Dec. 3, 1963 R. A. PANNIER 3,112,688

REMOTELY OPERATED METAL STAMPING AND MARKING MACHINE

Filed Jan. 9, 1959 6 Sheets-Sheet 1

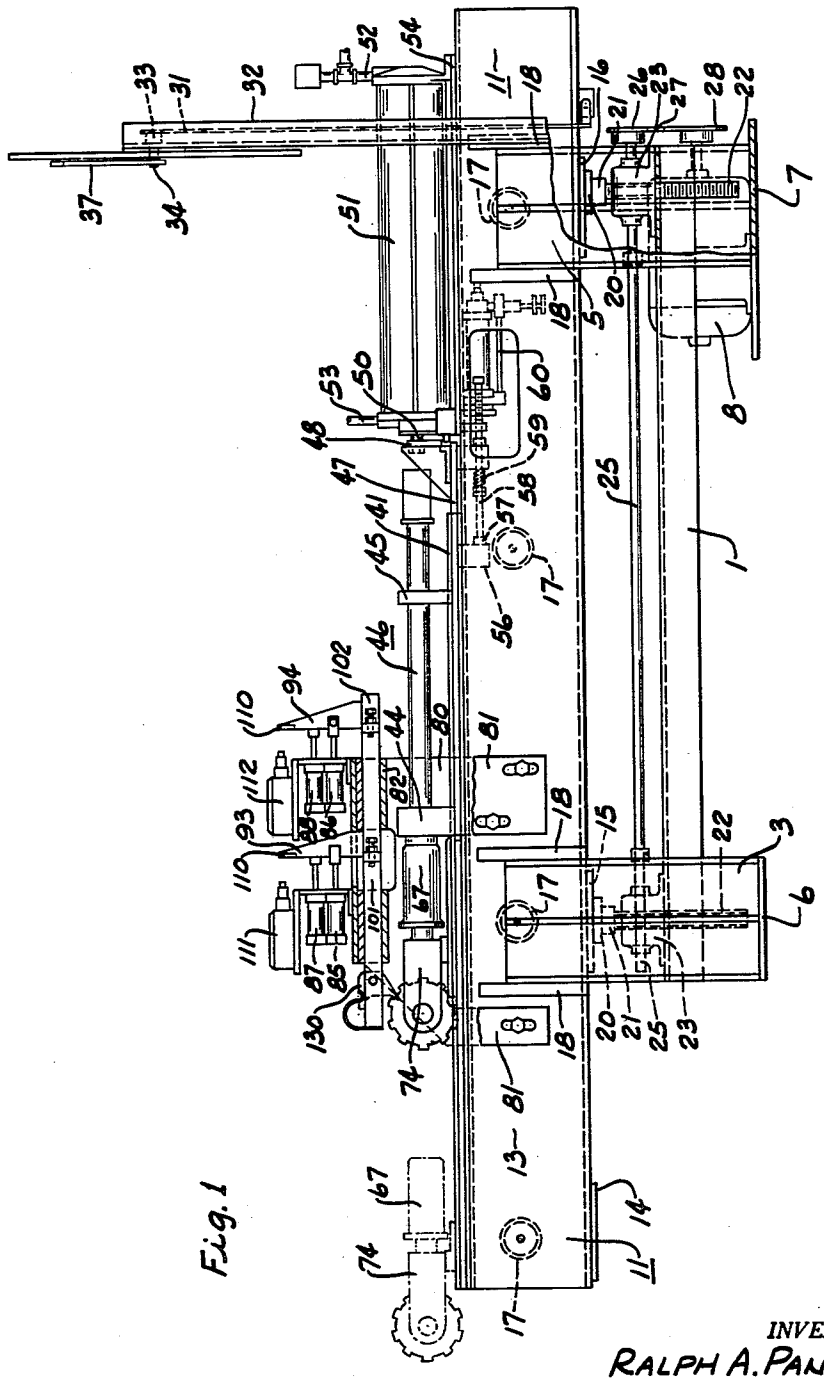

Fig. 1

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REMOTELY OPERATED METAL STAMPING AND MARKING MACHINE

