Sept. 10, 1929. N. C. SMITH 1,727,416

MACHINE FOR MARKING HATS AND THE LIKE

Filed April 20, 1927 2 Sheets-Sheet 1

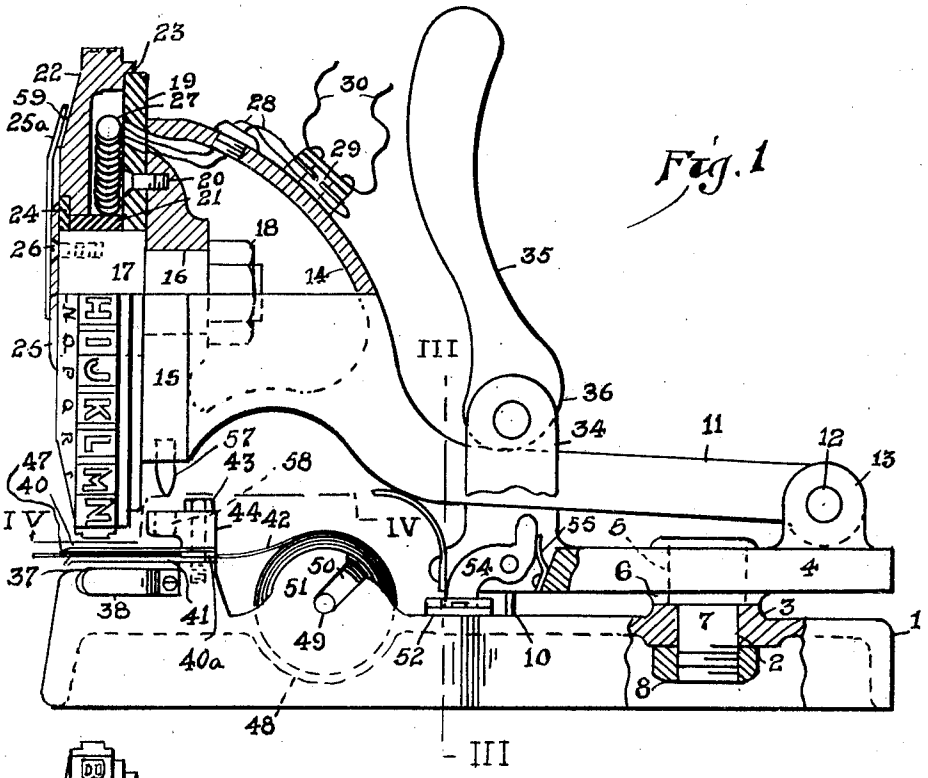


Fig. 1

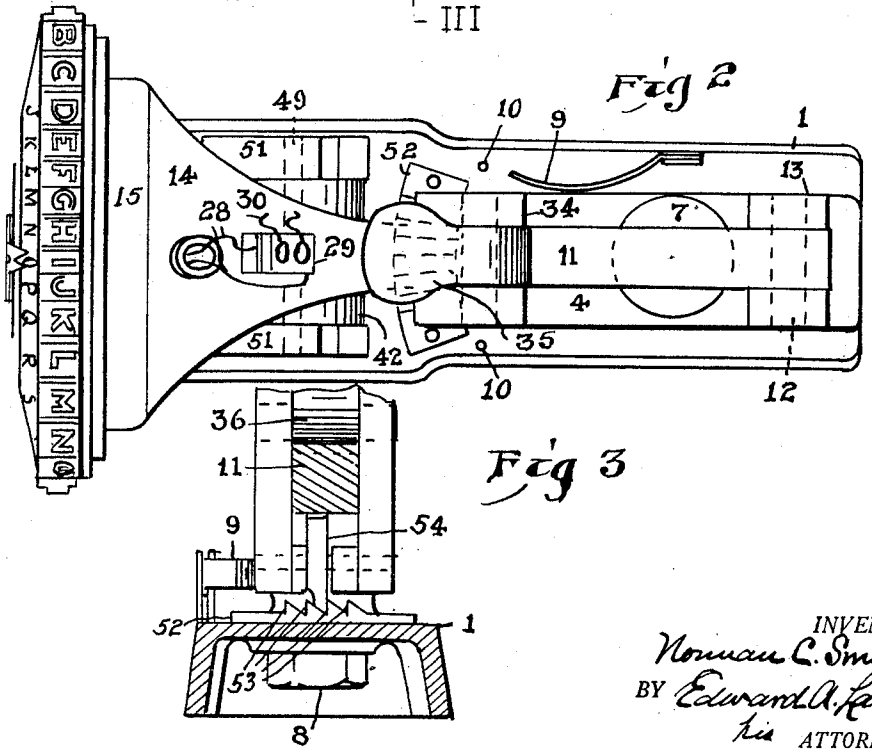


Fig 2

Fig 3

INVENTOR.
Norman C. Smith,
BY Edward A. Lawrence
his ATTORNEY.

