

Feb. 23, 1960

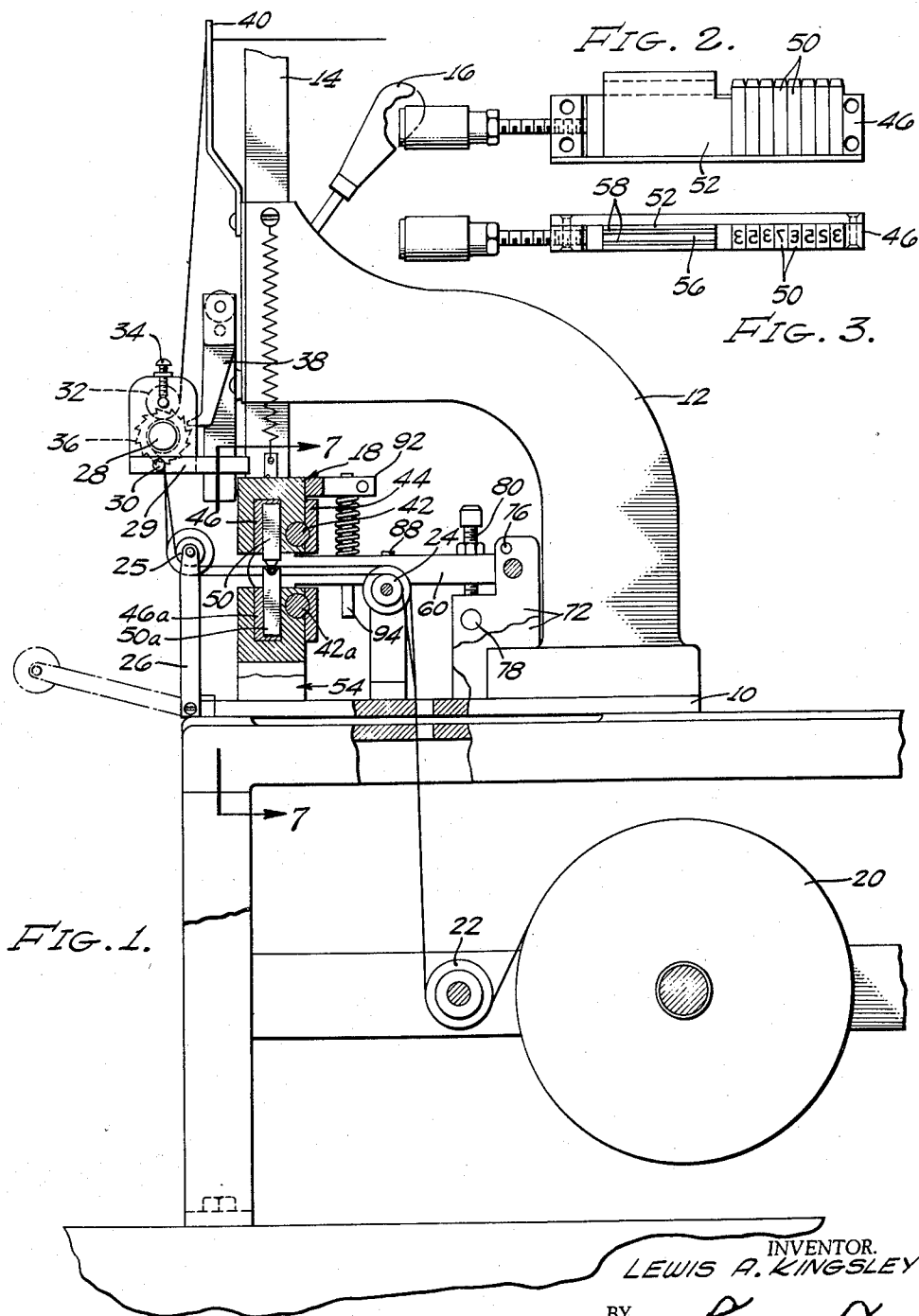
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2,925,773