Filed Jan. 9, 1959 6 Sheets-Sheet 2

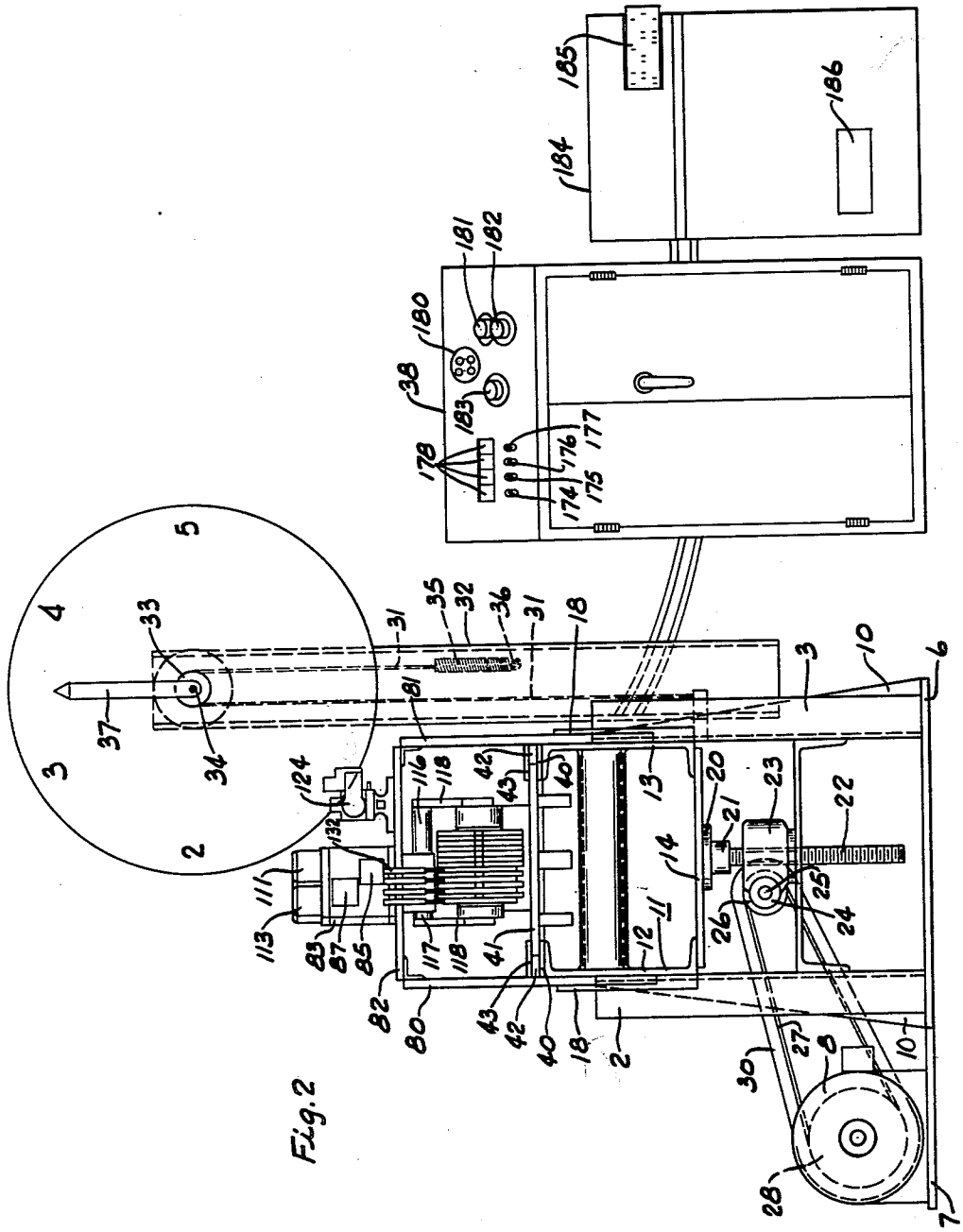

Fig. 2

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REMOTELY OPERATED METAL STAMPING AND MARKING MACHINE

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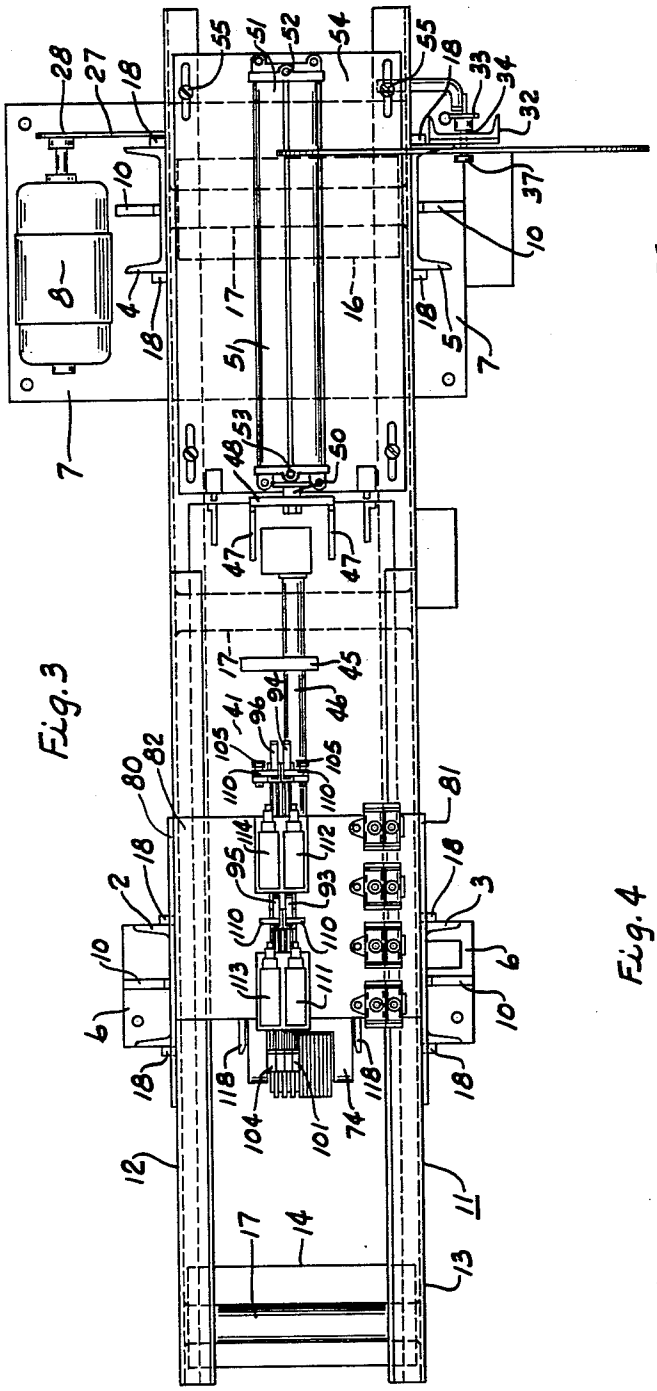