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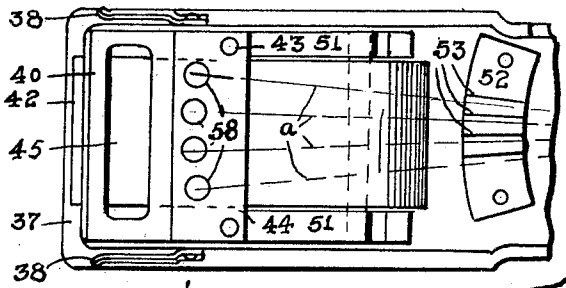


Fig 5

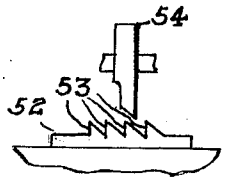


Fig 6

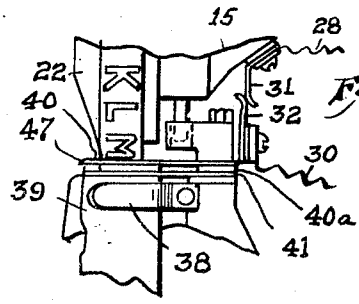


Fig. 7

Fig. 4

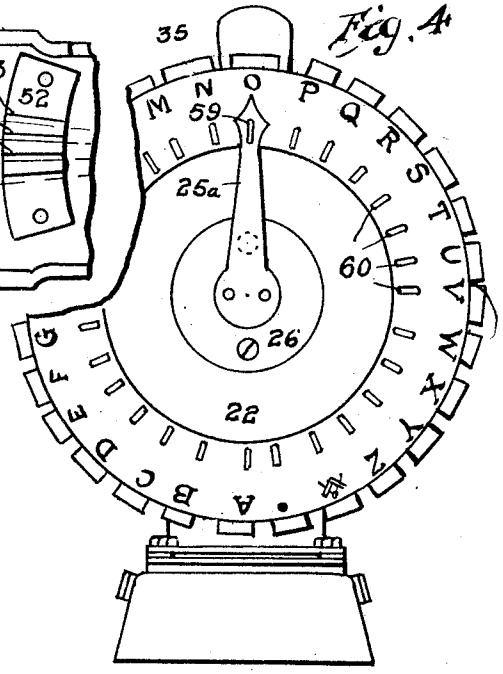
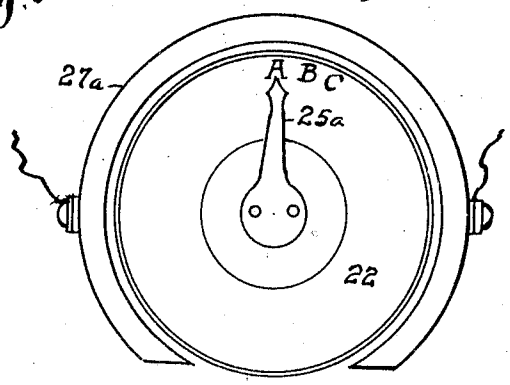


Fig. 8



INVENTOR.
Norman C. Smith,
BY Edward A. Laurence,
his ATTORNEY.

Patented Sept. 10, 1929. 1,727,416

UNITED STATES PATENT OFFICE.

NORMAN C. SMITH, OF PITTSBURGH, PENNSYLVANIA.

MACHINE FOR MARKING HATS AND THE LIKE.

Application filed April 20, 1927. Serial No. 185,105.

More particularly my invention relates to a machine for stamping initials and other characters on the sweat bands of hats and for like uses.

The purpose I have in view is the provision of a convenient machine which will apply the intials or other characters on the sweat bands of hats and the like and will automatically aline and space a plurality of the same.