DOUBLE SIDED WIRE MARKING MACHINE

Filed Jan. 28, 1957

4 Sheets-Sheet 1



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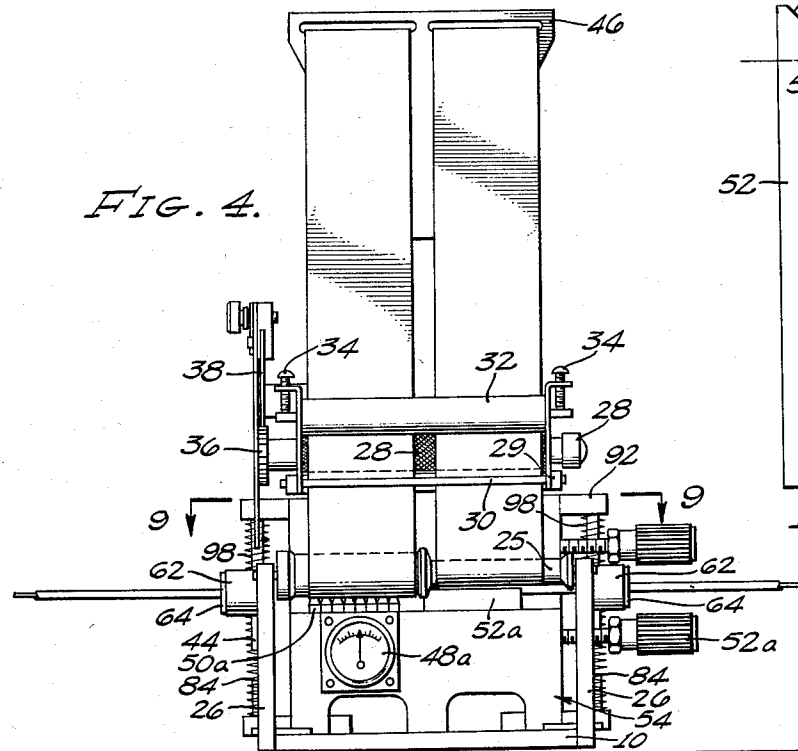
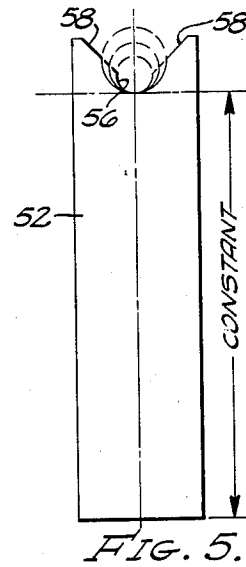
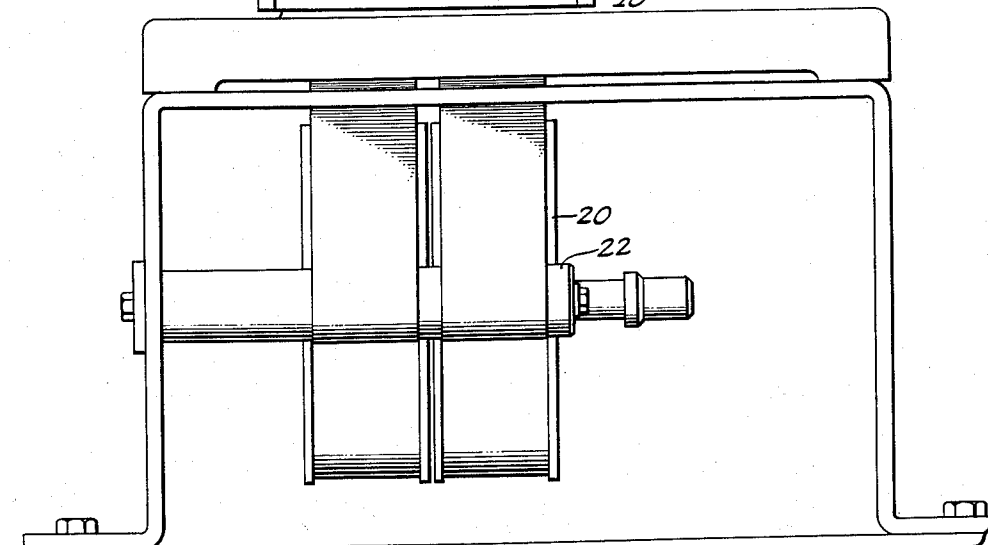
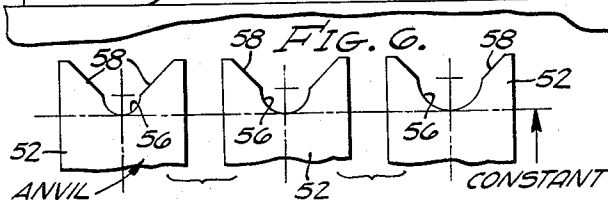
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DOUBLE SIDED WIRE MARKING MACHINE