Fig. 3

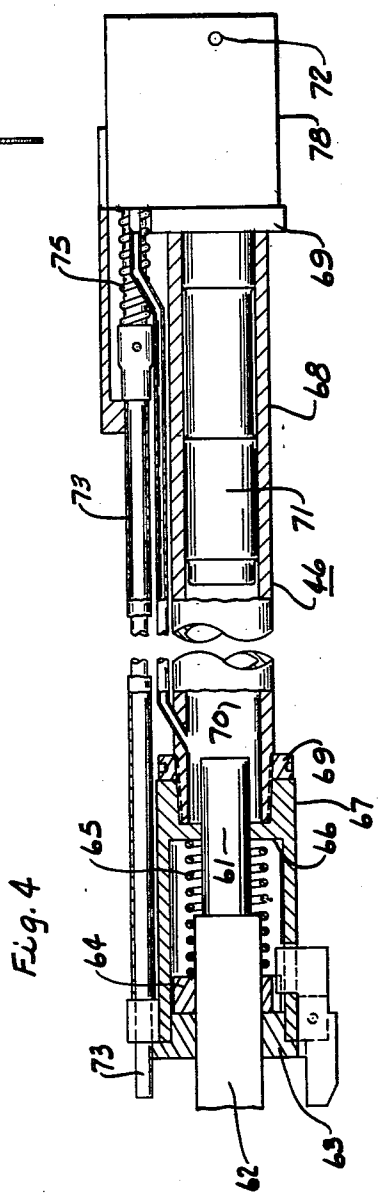

Fig. 4

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REMOTELY OPERATED METAL STAMPING AND MARKING MACHINE

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Fig. 5

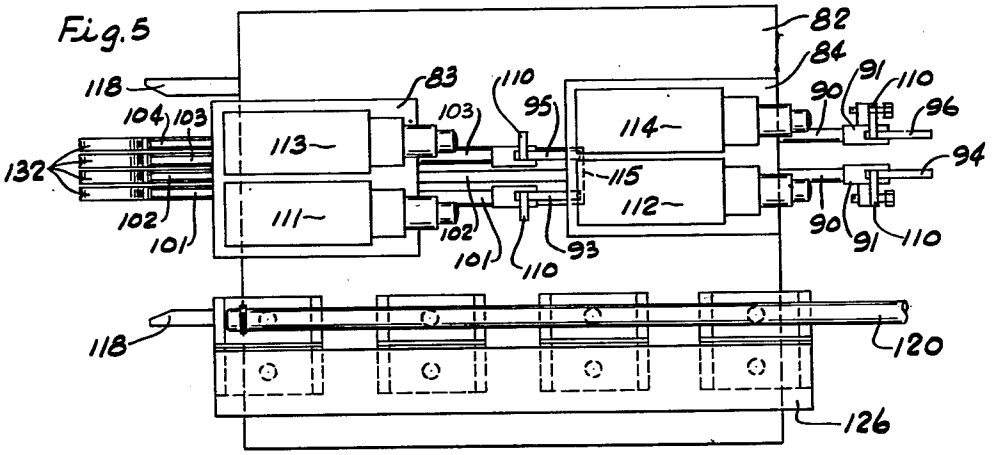


Fig. 6

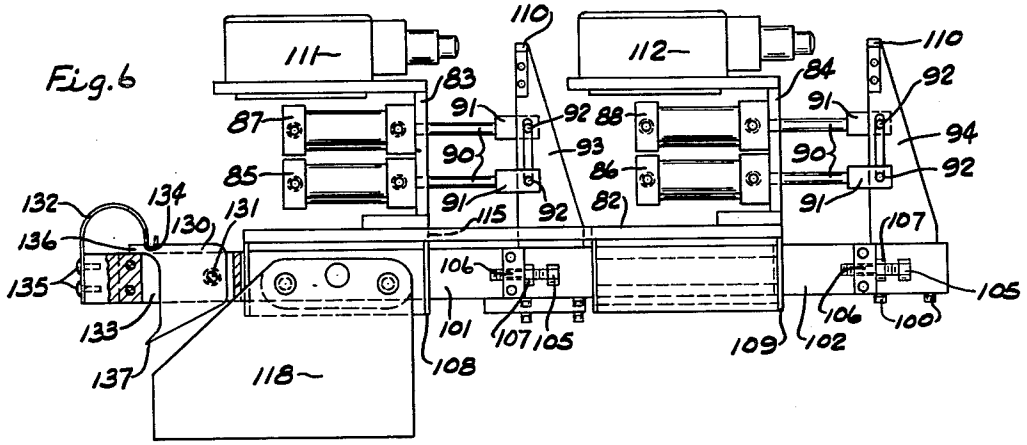
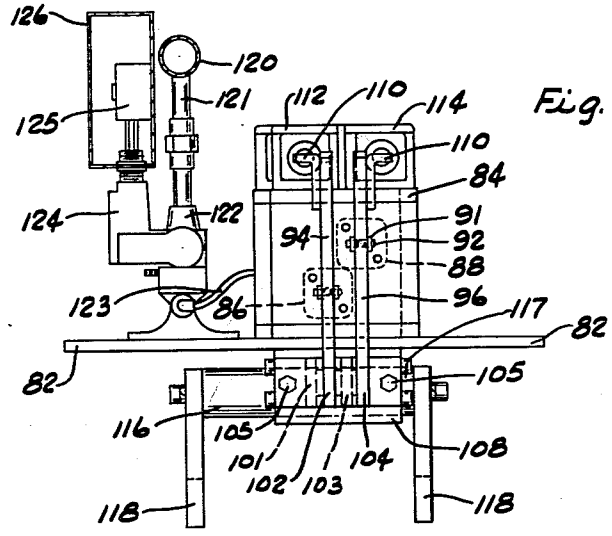


Fig. 7



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Dec. 3, 1963 R. A. PANNIER 3,112,688

REMOTELY OPERATED METAL STAMPING AND MARKING MACHINE

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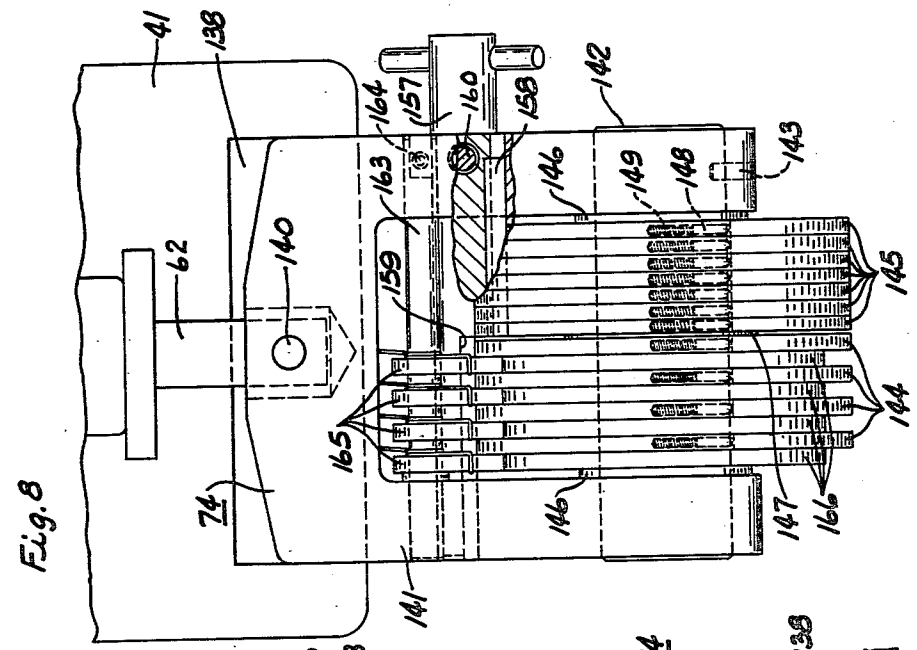