In the accompanying drawings, wherein I have illustrated the best embodiment of the principles of my invention now known to me, Fig. 1 is a side elevation of the machine, parts being broken away in section for the sake of clearness; Fig. 2 is a plan view of the machine; Fig. 3 is a sectional view taken along the line III—III in Fig. 1; Fig. 4 is a front elevation of the machine; Fig. 5 is a broken plan view showing a portion of the base; Fig. 6 is a detail of the pawl and rack, the former being shown retracted; Fig. 7 is a detail showing a modified form of heating control, and Fig. 8 is a front elevation showing a modified arrangement of the heating element relative to the type wheel.

Referring first to Figs. 1 to 6 inclusive, 1 is the base of the machine, preferably an oblong casting hollowed out from below and provided adjacent to its rear end with a vertical bolt hole 2 which is extended upwardly by the bearing collar 3.

4 is a carriage mounted on the base 1 so as to be swung on a vertical axis relative to the base. Thus, intermediate of its length the carriage 4 is provided with a vertical bolt hole 5 of greater diameter than the bolt hole 2 and extended downwardly by the bearing collar 6 which rides on the bearing collar 3 so as to hold the carriage in spaced relation to the base.

7 is a pivot bolt extending through the holes 2 and 5 and provided with a head which engages the top surface of the carriage. Said bolt has a larger upper diameter which is journaled in the bolt hole 5 and a lower smaller diameter which extends through the hole 2 in the base 1. A nut 8 is screwed up on the lower end of the bolt to hold the base and carriage in pivotal relation.

9 is a spring interposed between the base and carriage and tending to swing the latter counterclockwise on the base.

10 represents studs on the base 1 on either side of the carriage 4 to limit the arc of movement of said carriage.

11 is an arm pivotally mounted on the carriage adjacent to the rear end of the latter so as to swing on a horizontal axis. Thus the pivot pin 12 extends through the spaced apart stands 13 extending upwardly from the carriage and through the rear end of the arm 11 interposed between said stands.

The arm 11 extends forwardly and has mounted on its forward end, as by means of the connecting webs 14 the circular head 15.

16 is an axial hole in the head 15, and 17 is a bolt which extends through said hole and is held in position on the head by the nut 18. The head of the bolt is cylindrical.

19 is a disk of fiber or other heat insulating material and of larger diameter than the head 15 and attached to the front of said head as by the screws 20. The disk 19 is provided with a central aperture to provide clearance for the head of the bolt 17.

21 is a bushing, also of insulating material, which is slipped over the bolt 17, and 22 is a circular type wheel rotatably mounted on the bushing 21 and having its rear face dished out for clearance between it and the disk 19. The rear perimetral edge of the type wheel is provided with an annular shoulder 23 which engages the edge of the disk 19 and maintains the type wheel in proper relation to its mounting. The type wheel is held on the bushing 21 by means of a disk 24 of heat insulating material and an outer metal disk 25 which are secured to the end of the head of the bolt 17 by the screws 26.

It is thus evident that the type wheel which is heated, as will hereinafter be described, is insulated to minimize the heat-transference to adjacent metal parts.

The perimetral edge of the type wheel 22 is provided with an annular series of die-characters which comprise the letters of the alphabet and also if desired the emblems of fraternal societies or other characters.

The front face of the type wheel is also provided with an annular series composed

of the same characters which may be painted or otherwise displayed on the face of the type wheel. The disk 25 which is fixed to the head of the bolt 17 carries a fixed radially disposed pointer 25ª in registration with which any character of the series on the face of the type wheel and may be brought into registration by the proper rotation of the type wheel. The relation between the two series of characters is such that when a given character on the face of the type wheel is in registry with the pointer, the corresponding character on the perimeter of the wheel is at the bottom of the wheel in position for stamping.

27 is an annular electrical heating element attached to the front face of the disk 19 concentrically of said disk, clearance for the heating element being obtained by the dishing of the rear face of the type wheel. The heating element is thus stationary while the type wheel is rotatable. Current is supplied to the heating element by the lead wires 28 which may be connected to the thermostatic cut-out switch 29 to which in turn the circuit wires 30 are connected.

It is evident that the perimetral portion of the type wheel, including the die-type, is heated electrically and that over-heating is prevented by the provision of the thermostatic cutout.

In Fig. 7 I show one of the lead wires 28 connected to a spring contact member 31 depending from the head 15 and arranged, when said head 15 is depressed for stamping, to make contact with another spring contact member 32 extending upwardly from the base 1. The contact member 32 may be connected to one of the circuit wires 30. By this means the heating of the die type is accomplished only while the type wheel is being and is depressed.