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FIG. 4.



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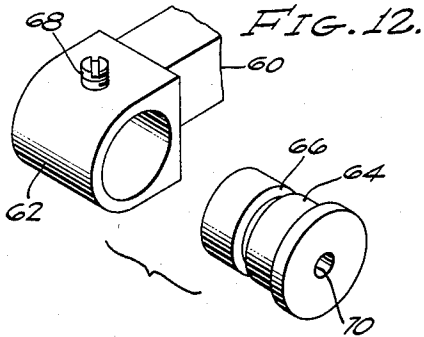
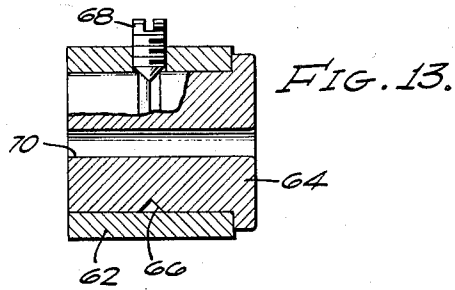
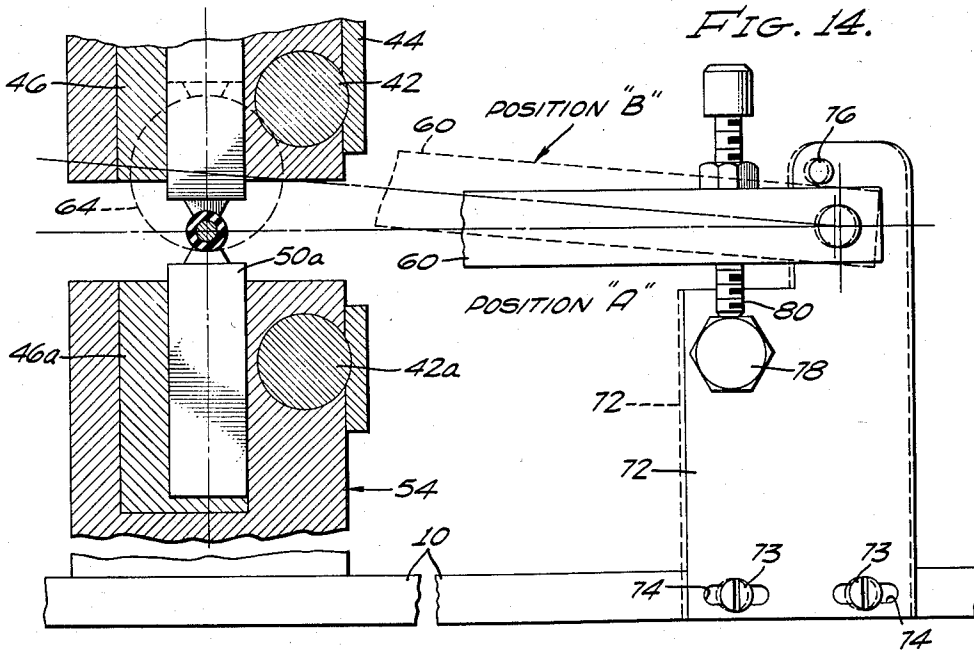
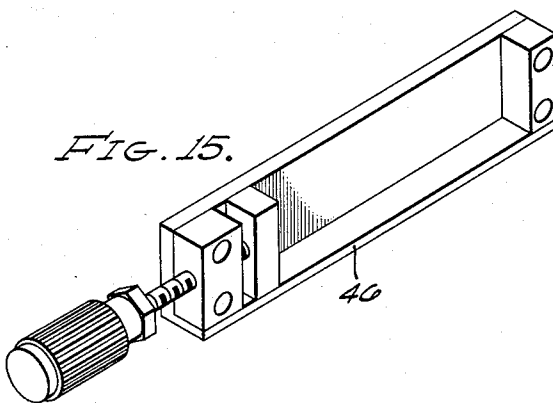
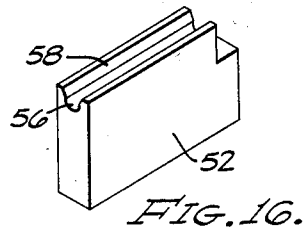
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DOUBLE SIDED WIRE MARKING MACHINE

