

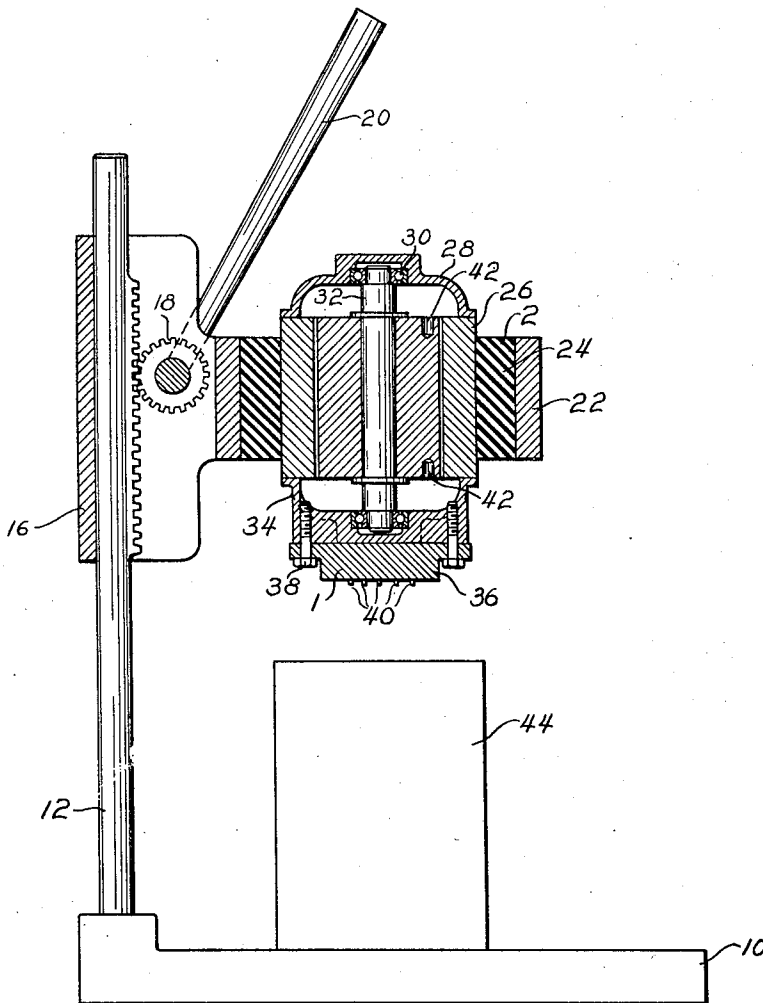
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MARKING MACHINE,

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MARKING MACHINE

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6 Claims. (Cl. 101-1)

This invention relates to marking machines and more particularly to machines for marking metal surfaces.

Metal parts have heretofore been marked by marking tools which are placed against the surface and struck with a hammer or the like to impress the characters on the face of the tool into the surface. This action is very apt to damage the piece to be marked, particularly in the case of relatively thin plates or like metal parts which may be warped or deformed by the impact of the tool.

The present invention has for one of its objects the provision of a marking machine in which metal parts may be marked quickly and without any danger of damage thereto.

Another object of the invention is to provide a marking machine in which parts are marked without impact and with a relatively slight pressure.

Still another object of the invention is to provide a marking machine in which the marking tool is given a high speed vibratory movement to impress the marking into the metal surface.

The above and other objects and advantages of the invention will be apparent from the following description when read in connection with the accompanying drawing, in which the single figure is a side view with parts in section of a marking machine embodying the invention.

The illustrated machine comprises a base 10, adapted to be supported on a floor or table, and having an upright post 12 extending from one side thereof. The post is formed on one surface with rack teeth 14 and slidably receives a carriage 16 for vertical sliding movement on the post. Movement of the carriage 16 is controlled by a pinion 18, rotatably mounted thereon and meshing with the rack teeth 14, rotation of the pinion 18 being controlled by a handle 20.

