 60, the forward upper face of the anvil is arranged to slope downwardly as at 120B.

With the arrangement thus afforded, the indenting or impression forming action of a die 22 is governed by the action or reaction of the springs 125, and uniformity of the indented characters is thus assured. Thus, the variations that are encountered in the thickness of medals of a particular kind are rendered immaterial, and high quality work is assured.

From the foregoing description it will be apparent that the present invention enables indented characters to be formed in medals or the like in a simple and expeditious manner and insures uniformity of the indented impressions. Moreover, the present invention enables these indented characters to be readily located not only in the desired laterally centered location, but also in such a relationship that the various lines of characters are properly disposed upon the surface of the medal or the like. The work holding plates 60, each having the interrelated work embracing means, line spacing abutments and locating or positioning lugs formed thereon, enable such work to be performed in the same machine on a large number of different kinds or types of medals, and there is no loss of time in adapting the machine for the performance of indenting operations upon different kinds or types of medals.

Thus, while I have illustrated and described the preferred embodiment of my invention, it is to be understood that this is capable of variation and modification and I therefore do not wish to be limited to the precise details set forth, but desire to avail myself of such changes and alterations as fall within the purview of the following claims.

I claim:

1. In an apparatus for indenting type characters so as to form names and other data in the surface of a medal or the like, means for supporting and traversing such a medal or the like comprising a reciprocable carriage mounted for character spacing movement with relation to said operating position, a cross slide mounted on said carriage for line spacing movement relative to said carriage, a shiftable stop arm mounted on said carriage, spring means urging said arm in one direction toward one position, manually operable means for moving the arm in the opposite direction, a work holding plate having supporting and positioning means thereon to receive and hold a selected medal or the like of a predetermined form in a predetermined relation on said plate, means on said cross slide for releasably securing said plate in a predetermined relationship thereon, an abutment block having a plurality of shoulders and mounted on said plate for cooperation with said stop arm and so disposed on said plate that said shoulders may cooperate with said stop arm to accurately locate each line spacing position of such a selected medal or the like with respect to the predetermined configuration of such selected medal or the like.

2. In an apparatus for indenting type characters so as to form names and other data in the surface of a medal or the like, means for supporting and traversing such a medal or the like comprising a reciprocable carriage mounted for character spacing movement, a cross slide mounted on said carriage for line spacing movement with respect to said carriage, a work holding plate, means on said cross slide affording a slideway along which said plate may be moved rearwardly into a predetermined position on said cross slide, releasable means on said cross slide for securing said plate in said predetermined position on said cross slide, and line spacing means mounted in part on said plate and in part on said carriage for controlling line spacing movement of said cross slide with relation to said carriage.

3. In an apparatus for indenting type characters so as to form names and other data in the surface of a medal or the like, means for

supporting and traversing such a medal or the like comprising a reciprocable carriage mounted for character spacing movement, a cross slide mounted on said carriage for line spacing movement relative to said carriage, manually operable line spacing control means mounted on said carriage, a work holding plate having supporting and positioning means on the upper face thereof to receive and hold a selected medal or the like of a predetermined form in a predetermined relation on said plate, cooperating means on said cross slide and said plate for releasably securing said plate in a predetermined relationship thereon, and an abutment block secured on the lower face of said plate and affording line spacing abutments adapted for cooperation with said line spacing control means and so disposed on said plate as to accurately locate each line spacing position of such a selected medal or the like with respect to the predetermined configuration of such selected medal or the like.

4. In an apparatus for indenting type characters so as to form names and other data in the surface of a medal or the like, means for supporting and traversing such a medal or the like comprising a reciprocable carriage mounted for character spacing movement, a cross slide mounted on said carriage for line spacing movement relative to said carriage, spring means resiliently urging said cross slide in one direction, a shiftable stop arm mounted on said carriage, means yieldingly urging said arm in one direction toward one position, manually operable means for moving the arm in the opposite direction, a work holding plate having supporting and positioning means thereon to receive and hold a selected medal or the like of a predetermined form in a predetermined relation on said plate, means on said cross slide for releasably securing said plate in a predetermined relationship thereon, an abutment block having a plurality of shoulders and mounted on said plate for cooperation with said stop arm and so disposed on said plate that said shoulders may cooperate with said stop arm to hold said cross slide against movement by said spring means to thereby accurately locate each line spacing position of such a selected medal or the like with respect to the predetermined configuration of such selected medal or the like.