Fig. 8

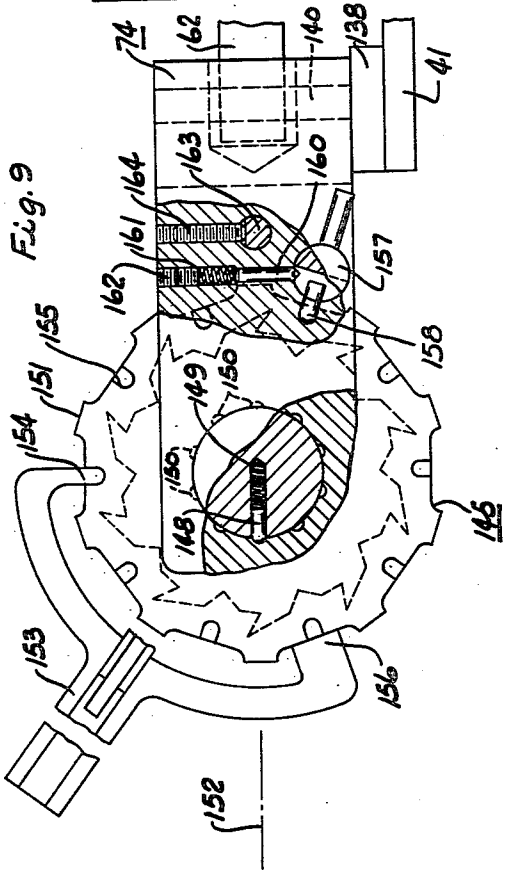

Fig. 9

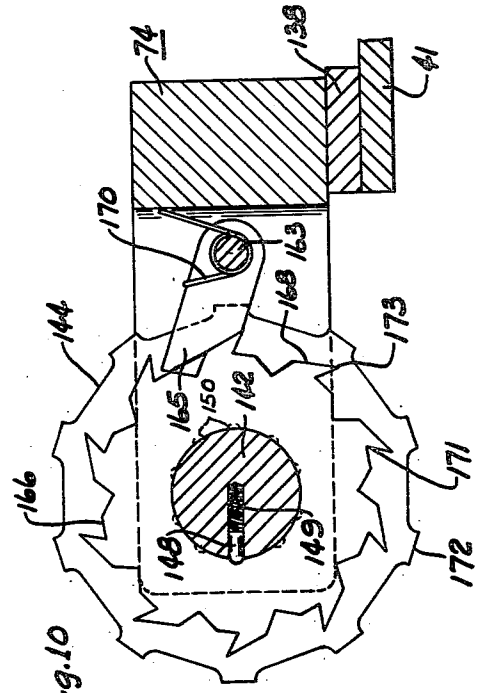

Fig. 10

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REMOTELY OPERATED METAL STAMPING AND MARKING MACHINE

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Fig. 11

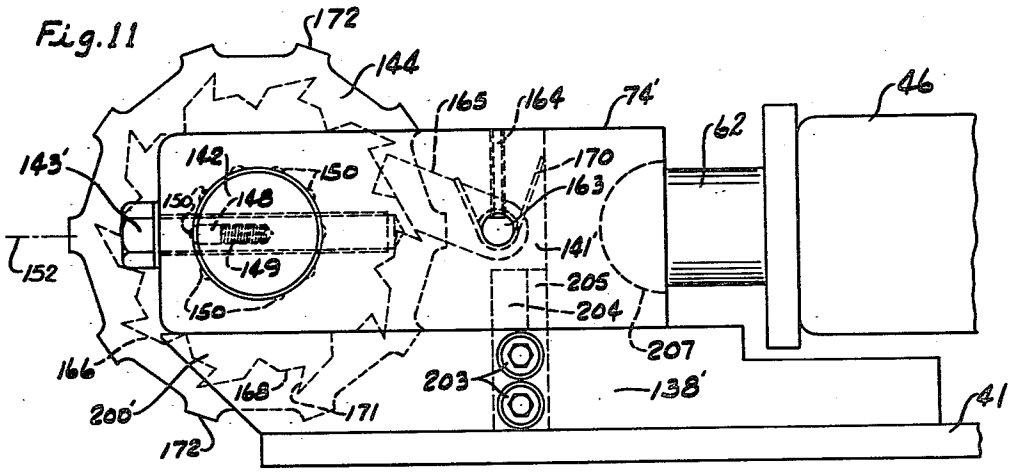
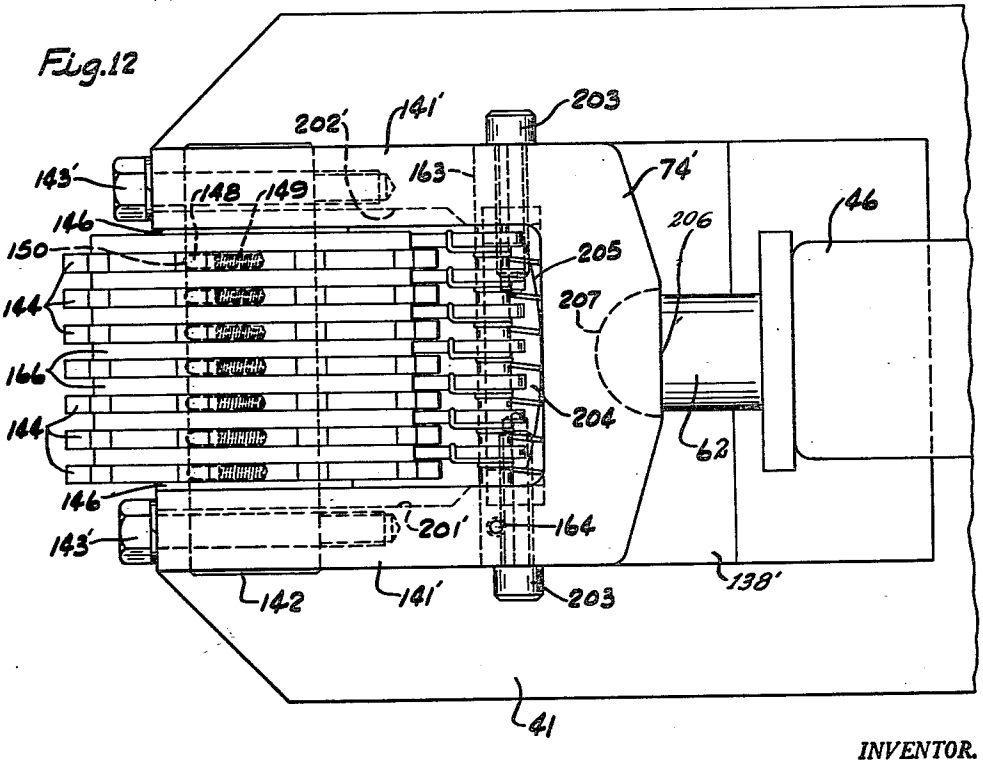


Fig. 12



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United States Patent Office 3,112,688
Patented Dec. 3, 1963

3,112,688

REMOTELY OPERATED METAL STAMPING AND MARKING MACHINE

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Filed Jan. 9, 1959, Ser. No. 785,968
13 Claims. (Cl. 101—4)

This invention relates generally to improvements in metal stamping and marking machines and more particularly to machines which may be remotely set automatically to mark the proper indicia or materials being fabricated.