In Fig. 8 I show the electric heating element 27ª in the form of an interrupted annulus which surrounds the perimeter of the type wheel instead of being positioned in the rear of the same as in Fig. 1. The interruption in the heating element in such case is at the bottom to give clearance for the die type in stamping.

Means are provided for depressing the type wheel into stamping position. Thus 34 represents a pair of spaced apart stands extending upwardly from the forward portion of the carriage 4 and between which the arm 11 extends forwardly.

35 is a handle lever pivotally mounted between said stands above the arm 11, and which is provided with a cam-butt 36 which, when the lever 35 is swung clockwise from its position in Fig. 1, depresses the arm 11 and thus forces the type wheel downwardly to accomplish the stamping operation.

The front of the base 1 is provided with a flat platform 37 which forms the anvil, and said platform is provided at either side with downwardly beveled edges along which forwardly extends the flat spring clips 38 so as to engage the leather sweat band shown at 39 in Fig. 7 to clamp it flat down on the anvil.

40 and 41 are the upper and lower spring guide plates between which the gold-leaf ribbon 42 is led forwardly over the anvil. The guide plates are spaced apart vertically to permit the passage of the ribbon, and are shown held in position by the screws 43 which attach the transversely disposed socket block 44 in position above the inner ends of the guide plates. The guide plates are cut away over the anvil as shown at 45 in Fig. 5 so as to expose the ribbon 42 to the die type above and to the leather sweat band below. The guide plates are separated by shims 40ª adjacent to their side edges.

The upper guide plate 40 has its front edge extending outwardly slightly beyond the front edge of the lower guide plate 41 and said front edge is beveled as at 47 to form a knife edge for tearing off the exposed length of ribbon when the sweat band is pulled forwardly off the anvil.

The ribbon 42 is stored in a roll in the sunken recess 48 in the top surface of the base 1 and the roll is mounted on an axle pin 49 whose ends are journaled in the forwardly and downwardly inclined slots 50 in the stands 51 at either end of the recess 48. Thus as a pull is exerted on the outer end of the ribbon, as when a sweat band is removed from the anvil, the ribbon will be fed forwardly from the roll to provide a fresh exposure over the anvil. The ribbon is of gold-leaf or similar material with its under surface properly sized. The leather sweat band of the hat is turned outwardly from the hat and inserted on the anvil 37 under the guide plates 40 and 41 and under the spring clips 38 with the exterior surface of the band upwardly. The lever 35 is now swung counterclockwise driving the type wheel downwardly and causing the die type which is positioned at the bottom of the type wheel to stamp down on the bottom of the ribbon. The heated die type softens the sizing of the lower surface of the ribbon and thus stamps on the sweat band in gold-leaf or in the other material of the ribbon the character represented by the die type.

A lateral movement of the carriage relative to the base is employed to properly space apart the characters which go to comprise the group of initials or emblems or initials and emblems which are to be stamped on the leather sweat band of the hat.

In the embodiment illustrated in the drawings, provision is made for the stamping of four uniformly spaced characters, but the machine may be designed for stamping any desired number.

For this purpose I provide a rack 52 on the

base 1 transversely disposed relative to said base, and said rack is provided with a predetermined number of teeth, illustrated as four, the shoulders 53 of said teeth being opposed to the spring-actuated movement of the carriage with the bolt 7 as an axis.

54 is a locking pawl pivoted intermediate of its ends in a vertical slot in the front end of the carriage 4. The pawl is resiliently depressed into operative engagement with the rack as by means of the spring 55, while the upper end of the pawl is disposed so as to be engaged by the arm 11 when the latter is depressed, thereby retracting the pawl from engagement with the rack.

The arm 11 and the head 15 are prevented from lateral movement as the type wheel moves downwardly into stamping operation by means of the pin 57 depending from the head 15, which pin enters as the head is depressed one of the sockets 58 in the block 44. The pin 57 has a tapered lower end so that it will enter a socket, although not axially alined therewith during its initial engagement.

Each of the sockets 58 is positioned on a radial line described from the axis of the bolt 7 just in advance in a counterclockwise direction of a corresponding shoulder 53 of the rack 52, as indicated by the dotted lines *a* in Fig. 5, so that as the head is depressed the tapered lower end of the pin 57 enters one of the sockets 58 and the pawl 54 is retracted, and when the head is again raised, the lower end of the pawl is just past a shoulder 53 of the rack and as the pawl descends, owing to the clockwise pull of the spring 9, the pawl slides down over the incline of the next tooth until it comes to rest against the next shoulder of the rack, thus permitting the carriage to swing clockwise a space equal to the space between the centers of the sockets and thereby properly position the head and the type wheel for stamping the next initial or emblem in proper spaced relation to that just previously stamped.