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4 Sheets-Sheet 4



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2,925,773

DOUBLE SIDED WIRE MARKING MACHINE

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Application January 28, 1957, Serial No. 636,588

17 Claims. (Cl. 101—11)

This invention relates to an improved hot stamping machine and more specifically to a machine for simultaneously marking a wire or a similar object on both sides.

It is an object of this invention to provide a machine which will clearly and accurately mark with a required designation and at appropriately spaced intervals a wire or similar object fed through the machine.

It is a further object of this invention to provide means for properly supporting said wire during the marking process.

It is still a further object of this invention to provide means for properly centering the wire with respect to the type and to hold same against slipping during the marking process.

It is still a further object of this invention to provide improved guiding means directing movement of the wire or similar object through the machine.

Other objects and advantages will be readily apparent from the following description.

In the drawings:

Figure 1 is a side elevation partially in section of a machine embodying this invention.

Figure 2 is a side elevation of one of the type holders.

Figure 3 is a plan view of one of the type holders.

Figure 4 is a front elevation of the machine.

Figure 5 is an end view of one of the anvils.

Figure 6 is a fragmentary end view of a series of anvils.

Figure 7 is a view taken along line 7—7 of Figure 1.

Figure 8 is a view taken along line 8—8 of Figure 7.

Figure 9 is a view taken along line 9—9 of Figure 4.

Figure 10 is a side elevation of the wire guiding mechanism during stamping.

Figure 11 is a view similar to Figure 10 after stamping.

Figure 12 is a fragmentary perspective of the wire guiding element.

Figure 13 is a section of the wire guiding element.

Figure 14 is a side elevation of the wire guiding mechanism with certain parts broken away.

Figure 15 is a perspective of the type holder.

Figure 16 is a perspective of the anvil.

The hot stamping machine is an improvement on the machine shown in my previous Patent No. 2,047,373, issued April 4, 1932, and includes a base 10, a gooseneck member 12 overhanging the base. The gooseneck member 12 is provided with a vertical guideway for ram bar 14. The bar 14 is reciprocated by a handle 16 and a rack and pinion drive means, not shown. The lower extremity of the ram bar 14 carries a transversely disposed type holder head 18.

Mounted below base 10 is a foil supply reel 20 adapted to contain a ribbon of foil which is trained over idler rollers 22 and 24 forwardly under type holder head 18. The foil is then trained over a further idling roller 25 which is mounted on arm 26, in turn pivotally mounted on base 10 to adjust the foil tension. The foil is then trained over a roller 28 mounted by bracket 29 to ram bar 14. Beneath roller 24 is a rod 30 and above same

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is a roller 32 holding the foil in contact with roller 28. The roller 32 may be adjusted by set screws 34 to tension the foil. A ratchet 36 is mounted on roller 28 engaged by pawl 38 mounted by a bracket on gooseneck 12. The foil is then trained upwardly over guide 40 and then rearwardly into a trash receptacle. Thus each time the ram bar 14 is lowered the foil is pulled a slight distance across the type holder head 18 insuring fresh foil for each stamping operation.

Since this machine simultaneously marks on both sides of the wire, there are provided two duplicate foil systems although only one has been described in detail (see Figure 4).