In the present production and fabrication of materials it is desirable and in some instances necessary to stamp or otherwise mark the material as it progresses through the mill. This marking may include the date, the character of the batch or mix making up the material, ingredients, the size or lineal weight, and if metal, the finish, the gauge, the heat, the section, together with the trademarks and other data. As the history of the product becomes more involved the marking or stamping likewise becomes involved and in the progress of automation where a perforated card sets up a mill as to what the product will be and which is thereafter automatically progressed from its inception to the finished product, the scheme must necessarily include stamping and marking of the product. This may include the marking of hot bullets or ingots as disclosed in U.S. Patent 2,776,617 or it may be for rails, rods and structural members, or plates, sheets and strips all of which may be either hot or cold.

The marking device comprising this invention may lie horizontally and mark the edge of the material or it may be suspended to mark the top surface. The marking includes stamping by the impression of indicia therein or by printing, stenciling or the like which can be performed on hot as well as cold metal or other materials.

The principal object of this invention is the provision of a marking machine that can have the indicia to be stamped, selected remotely and automatically. This involves step indexing of the character wheels by impulses which are preferably electric and which may be manually initiated by a pushbutton or by a perforated card which sets up the whole of the manufactured run and as the material progresses through the mill it becomes automatically identified at each stage.

To carry out this object the marking device is provided with an extensible head containing the marking or character wheels which are locked when extended for marking but when retracted each wheel is capable of being indexed to register the proper character and the position of the wheel at all times is indicated at the remote control station. An interlock prevents the actuation of the character wheel indexing structure unless the head is retracted in proper position.

The marking device comprising this invention may be shifted to different elevations for the purpose of marking the sides of material having different thicknesses such as for slabs, blooms, and ingots. The elevation of the marking head is also remotely controlled and provided with a check indication.

Other objects and advantages appear hereinafter in the following description and claims.

The accompanying drawings show for the purpose of exemplification without limiting the invention or claims thereto, certain practical embodiments illustrating the principles of this invention wherein:

FIG. 1 is a view in side elevation of the marking machine comprising this invention.

FIG. 2 is a view in elevation of the front end of the marking machine comprising this invention.

FIG. 3 is a view in top plan of the marking machine comprising this invention.

FIG. 4 is an enlarged view partly in section of the piston and cylinder structure for actuating the marking head.

FIG. 5 is an enlarged view in top plan of the resetting mechanism comprising this invention.

FIG. 6 is an enlarged view in side elevation of the resetting mechanism comprising this invention.

FIG. 7 is an enlarged view of the rear end of the resetting mechanism comprising this invention.

FIG. 8 is an enlarged plan view of the marking head comprising this invention with parts in section.

FIG. 9 is an enlarged view in vertical section of the marking head with parts broken away and showing the setting of the manually operated character wheels.

FIG. 10 is an enlarged view in vertical section of the marking head showing the locking pawl of the automatically set character wheel.

FIG. 11 is an enlarged view in side elevation of a modified form marking head having a full complement of automatically set character wheels.

FIG. 12 is a plan view of FIG. 11.

Referring to FIGS. 1 and 3 the marking machine comprises the base member 1 in the form of an inverted channel which is supported at its opposite ends by the outwardly facing vertical channel members 2, 3, 4 and 5. Pairs of legs 2 and 3 are connected by the transverse plate 6 and the pairs of legs 4 and 5 are connected by the transverse plate 7 which also functions as a support for the hoist gear motor 8. Each of the channel members are also based by the triangular shaped gusset plates 10. The pairs of legs 2 and 3 and 4 and 5 function as guides for the adjustable platform member 11 which is formed as shown in FIG. 2 by the oppositely facing channel members 12 and 13 connected by the spaced lower plate members 14, 15 and 16 and by the four tubular cross braces 17. The outer face of the channel members 12 and 13 is provided with the vertically disposed spaced guides 18 to receive the opposite sides of the legs 2 to 5 inclusive for guiding the vertical movement of the platform 11. The cross plates 15 and 16 have secured to their underface the flange portion 20 of the socket 21 which supports the vertically disposed screw members 22 that travel in rotary nuts in the jack housing 23, the outer surface of which is provided with worm gear teeth to mesh with the worm gear 24 on the elevating drive shaft 25. The elevating drive shaft 25 extends between each of the jack members 23 and its rear end is provided with a drive sprocket 26 connected by a chain 27 with the sprocket 28 on the shaft of the gear motor 8. A guard 30 covers the chain 27 as illustrated in FIG. 2 but is omitted in the other figures for the sake of clarity. Thus by rotating the gear motor 8 the elevating drive shaft 25 may be rotated in either direction to operate the screw jacks 28 and raise or lower the platform 11. When a marking device of this character is installed, it is ordinarily to mark a definite size of articles. Let it be assumed that the articles to be marked would be hot ingots or slabs passing the station of this marking device and these ingots or slabs would have different thicknesses and if it is desirable to place the stamping in the center of the side of the ingot the platform is elevated to a predetermined level through electric controls and stop circuits being initially set electrically by a card index. Thus the platform 11 has attached thereto the dial actuating line 31 which extends upwardly in the dial bracket 32 and passes over the dial sprocket 33 fixed to the dial shaft 34 mounted in suitable bearings and down to where it opposite end is connected to the end of the dial spring 35 anchored as at 36 to the dial housing 32. Thus as the platform moves up and down in its guides the dial

chain 31 rotates the dial shaft 35 and causes the indicator 37 to indicate the level station to which the platform reposes to provide a visual contact at the location of the machine. However, the stop limits on the motor 28 provide a visual indication at the remote control station indicated at 38.