5. In an apparatus for indenting type characters so as to form names and other data in the surface of a medal or the like, means for supporting and traversing such a medal or the like comprising a reciprocable carriage mounted for character spacing movement, a cross slide mounted on said carriage for line spacing movement relative to said operating position, said cross slide having spaced side rails with upwardly rabbeted shoulders formed on the adjacent upper edges of said side rails, manually operable line spacing control means mounted on said carriage and including a stop arm disposed in the space between the side rails of said cross slide, a work holding carrier plate having supporting and positioning means thereon to receive and hold a selected medal or the like of a predetermined form in a predetermined relation on said plate, said plate being adapted to rest at its opposite edges on said shoulders of said cross slide so as to be supported thereby and so as to be held against lateral shifting movement, means on said cross slide for releasably securing said plate in a predetermined relationship on said shoulders, and an abutment block secured to the lower face of said plate and affording line spacing abutments accessible beneath the lower face of said plate adapted for cooperation with said stop arm and so disposed on said plate as to accurately locate each line spacing position of such a selected medal or the like with respect to the predetermined configuration of such selected medal or the like.

6. In an apparatus for indenting type characters so as to form names and other data in the surface of a medal or the like, means for supporting and traversing such a medal or the like comprising a reciprocable carriage mounted for character spacing movement, a cross slide mounted on said carriage for line spacing movement relative to said operating position, said cross slide having spaced side rails with upwardly facing parallel shoulders formed on the adjacent upper edges of said side rails, said rails having overhanging portions near their forward edges disposed over and in spaced relation to said shoulders, manually operable line spacing control means mounted on said carriage and including a stop arm disposed in the space between the side rails of said cross slide, a work holding carrier plate having supporting and positioning means thereon to receive and hold a selected medal or the like of a predetermined form in a predetermined relation on said plate, said plate being adapted to rest at its opposite edges on said shoulders of said cross slide with forward edge portions of the plate disposed beneath said overhanging portions so as to be held down by said overhanging portions, and line spacing abutments on the lower face of said plate adapted for cooperation with said stop arm and so disposed on said plate as to accurately locate each line spacing position of such a selected medal or the like with respect to the predetermined configuration of such selected medal or the like.

7. In an apparatus for indenting type characters so as to form names and other data in the surface of a medal or the like, means for supporting and traversing such a medal or the like comprising a reciprocable carriage mounted for character spacing movement, a cross slide mounted on said carriage for line spacing movement relative to said operating position, said cross slide having spaced side rails with upwardly facing parallel shoulders formed on the adjacent upper edges of said side rails, manually operable line spacing control means mounted on said carriage and including a stop arm disposed in the space between the side rails of said cross slide, a work holding carrier plate having supporting and positioning means thereon to receive and hold a selected medal or the like of a predetermined form in a predetermined relation on said plate, said plate being adapted to rest at its opposite edges on said shoulders of said cross slide, means on said cross slide for releasably securing said plate in a predetermined relationship on said shoulders, line spacing abutments on the lower face of said plate adapted for cooperation with said stop arm and so disposed on said plate as to accurately locate each line spacing position of such a selected medal or the like with respect to the predetermined configuration of such selected medal or the like, and spring means acting between said cross slide and said carriage to maintain an aligned one of said abutments in engagement with said stop arm.