The type holder head 18 contains a heating element 42 which is held in place by plate 44 and is connected to a suitable electrical source. A type holder 46 fits into a slot in head 18 and the type is heated so that upon contact with the foil it will melt a portion of the ink on the foil and deposit it on the object to be stamped. A temperature gauge 48 on head 18 indicates the temperature attained.

The type holder 46 at one extremity receives type 50 and at the opposite extremity an anvil 52. The details of construction of the anvil will be described in detail hereinafter.

Positioned below the type holder head 18 mounted upon ram bar 14 is a second type holder head 54. A second type holder 46a is inserted into this type holder which likewise has type 50a and an anvil 52a held therein.

In assembling each type holder and its type and anvil, the type and anvil are positioned so that the type in the upper holder 46 is opposed to the anvil in the lower holder 46a and vice versa.

In Figure 6 the formation of the anvils 52 and 52a is illustrated.

The upper face of the anvil contains a semicircular groove 56, the lowermost point of which is a predetermined distance below the upper extremity of the anvil. The groove 56 flares outwardly as at 58 towards the edges of the anvil at the termination of semicircular groove 56. Thus when a wire is lowered into the notch formed by groove 56 and inclined faces 58 it engages one of the latter and is guided into the semicircular groove properly positioning the wire in line with the type for marking. The diameter of groove 56 should be substantially the same as that of the wire being marked to avoid movement of the wire during marking. For this reason several anvils having different size grooves are illustrated in Figure 6.

To hold the wire before and after the marking process a floating wire support mechanism is illustrated.

A pair of arms such as 60 are provided one on each side of the machine. Each arm at its extremity carries a sleeve 62 (see Figures 12 and 13), which receive a wire guide bushing 64, having a peripheral groove 66 adapted to receive set screw 68, locking the bushing in the sleeve. A bore 70 extends through bushing 64 through which the wire to be marked passes, the diameter of which is substantially the same as that of bore 70 to minimize movement of the wire transversely in bore 70 while permitting longitudinal movement therethrough. Each arm 60 is pivotally mounted upon a post 72 which in turn is secured by screws 73 projecting through slots 74 to base 10. The post may be moved forward or backward with respect to the type holder by loosening screws 73. Mounted upon post 72 is an upper stop 76, a pin which limits upward pivoting of arm 60 and a lower stop 78, a nut which when engaged by screw 80 on arm 60 limits downward pivoting of arm 60. The screw 80 may be adjusted to vary the stroke of arm 60.

Spring 84 is centered on stud 86. A pin 88 projects

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from arm 60 into the upper extremity of spring 84, which spring functions to urge the arm to pivot upwardly against stop 76. Screw 90 secures pin 88 in place permitting replacement or adjustment thereof.

Mounted upon type holder head 18 is a bracket 92 which has depending therefrom a rod 94 which projects into a suitable slot 96 in arm 60. A spring 98 surrounds rod 94 and urges arm 60 downwardly.

Thus in operation the heating element 42 which is adjacent the type in the upper type holder 46 and corresponding heating element 42a adjacent type in the lower type holder 46a are heated from a suitable electrical source. Thermometers 48 and 48a indicate when the temperature has reached the desired heat. The foil is trained through the machine. The wire to be marked is reeved through bushings 64.

When handle 16 is pivoted the upper type holder 18 is lowered toward the lower type holder 54. Spring 98 upon lowering of holder 18 pivots arm 60 downwardly compressing spring 84. The arcuate travel of the wire bushings 64 is adjusted by movement of posts 72 so that the wire being marked is seated properly in anvils 52 and 52a upon contact of the foil therewith. The heated types 50 and 50a urge the foil into contact with the wire to be stamped and melt the ink thereon stamping the desired indicia on the wire.

When the type has been held down the desired length of time handle 16 is released and spring 102 raises type holder head 18. Springs 84 pivot arms 60 upwardly thereby raising the wire off the hot type and anvil in lower type holder 54. Stop 76 limits upward pivoting of the arm 60 so that between stamping operations the wire is the farthest possible distance from the type and anvils, thereby avoiding damage to the insulation during movement of the wire through the bushings 64 either by mechanical or manual force.