As illustrated in FIG. 2 the top flanges of the channel members 12 and 13 forming the platform 11 are provided with the base wearing strips 40 upon which the carriage 41 is mounted for reciprocation. A gib plate 42 is provided above the strips 40 for the purpose of forming ways to slidably support the carriage 41 formed by the wearing strip 40 and the gib plate 42. Keeper plates 43 on top of the gib plates complete the construction of the ways.

The carriage 41 is essentially a hammer mounting plate and has secured thereto the front and rear hammer mounting brackets 44 and 45 which support the hammer 46. The rear of the carriage or plate 41 has the spaced upstanding angle brackets 47 which are connected by the crosshead 48 secured to the end of the piston 50 that operates in the cylinder 51. This piston is a double-acting fluid piston having its control lines indicated at 52 and 53 for the purpose of sliding the carriage forward to a position where the characters of the marker engages the object to be marked and upon completion of this operation retracts the carriage to the position shown in FIGS. 1 and 3. A plate 54 extending across the channel members 12 and 13 of the platform 11 supports the air cylinder 51. This plate is made adjustable as indicated in FIG. 3 so that the location of the piston at its extended or retracted position may be set by moving the plate 54 relative to its mounting bolts indicated at 55. This adjustment properly locates the marker for stamping. As shown in FIG. 1 the carriage has secured on the underside of the hydrocheck stop member 56 which engages the shoe 57 on the end of the return adjustable stop screw 58 which is loaded by the return spring member 59. This device determines the retracted position of the piston and carriage 41 and operates in conjunction with the hydrocheck member illustrated at 60 mounted on the underside of the plate 54 as shown in FIG. 1.

The hammer member 46 is shown in detail in FIG. 4 wherein the plunger member 61 is retained in the plunger holder 62 slidable in the nut 63. The plunger holder 62 has a collar 64 threadably connected therewith and is biased to engage the nut 63 by the spring member 65 which engages the opposite end of the spring chamber 66 of the forward housing 67 that is threadably secured to the forward end of the rear housing 68 and is retained in place by the lock nut 69.

The plunger 61 extends through the chamber 66 into the chamber 70 of the rear housing 68 in which chamber the free piston 71 reciprocates. The end of the piston 71 strikes the plunger 61 to create the stamping force. However this plunger is not supplied with air from the air supply indicated at 72 until the trigger rod 73 engages the head member 74 shown in FIG. 8. When the head with the stamping or marking device engages the article to be marked it will flatten itself against the face without pressure until the trigger rod 73 engages the head 74 causing the trigger spring 75 to be compressed and initiate the operation of the hammer causing the piston to drive and strike the inner end of the plunger 61 which forces the head forward and causes the characters to be stamped or otherwise impressed on the article to be marked. As soon as the piston 71 strikes the plunger 61, the trigger rod 73 is forced forwardly by the spring 75. The hammer 46 is well known in the marking field having been in use and on the market since before 1930 and its detailed structure is not claimed or believed necessary to this disclosure. The rear portion of the cylinder housing 68 is threadably engaged to the valve housing 78 and is locked thereto by a lock nut such as indicated at 69.

The channel members 12 and 13 of the platform 11 are provided with the spaced upwardly extending side plates 80 and 81 which are adjustably bolted into place and carry a transverse upper platform 82 to carry the resetting mechanism for adjusting or otherwise changing the characters on the stamping and marking head 74. Thus the platform 82 is stationary relative to the platform 11 and positioned above the hammer while retracted. As more clearly shown in FIGS. 5, 6 and 7, the platform 82 has mounted thereon the spaced upwardly extending air cylinder brackets 83 and 84 which are placed one in front of the other, each supporting a pair of air cylinders 85 and 87, 86 and 88, the pistons 90 of which extend rearwardly through their respective brackets and are provided with the clevises 91 carrying the pins 92 which attach each clevis to its respective indexing arms 93, 94, 95 and 96. Thus the air cylinders 85 to 88 are connected through their pistons to their index arms 93 and 96 respectively. The arms 93 to 96 are connected by the bolts 100 to their character wheel indexing bars 101, 102, 103 and 104 respectively. Each character wheel index bar 101 to 104 has its stop adjusting screw 105 threadably engaging its bracket 106 and locked by the lock nut 107. This adjusting screw functions to engage the rear face of the slide bearing members 108 and 109 that slidably carry the character wheel indexing bars. The forward bearing housing 108 has four slots to receive each of the four bars, whereas the rear bearing 109 has only two slots extending all the way therethrough to receive the character wheel indexing bars 101 and 103, and the rear ends of the character wheel indexing bars 102 and 104 merely extend in the bearing 109 but not therethrough.

The top of each index bar arm 93 to 96 inclusive is provided with an outwardly extending finger 110 for engaging its respective limit switch 111, 112; 113 and 114.

The intermediate portion of the plate 82 is slotted as indicated at 115 in FIG. 5 to receive the character wheel indexing bar arms 94 and 96. However the rear pawls extend beyond the plate 82. Thus when any one of the cylinders 85 to 87 are energized they move their respective index bar dog forward, thereby sliding their respective character wheel indexing bar forwardly in the bearings 108 and 109 and the stroke of these cylinders 85 to 88 is such that they complete their full stroke at the same time that they actuate their respective limit switch.

The forward bearing member 108 is provided with the spacer members 116 and 117 on opposite sides thereof for gauging the parallel plates or head guide members 118 to lock the marking head against lateral movement. The inner leading edges of these plates or members are chambered. These guide members depend from the bearing member and between which the marking head is retracted and locked against lateral movement when the carriage is retracted as shown in full lines in FIGS. 1, 2 and 3.

To one side of the air cylinders is mounted the air inlet manifold 120 which connects with independent lines 121 to the respective solenoid valve members 122 which control the flow of air through the lines 123 to the respective cylinders 85 to 87 inclusive. These solenoid valves also provide for an electric indicating device indicated at 124 that provides a return circuit to indicate the completion of an impulse that is connected to the terminal box 125 enclosed in the common terminal enclosure 126, all of which is mounted on the plate 82. Thus every time an impulse is supplied to open the solenoid valve and actuate one of the cylinders this impulse is also relayed to the remote control station to indicate the operation of this cylinder has been made so the operation of the cylinders and the indicating device at the remote control station remains synchronized as to what characters appear on the marking device. These circuits are interlocked with the operation of the master cylinder in operating the carriage 41 so that the cylinders 85 to 88 cannot function unless the head is completely retracted between the head guides 118 so that their character wheels can be changed to have the indicia in accordance with the material to be marked

and in sequence with the travel of the material past the marking station. The limit switches **111** to **114** are likewise connected to the terminal block **125** for the purpose of carrying their information of the completion of the operation of the air cylinder back to the remote control station **38**.