The pointer 25[a] is provided with a rib 59 on its rear face which is adapted to engage one of the annular series of notches 60 on the face of the type-wheel, one of said notches being positioned directly in line with each of the series of characters on the face of the type wheel. Thus the wheel is locked in its adjusted position against accidental rotation.

It is evident from the foregoing description that the marking of hat bands with one or more initials and/or emblems may be expeditiously accomplished, the individual characters being positioned in proper spaced relation. The gold-leaf or other ribbon comes already sized and the heating of the die-type causes the sizing to be melted as the impress is made.

Although primarily intended for marking hats, it is evident that any material upon which characters are to be stamped may be marked with my machine.

What I desire to claim is:—

1. In a marking device of the character described, the combination of a base, an anvil carried by said base and upon which the work is supported, a carriage pivotally mounted on said base to swing on a vertical axis relative thereto, an arm pivotally mounted on said carriage to swing on a horizontal axis relative thereto, and a die-wheel rotatably mounted on the free end of said arm and having characters arranged on its perimetral edge, said wheel being caused to approach and move away from said anvil by the movements of said arm.

2. In a marking device of the character described, the combination of a base, an anvil carried by said base and upon which the work is supported, a carriage pivotally mounted on said base to swing on a vertical axis relative thereto, an arm pivotally mounted on said carriage to swing on a horizontal axis relative thereto, a die-wheel rotatably mounted on the free end of said arm and having characters arranged on its perimetral edge, said wheel being caused to approach and move away from said anvil by the movements of said arm, and spring-means for moving the die-wheel away from the anvil.

3. In a marking device of the character described, the combination of a base, an anvil carried by said base and upon which the work is supported, a carriage pivotally mounted on said base to swing on a vertical axis relative thereto, an arm pivotally mounted on said carriage to swing on a horizontal axis relative thereto, a die-wheel rotatably mounted on the free end of said arm and having characters arranged on its perimetral edge, said wheel being caused to approach and move away from said anvil by the movements of said arm, and means for moving said carriage to a predetermined degree on its axis after an impression whereby to space the characters impressed on the work.

4. In a marking device of the character described, the combination of a base, an anvil carried by said base and upon which the work is supported, a carriage pivotally mounted on said base to swing on a vertical axis relative thereto, an arm pivotally mounted on said carriage to swing on a horizontal axis relative thereto, a die-wheel rotatably mounted on the free end of said arm and having characters arranged on its perimetral edge, said wheel being caused to approach and move away from said anvil by the movement of said arm, and means whereby as the arm rises after an impression the carriage is moved to a predetermined degree on its axis to space the next character to be impressed on the work.

5. In a marking device of the character described, the combination of a base, an anvil

carried by said base and upon which the work is supported, a carriage pivotally mounted on said base to swing on a vertical axis relative thereto, an arm pivotally mounted on said carriage to swing on a horizontal axis relative thereto, a die-wheel rotatably mounted on the free end of said arm and having characters arranged on its perimetral edge, said wheel being caused to approach and move away from said anvil by the movement of said arm, and means for properly guiding the arm as the die-wheel approaches the anvil.

6. In a marking device of the character described, the combination of a base, an anvil carried by said base and upon which the work is supported, a carriage pivotally mounted on said base to swing on a vertical axis relative thereto, an arm pivotally mounted on said carriage to swing on a horizontal axis relative thereto, a die-wheel rotatably mounted on the free end of said arm and having characters arranged on its perimetral edge, said wheel being caused to approach and move away from said anvil by the movement of said arm, means for moving the carriage to a predetermined degree on its axis after an impression on the work, and means for guiding the arm as the die-wheel approaches the work to insure the predetermined spacing.

7. In a marking device of the character described, the combination of a base, an anvil carried by said base and upon which the work is supported, a carriage pivotally mounted on said base to swing on a vertical axis relative thereto, an arm pivotally mounted on said carriage to swing on a horizontal axis relative thereto, a die-wheel rotatably mounted on the free end of said arm and having characters arranged on its perimetral edge, said wheel being caused to approach and move away from said anvil by the movement of said arm, means for moving the carriage to a predetermined degree on its axis after an impression on the work, and a pin and socket mechanism for insuring the proper spacing as the die-wheel approaches the anvil.