8. A work holder for locating and supporting a medal or the like in position in a machine for indenting type characters in a surface of such

medal or the like, such work holder comprising a work holding plate having supporting and positioning means disposed on an upper surface thereof to receive and hold a selected medal or the like of a predetermined form in a predetermined relation on said plate, means affording abutment surfaces on said plate for locating said plate in a predetermined position and an abutment plate secured on the lower surface of said plate and affording line spacing abutments disposed in echelon relationship and adapted to function in determining the line spacing positions of the plate and so disposed on said plate as to accurately locate each line spacing position of such a selected medal or the like with respect to the predetermined configuration of such selected medal or the like.

9. A work holder for locating and supporting a medal or the like in position in a machine for indenting type characters in a surface of such medal or the like, such work holder comprising a work holding plate having supporting means thereon providing a recess substantially complemental to one surface of a selected medal or the like and adapted to receive and hold such medal or the like in a predetermined relation on said plate, spring means on said plate for holding such a medal in position in said matrix, means affording abutment surfaces on said plate for locating said plate in a predetermined position and means on said plate affording line spacing abutments disposed in echelon relationship and adapted to function in determining the line spacing positions of the plate and so disposed on said plate as to accurately locate each line spacing position of such a selected medal or the like with respect to the predetermined configuration of such selected medal or the like.

10. In an apparatus for indenting type characters so as to form names and other data in the surface of a medal or the like, means for supporting and traversing such a medal or the like comprising a carriage and cross slide assembly, said cross slide having a work holding plate removably mounted in a predetermined position thereon and having positioning means thereon for supporting a medal or the like, and a resiliently mounted anvil disposed beneath said plate so as to resiliently support said plate.

11. In an apparatus for indenting type characters so as to form names and other data in the surface of a medal or the like, means for supporting and traversing such a medal or the like comprising a frame, a reciprocable carriage mounted on said frame for character spacing movement, a cross slide mounted on said carriage for line spacing movement relative to said carriage, manually operable line spacing control means mounted on said carriage, a work holding plate having supporting and positioning means thereon to receive and hold a selected medal or the like of a predetermined form in a predetermined relation on said plate, means on said cross slide for releasably securing said plate in a predetermined relationship thereon, and means including an anvil resiliently supported on said frame and operable to resiliently support said plate against the indenting forces applied thereto.

12. In an apparatus for indenting type characters so as to form names and other data in the surface of a medal or the like, means for supporting and traversing such a medal or the like comprising a reciprocable carriage mounted for character spacing movement, a cross slide mounted on said carriage for line spacing movement relative to said carriage, manually operable line spacing control means mounted on said carriage, a work holding plate having supporting and positioning means thereon to receive and hold a selected medal or the like of a predetermined form in a predetermined relation on said plate, means on said cross slide for releasably securing said plate on said cross slide so as to project in a rearward overhanging relation from said cross slide and thereby dispose said work supporting and positioning means beneath the punch at said operating position, line spacing abutments on said plate adapted for cooperation with said line spacing control means and so disposed on said plate as to accurately locate each line spacing position of such a selection medal or the like with respect to the predetermined configuration of such selected medal or the like, and a resiliently supported anvil engaging said overhanging portion of said plate to resiliently support the same.

13. In an apparatus for indenting type characters so as to form names and other data in the surface of a medal or the like, means for supporting and traversing such a medal or the like comprising a reciprocable carriage mounted for character spacing movement, a cross slide mounted on said carriage for line spacing movement with respect to said carriage, a work holding plate, means on said cross slide for locating said plate in a predetermined position on said cross slide and including releasable latch means for releasing said plate for withdrawal from said position, line spacing means mounted in part on said plate and in part on said carriage for controlling line spacing movement of said cross slide with relation to said carriage, and a resiliently supported anvil disposed beneath and in supporting relation to said plate.

14. In an apparatus for indenting type characters so as to form names and other data in the surface of a medal or the like, means for supporting such a medal or the like comprising a frame, a reciprocable carriage mounted on said frame for character spacing movement, a cross slide mounted on said carriage for line spacing movement with respect to said carriage, a work holding plate removably mounted in a predetermined position on said cross slide such that a portion of said plate is disposed in an overhanging relation to said cross slide, and means mounted on said frame and operable to resiliently support said overhanging portion of said plate.

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