As shown in FIG. 6 each of the character wheel indexing bars **101** to **104** has a pawl member **130** pivoted thereto as indicated at **131** to operate up and down against the spring **132** the pawl being mounted within the slot **133** in the character wheel indexing bar. The pawl **130** having a socket **134** to receive the end of the spring **132**, its other end being secured to the face of its respective character wheel indexing bar by the bolts **135**. The top of the pawl **130** is provided with a stop member **136** which engages the top of the indexing bar and prevents further downward movement of the pawl. The pawl will, of course, rotate in a counterclockwise direction when its finger **137** is passed over a projection when the character wheel indexing bar is returned to its normal position as indicated in FIG. 6.

As shown in FIGS. 8, 9 and 10 the head **74** has a face on one side that is slidably supported on the pillow block **138** mounted on top of the carriage **41** so that the head can pivot about the vertical central axis of the pin **140** which connects the head **74** to the plunger **61** but will not permit the head to twist about the axis of the plunger **61**. The head **74** comprises the bifurcated member **141** having aligned openings to receive the character wheel shaft **142** which is locked in place by the locking screw **143**. This stationary shaft carries a series of character wheels indicated generally at **144** and **145**. The character wheels **144** are capable of being changed remotely and they are four in number shown in this particular setup illustrating the principles of this invention. There are seven character wheels **145** which are manually changed. All of the character wheels are, of course, rotatably mounted on the shaft **142** and a spacer such as illustrated at **146** spaces the end rotary members from the bifurcated arms of the head **141**, whereas the intermediate **147** spaces the automatically and remote controlled actuated character wheels **144** from the manually set character wheels **145**. A friction pin **148** loaded by a spring **149** engages the detents **150** on the inner surface of the wheels **144**, **145** to preposition the manual wheels at the location where the character lands **151** are properly located for making their impression in the horizontal plane indicated at **152**. Thus each land section **151** has a character thereon and each land section has its corresponding friction recess **150** that requires considerable pressure exerted by the spanner wrench **153** to dislodge and change the same. The spanner wrench has a finger **154** that must be inserted in the socket **155** and an abutment **156** to engage a span distance on the wheel **145** in order to overcome the friction pressure of the pin and spring **148** and **149**. However, before this mechanically operated character wheel **145** can be changed, the locking pin **157** must be drawn outwardly to the right in FIG. 8 to withdraw the key **153** from its respective engagements with the slots **155**. Thus the key **158** extends for the full depth of the seven manual change character wheels **145** and the balance of the pin **157** is cut away as indicated at **159** so as to skip the automatically adjustable character wheels **144** which are not provided with the slots **155** as indicated in FIG. 9. The locking pin **157** also is provided with its friction stop **160** spring loaded by the spring **161** and is held in place by the screw member **162**.

A second shaft **163** is held by the spaced projections of the bifurcated member **141** and is locked in place by the locking screw **164**. This shaft **163** is the pawl shaft and carries a series of pawl members **165**, one for each character wheel **144**. However, the pawl is disposed opposite to the ratchet wheel **166** which is preferably made integral with its respective character wheel **144**. The ratchet is provided with a series of locking seats **168** which fit the underface of the pawls **165**. The pawls are held in locked position by the spring member **170** which passes around the pawl shaft **163** and loops over the top of the pawl and engages the back of the bifurcated section **141** as shown in FIGS. 8 and 10.

Additional seats **171** are provided on **166** for each character land **172** of the character wheel **144** for the reception of the finger **137** on the bottom of the pawl **130** carried by the character wheel indexing bars. Thus as shown in FIG. 1 when any one of the cylinders **85** to **88** are energized, the respective pawl **130** has its finger **137** engage in a corresponding socket **171** to move the character wheel one position dragging the pawl **165** over the peak **173** to the next position thereby locking the character wheel **144** in the next position. Thus by adding a series of impulses, one may index the character wheel **144**, 360° and each progressive position will be indicated at the control station **38**.

As shown in FIG. 2 the remote control station **38** has four pushbuttons **174**, **175**, **176** and **177**, each of which controls the operation of the solenoid valves **124** to actuate the respective character wheel indexing bars **101**, **102**, **103** and **104** and the character to which the indexing machine has set the indexing wheel will show up in the latter windows indicated at **178**. A dial **180** is provided on the remote control station to indicate the relative position of the indicator **37** and this may be manually controlled by the pushbuttons **181** and **182** for moving the platform **11** up and down to the proper location.

A hammer fire pushbutton is indicated at **183**. **184** represents an automatic machine having a slot therein for passing perforated cards as indicated at **185** which receive the impulse and actuates the machine accordingly and deposits the card in the slot **186** after it has completed its performance. Thus the remote control station **38** has either manual or automatic control of the character wheel indexing machine and when the mill is automatically set up to produce material in certain stages the indexing machine is set up by the same manner and being fully automatic eliminates human error so that each article of manufacture is properly and accurately marked, thereby avoiding material loss owing to human error and other factors of the present system.

Referring to FIGS. 11 and 12, the head **74'** which is bifurcated as illustrated at **141'** is provided with the larger cap screws **143'** to hold the character wheel shaft **142** in position and this head is provided with a series of seven character wheels, each of which is capable of being changed remotely as previously described. The head, of course, could be made larger to accommodate additional character wheels if desired. Each character wheel **144** is provided with an indentation **150** for each of its character positions so as to provide a detent lock by the pin **148**. Each character wheel likewise has its own integrally formed ratchet wheel **166** and the pawls **165** carried by the pawl shaft **163** for each ratchet wheel are held in place by their separate springs **170**. Each pawl is arranged to engage the ratchet wheel seat **168** and the ratchet is also provided with the seat **171** for the rotation of the character wheel by the finger **137** on the bottom of each pawl **130** mounted on the end of the indexing bars previously described.

The structure thus far of the head **74'** is no different than that previously described other than the fact that all of the character wheels are capable of being remotely actuated.