Although the machine has been described as particularly adapted to wire marking, it is of course, usable on a multitude of objects it is desired to mark.

While what hereinbefore has been described is the preferred embodiment of this invention it is readily apparent that alterations and modifications can be resorted to without departing from the scope of this invention and such alterations and modifications are intended to be included within the scope of the appended claims.

I claim:

1. In a hot stamping machine of the type having a base and a reciprocating type holder head with foil trained between said base and head, the combination of: a second type holder head between said base and foil and in the path of said first mentioned type holder head, a type holder insertable into each of said heads, and an anvil in each holder, and type in each holder positioned with respect to the anvil in each holder so that the type of one holder is opposed to the anvil of the other.

2. In a hot stamping machine of the type having a base and a reciprocating type holder head with foil trained between said base and head, the combination of: a second type holder head between said base and foil and in the path of said first mentioned type holder head, a type holder insertable into each of said heads, an anvil in each holder, type in each holder positioned with respect to the anvil in each holder so that the type of one holder is opposed to the anvil of the other, and a groove in each anvil receiving the work to be stamped and centering same with respect to the type.

3. In a hot stamping machine of the type having a base and a reciprocating type holder head with foil trained between said base and head, the combination of: a second type holder head between said base and foil and in the path of said first mentioned type holder head, a type holder insertable into each of said heads, an anvil in each holder, type in each holder positioned with respect to the anvil in each holder so that the type of one holder is opposed to the anvil of the other, and a groove in each

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anvil receiving the work to be stamped and centering same with respect to the type, said groove having a semi-circular portion at the base thereof which flares outwardly adjacent the extremity of said anvil.

4. In a hot stamping machine of the type having a base and a reciprocating type holder head with foil trained between said base and head, the combination of: a second type holder head between said base and foil and in the path of said first mentioned type holder head, a type holder insertable into each of said heads, an anvil in each holder, type in each holder positioned with respect to the anvil in each holder so that the type of one holder is opposed to the anvil of the other, and a groove in each anvil receiving the work to be stamped and centering same with respect to the type, said groove having a semi-circular portion at the base thereof which flares outwardly adjacent the extremity of said anvil, said semi-circular portion having substantially the same diameter as the work to be stamped.

5. In a hot stamping machine of the type having a base and a reciprocating type holder head with foil trained between said base and head, the combination of: a second type holder head between said base and foil and in the path of said first mentioned type holder head, a type holder insertable into each of said heads, an anvil in each holder, type in each holder positioned with respect to the anvil in each holder so that the type of one holder is opposed to the anvil of the other, a groove in each anvil receiving the work to be stamped and centering same with respect to the type, and work holding means supporting the work as same is advanced through the machine.

6. In a hot stamping machine of the type having a base and a reciprocating type holder head with foil trained between said base and head, the combination of: a second type holder head between said base and foil and in the path of said first mentioned type holder head, a type holder insertable into each of said heads, an anvil in each holder, type in each holder positioned with respect to the anvil in each holder so that the type of one holder is opposed to the anvil of the other, a groove in each anvil receiving the work to be stamped and centering same with respect to the type, work holding means supporting the work as same is advanced through the machine, said work holding means being biased upwardly away from said second type holder head, and means on said first mentioned type holder head for resiliently engaging said work holding means.

7. In a hot stamping machine of the type having a base and a reciprocating type holder head with foil trained between said base and head, the combination of: a second type holder head between said base and foil and in the path of said first mentioned type holder head, a type holder insertable into each of said heads, an anvil in each holder, type in each holder positioned with respect to the anvil in each holder so that the type of one holder is opposed to the anvil of the other, a groove in each anvil receiving the work to be stamped and centering same with respect to the type, and work holding means supporting the work as same is advanced through the machine, said work holding means including a work guide bushing having a bore of substantially the same diameter as the bore through which the work passes.