8. In a marking device of the character described, the combination of a base, an anvil carried by said base and upon which the work is supported, a carriage pivotally mounted on said base to swing on a vertical axis relative thereto, an arm pivotally mounted on said carriage to swing on a horizontal axis relative thereto, a die-wheel rotatably mounted on the free end of said arm and having characters arranged on its perimetral edge, said wheel being caused to approach and move away from said anvil by the movement of said arm, means caused to operate as the die-wheel moves away from the anvil for moving the carriage to a predetermined degree on its axis, and means caused to operate as the die-wheel approaches the anvil to insure the predetermined spacing between the characters impressed on the work.

9. In a marking device of the character described, the combination of a base, an anvil carried by said base and upon which the work is supported, a carriage pivotally mounted on said base to swing on a vertical axis relative thereto, an arm pivotally mounted on said carriage to swing on a horizontal axis relative thereto, a die-wheel rotatably mounted on the free end of said arm and having characters arranged on its perimetral edge, said wheel being caused to approach and move away from said anvil by the movement of said arm, means caused to operate as the die-wheel moves away from the anvil for moving the carriage a predetermined degree on its axis, and means caused to operate as the die-wheel approaches the anvil for properly positioning the die-wheel relative to the work and for holding the carriage against movement.

10. In a marking machine of the character described, the combination of an anvil upon which the work to be marked is supported, a die-wheel arranged for movement toward and away from the anvil and for movement transversely to the path of said first mentioned movement, a pin and socket device for guiding the die-wheel to determine its transverse position as it approaches the anvil, and means including a rack and pawl device for shifting the die-wheel relative to the anvil when the die-wheel is away from the anvil.

11. In a marking device of the character described, the combination of a base, an anvil carried by said base and upon which the work is supported, a carriage mounted on said base and rotatable on a vertical axis relative thereto, an arm having its one end pivotally mounted on said carriage to swing on a horizontal axis relative thereto, a die-wheel mounted on the free end of said arm and arranged to be moved toward and away from said anvil by the movement of said arm, and means mounted on said carriage for moving the arm relative to said carriage.

12. In a marking device of the character described, the combination of a base, an anvil carried by said base, and upon which the work is supported, a carriage mounted on said base and rotatable on a vertical axis relative thereto, an arm having its one end pivotally mounted on said carriage to swing on a horizontal axis relative thereto, a die-wheel mounted on the free end of said arm and arranged to be moved toward and away from said anvil by the movement of said arm, and a lever mounted on said carriage and arranged to cause the die-wheel to move toward said anvil.

13. In a marking device of the character described, the combination of a base, an anvil carried by said base and upon which the work is supported, a carriage mounted on said base

and rotatable on a vertical axis relative thereto, an arm having its one end pivotally mounted on said carriage to swing on a horizontal axis relative thereto, a die-wheel mounted on the free end of said arm and arranged to be moved toward and away from said anvil by the movement of said arm, a lever mounted on said carriage and arranged to cause the die-wheel to move toward said anvil, and resilient means for moving the die-wheel away from the anvil.

14. In a marking device of the character described, the combination of a base, an anvil carried by said base and upon which the work is supported, a carriage mounted on said base and rotatable on a vertical axis relative thereto, an arm having its one end pivotally mounted on said carriage to swing on a horizontal axis relative thereto, a die-wheel mounted on the free end of said arm and arranged to be moved toward and away from said anvil by the movement of said arm, and a cam-lever mounted on said carriage for moving the die-wheel toward the anvil.

15. In a marking device of the character described, the combination of a base, an anvil carried by said base and upon which the work is supported, a carriage mounted on said base and rotatable on a vertical axis relative thereto, an arm having its one end pivotally mounted on said carriage to swing on a horizontal axis relative thereto, a die-wheel mounted on the free end of said arm and arranged to be moved toward and away from said anvil by the movement of said arm, a cam-lever mounted on said carriage for moving the die-wheel toward the anvil, and spring means for moving the die-wheel away from the anvil.

16. In a marking machine of the character described, the combination of an anvil upon which the work is supported, means for directing a marking ribbon across the anvil and over the surface of the work, a wheel having a series of die-characters arranged on its perimetral surface, means for moving the wheel toward and away from the anvil, means for rotating the wheel to bring the desired die-character into working relation to the anvil and means for shifting the die wheel relative to the anvil and transversely to the path of movement of the ribbon to space succeeding markings.

Signed at Pittsburgh, Pa., this 31st day of March, 1927.

NORMAN C. SMITH.