The pillow block **138'** is somewhat different shape than that shown in FIG. 8 in that it extends forwardly to a point as illustrated at **200'** and is likewise bifurcated as illustrated by the arms **201'** and **202'**. Each side of the bifurcated block **138'** is provided with the cap screws **203** that extend inwardly through the bifurcated member **200'** and engage in an upwardly extending block member **204**, the inner surface **205** of which is arcuate as illustrated in FIG. 12. Thus the block **204** which is engaged and

locked in place by the cap screws **203** retains the bifurcated head **74'** the under surface of which is movable on top of the block **138'** which permits the head **74'** to rock or slide back and forth about the center point **206** of the spherical pressure head **207** on the end of the plunger holder **62'** extending from the hammer **46**. Thus the back of the bifurcated head **74'** has a spherical socket to receive the spherical end of the plunger holder **62'** but owing to the fact that the plunger **61** has limited axial movement when it is withdrawn the head **74'** likewise has limited movement determined by the block **204**. The plunger holder **62'** cannot totally withdraw its spherical head from the spherical socket and thus the movement of the head **74'** although limited is nevertheless sufficient to permit the numbers or characters on the wheels **144** to find the flat face of the article of which they are marking before moving back on the plunger holder **62'** which action will trigger the hammer causing the plunger holder **62'** to exert the force on the head **74'** to produce a marking from the character wheels on the object to be marked.

Thus in each of the heads **74'** shown, there is capability of these heads to align themselves so that the numbers are flat against the object to be stamped before the quick hard blow of the hammer is effective in impressing the characters on the article. This provides accurate and legible stamping when the face of the metal being stamped is askew to the ordinary travel of the plunger holder **62'**. Although the head **74'** may be askew to the axis of the plunger holder **62'**, the blow is sufficient to make all of the character wheels leave their indentations. It is substantially uniform depth without materially loading the end character wheels.

In the structure shown in FIGS. 11 and 12, the block **204** thus returns the character head even though the plunger holder **62'** is slightly withdrawn from its spherical engagement. As shown in FIG. 11, the character head **74'** may travel substantially the thickness of the block **204** before the latter engages the character wheels **144** which limit of movement is far greater than that ordinarily required in practice.

I claim:

1. A remotely operated marking machine consisting of a platform, a carriage reciprocally mounted on said platform, power means on said platform and connected to said carriage to reciprocally extend and retract the same, a marking head movably supported on and attached relative to said carriage, marking head guide means supported from said platform adjacent said carriage to receive and lock said movably supported marking head against lateral movement when said carriage is retracted, rotary character wheels on said marking head having characters around their periphery, selected characters of each wheel being positioned in alignment for marking, the aligned characters initially engage the material to be marked to move said marking head and flatten the characters against the surface of the material when said carriage is extended, pawl means supported from said platform adjacent said guide means for selective engagement with said rotary character wheels for indexing the same when said marking head is locked against lateral movement by said guide means, servomotor means connected to actuate said pawl means, a circuit energized from one remote station for actuating said servomotor means to align selected characters to be marked on the material, and a second circuit energized from another remote station for controlling the actuation of said power means to reciprocate said carriage to flatten the selected characters on the material.

2. The marking machine of claim 1 characterized by a power driven jack means to raise and lower said platform, and a third circuit energized from one of said remote stations to actuate said power driven jack means and position said platform for marking different sized articles.

3. The marking machine of claim 1 characterized in that said rotary character wheel has attached thereto a ratchet for receiving said indexing pawl means and having seats thereon, and a dog to engage one of said seats on said ratchet and hold said rotary character wheel in a selected position.

4. The marking machine of claim 1 characterized in that said power means to reciprocate said carriage and move said marking head into engagement with the material to be marked is a fluid actuated piston cylinder.

5. The marking machine of claim 4 characterized by a stop engaged by the retracting carriage to cut the fluid pressure to said fluid actuated cylinder and stop said carriage in its retracted position.

6. The marking machine of claim 1 characterized in that said head guide means supported from said platform consists of fixed spaced plates to receive therebetween said marking head in its retracted position to retain and lock the same against lateral movement for indexing the rotary character wheels.

7. The marking machine of claim 1 characterized in that said indexing pawl means to change said character wheels includes a pivoted spring biased member on a piston actuated slide, said servomotor means actuating said slide, a stop for said slide, and a limit switch actuated by said slide to retrieve said slide and actuate a panel indicator corresponding to the character set on the character wheel.

8. The marking machine of claim 7 characterized by an electrically actuated valve to control the operation of said servomotor means in actuating said piston to operate said slide.

9. The marking machine of claim 7 characterized by a stop on said pawl to engage the slide under spring pressure to hold it in operating position.

10. A marking machine consisting of a frame having a platform with a marking head guide, a carriage mounted for reciprocation in one plane on said frame, means to extend and retract said carriage, a marking head directly supported on said carriage for free movement laterally and in a plane parallel with the plane of reciprocation of said carriage, character marking wheels carried by said marking head for stamping articles when said carriage is extended, said carriage when retracted to place said marking head into said marking head guide and lock said marking head against lateral movement, indexing pawl means on said platform to engage and change the character marking wheels when said carriage is retracted and said marking head is locked against lateral movement in said marking head guide.

11. The marking machine of claim 10 characterized by a marking head retaining means for supporting said marking head for free lateral movement on said carriage and includes a vertical pin movably mounted in said marking head in retaining it for lateral movement on said carriage and in a direction transversely of the reciprocation of said carriage when presenting the indicia to the surface to be marked to permit the indicia on said character wheels to square themselves against the surface to be marked.

12. The marking machine of claim 11 characterized in that said means to extend and retract said carriage and move said marking head into engagement with the material to be marked is a fluid actuated cylinder.

13. A marking machine consisting of a platform, a carriage reciprocally mounted on said platform, a surface on said carriage, a bifurcated marking head with a shaft extending across the bifurcation, character wheels mounted on said shaft and having indicia on the perimeter thereof, marking head retaining means supported from said carriage to movably retain said marking head for lateral movement on said surface, power means on said platform connected to reciprocate said carriage and extend and retract said movably retained marking head on said surface to permit the indicia on said character wheels to square themselves against the surface to be marked

when said carriage is extended, said marking head retaining means includes a vertical abutment supported from said carriage and engaging between the bifurcated portion to retain said marking head for lateral movement on said surface to permit the indicia on said character wheels to square themselves against the surface to be marked.

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