8. In a hot stamping machine of the type having a base and a reciprocating type holder head with foil trained between said base and head, the combination of: a second type holder head between said base and foil and in the path of said first mentioned type holder head, a type holder insertable into each of said heads, an anvil in each holder, type in each holder positioned with respect to the anvil in each holder so that the type of one holder is opposed to the anvil of the other, a groove in each anvil receiving the work to be stamped and centering same with respect to the type, work holding means supporting the work as same is advanced through

9. In a hot stamping machine of the type having a base and a reciprocating type holder head with foil trained between said base and head, the combination of: a second type holder head between said base and foil and in the path of said first mentioned type holder head, a type holder insertable into each of said heads, an anvil in each holder, type in each holder positioned with respect to the anvil in each holder so that the type of one holder is opposed to the anvil of the other, a groove in each anvil receiving the work to be stamped and centering same with respect to the type, work holding means supporting the work as same is advanced through the machine, means for pivotally supporting said work holding means, means urging said work holding means upwardly, means on said first mentioned type holder head for resiliently engaging said work holding means, and stop means on said work holding supporting means limiting pivoting thereof in either direction.

11. In a hot stamping machine of the type having a base and a reciprocating type holder head with foil trained between said base and head, the combination of: a second type holder head between said base and foil and in the path of said first mentioned type holder head, a type holder insertable into each of said heads, an anvil in each holder, type in each holder positioned with respect to the anvil in each holder so that the type of one holder is opposed to the anvil of the other, a groove in each anvil receiving the work to be stamped and centering same with respect to the type, work holding means supporting the work as same is advanced through the machine, means for pivotally supporting said work holding means, means urging said work holding means upwardly, means on said first mentioned type holder head for resiliently engaging said work holding means, stop means on said work holding supporting means limiting pivoting thereof in either direction, and means for moving the pivot point of said work holding means.

13. In a hot stamping machine of the type having a 75

15. In a hot stamping machine of the type having a base and a reciprocating type holder head with foil trained between said base and head, the combination of: a second type holder head between said base and foil and in the path of said first mentioned type holder head, a type holder insertable into each of said heads, an anvil in each holder, type in each holder positioned with respect to the anvil in each holder so that the type of one holder is opposed to the anvil of the other, a groove in each anvil receiving the work to be stamped and centering same with respect to the type, said groove having a semicircular portion at the base thereof which flares outwardly adjacent the extremity of said anvil, work holding means supporting the work as same is advanced through the machine, means for pivotally supporting said work holding means, means urging said work holding means upwardly and means on said first mentioned type holder head for resiliently engaging said work holding means.

16. In a hot stamping machine of the type having a base and a reciprocating type holder head with foil trained between said base and head, the combination of: a second type holder head between said base and foil and in the path of said first mentioned type holder head, a type holder insertable into each of said heads, an anvil in each holder, type in each holder positioned with respect to the anvil in each holder so that the type of one holder is opposed to the anvil of the other, a groove in each anvil receiving the work to be stamped and centering same with respect to the type, said groove having a semicircular portion at the base thereof which flares outwardly adjacent the extremity of said anvil, work holding means supporting the work as same is advanced through the machine, means for pivotally supporting said work holding means, means urging said work holding means upwardly, means on said first mentioned type

holder head for resiliently engaging said work holding means, and stop means on said work holding supporting means limiting pivoting thereof in either direction.

17. In a hot stamping machine of the type having a base and a reciprocating type holder head with foil trained between said base and head, the combination of: a second type holder head between said base and foil and in the path of said first mentioned type holder head, a type holder insertable into each of said heads, an anvil in each holder, type in each holder positioned with respect to the anvil in each holder so that the type of one holder is opposed to the anvil of the other, a groove in each anvil receiving the work to be stamped and centering same with respect to the type, said groove having a semicircular portion at the base thereof which flares outwardly adjacent the extremity of said anvil, work holding means supporting the work as same is advanced through the machine, means for pivotally supporting said work holding means, means urging said work holding means upwardly, means on said first mentioned type

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holder head for resiliently engaging said work holding means, stop means on said work holding supporting means limiting pivoting thereof in either direction and means for moving the pivot point of said work holding means.

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