The carriage 16 includes an annular supporting portion 22, carrying an annular bushing 24 of yielding material such as rubber, in which the casing 26 of an electric motor is supported. End caps 28 are rigidly connected to the motor casing 26, and carry bearings 30 in which an armature shaft 32 is rotatably mounted. The armature shaft carries an armature 34 cooperating with suitable field windings in the casing to be rotated thereby.

A marking tool 36 is rigidly secured, as by means of bolts 38, to the lower end 28 of the motor casing, and is formed on its lower surface with a series of characters 40, which may be letters, numbers, or other markings which it is

desired to impress in the metal surfaces to be marked. According to the present invention, the armature 34 is unbalanced about the axis of the shaft 32, so as to set up a rotary translatory movement and to impart such movement to the tool so that it will cut into the metal surface more readily. As shown, the armature is bored out at one side, as indicated at 42, to unbalance it for this purpose.

In operation, the piece to be marked may be supported on a block 44 on the base 10, and the marking tool 40 may be moved against the piece by operation of the handle 20. The motor is operated at high speed at this time, preferably in the range of 3600 R. P. M., and causes a rapid translatory movement of the tool 36, so that the marking characters 40 will cut into the metal surface. The rubber mounting 24 yields during this operation to permit translatory movement of the entire motor and tool assembly, the movement at the tool face being preferably of the magnitude of about $\frac{5}{1000}$ of an inch. I have found that with this construction the marking tool will cut rapidly into the surface of the metal piece to be marked without requiring that the tool be pressed against the surface with an extremely high pressure or that any impact whatever be employed. Thus, pieces formed of relatively thin metal may be satisfactorily marked without any danger of bending or warping any of the pieces.

The method of marking as carried out by the machine of the present application is more particularly described and claimed in my co-pending application, Serial No. 412,640, filed September 27, 1941.

While one embodiment of the invention has been shown and described in detail, it will be understood that this is illustrative only, and is not to be taken as a definition of the scope of the invention, reference being had for this purpose to the appended claims.

What is claimed is:

1. A marking machine for metal surfaces comprising a marking tool having on its face projecting marking portions of relatively small area adapted to be pressed against a surface to be marked, and means for imparting to the tool while it is pressed against the surface a high speed vibratory movement of relatively small magnitude in the plane of the surface.

2. A marking machine for metal surfaces comprising a marking tool having on its face projecting marking portions of relatively small area adapted to be pressed against a surface to be

marked and means for imparting to the tool while it is pressed against the surface a high speed rotary translatory movement of relatively small magnitude in the plane of the surface.

3. A marking machine for metal surfaces comprising a marking tool having on its face projecting marking portions of relatively small area adapted to be pressed against a surface to be marked, a member rotatably mounted on an axis rigid with and perpendicular to the face of said tool, and means for causing said member to rotate at relatively high speed, said member being unbalanced about its axis to give a rotary translatory movement to the tool.

4. A marking machine for metal surfaces comprising a marking tool having on its face projecting marking portions of relatively small area adapted to be pressed against a surface to be marked, a member rotatably mounted on an axis rigid with and perpendicular to the face of the tool, yielding supporting means for the member and tool, and means to cause the member to rotate about its axis, said member being eccentrically balanced about its axis so that the member and tool will have a rotary translatory movement in the yielding supporting means.

5. A marking machine comprising a motor having a field coil, an armature, a shaft extending axially through the armature, and members in

which the ends of the shaft are journaled, the armature having means decreasing the weight thereof on one side of the shaft with respect to the weight thereof on the other side of the shaft, whereby rotation of the armature and shaft causes the heavier side of the armature to exert on said members a force which is exerted radially outward from the axis of the shaft and which constantly changes radial direction with the rotation of the armature, and a marking tool having on its face projecting marking portions of relatively small area carried by one of said members.

6. A marking machine comprising a support, a motor resiliently mounted on said support, said motor comprising field coils, a rotatable armature having a shaft, and members in which the ends of the shaft are journaled, and means for causing said armature, when rotated, to exert on said members a force which is exerted radially outward from the axis of the shaft, and which constantly changes radial direction with the rotation of the armature, whereby the members are given a rotary translatory movement with respect to the support, and a marking tool having on its face projecting marking portions of relatively small area carried by one of said members.

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