

[54] **HAND GRAPHIC SYMBOL MARKING
DEVICE**

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[51] Int. Cl. **B41k 1/02**

[58] Field of Search 101/368, 371, 316,
101/292, 327, 287; 33/184.5, 184.6, 189

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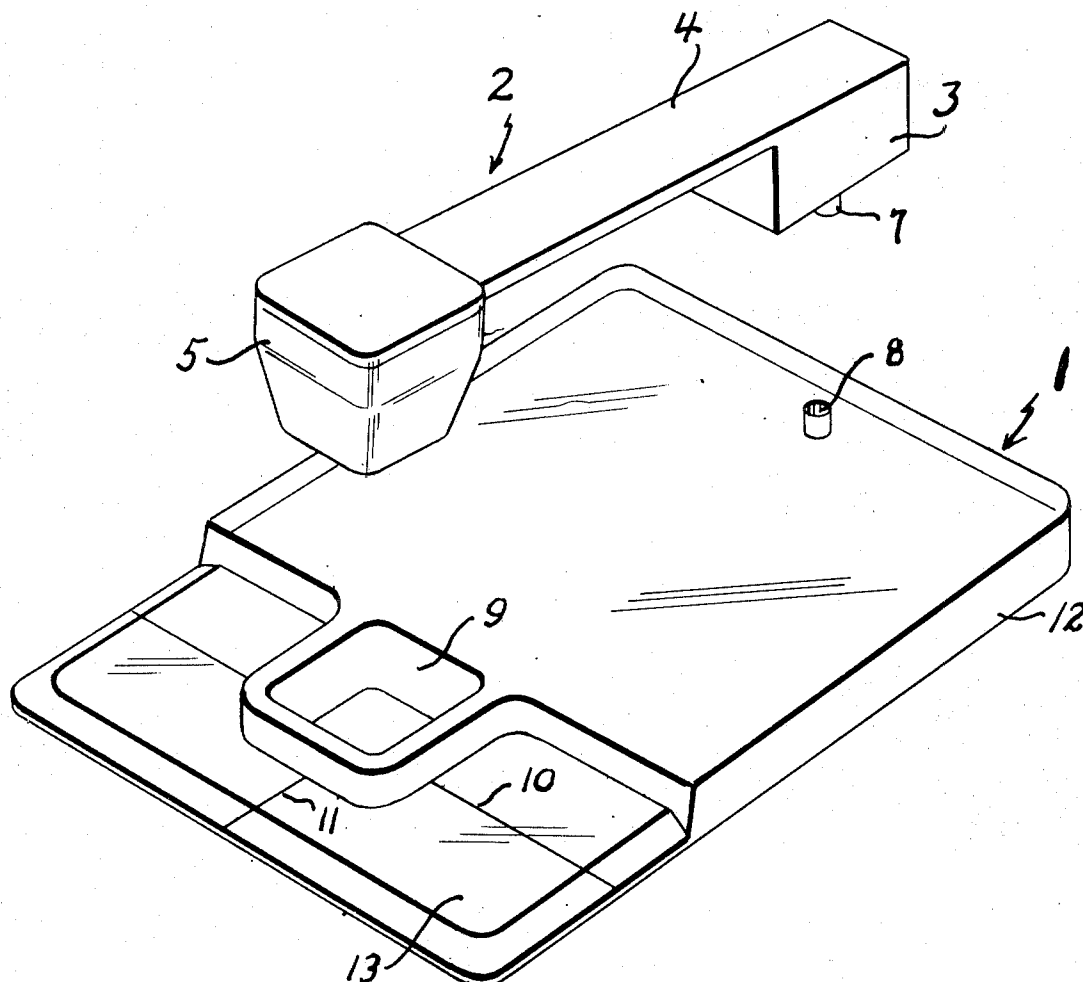
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[57] **ABSTRACT**

A device for stamping a graphic symbol on a surface which consists of a transparent base plate. A flat cantilever leaf spring is secured at one of its ends to the base plate and carries a stamping die at its other end. The spring has but one degree of flexibility, in a direction at right angles to the base of the base plate and overlies the base plate. The base plate is provided with an opening through which the stamping die can pass to produce its stamping action and is also provided on its bottom surface with perpendicular guide lines which are directed to intersect at the center of such opening. The base plate is thinner above said guide line than at other of its portions so as to minimize optical distortion of the guide lines as observed through the transparent base.

3 Claims, 5 Drawing Figures



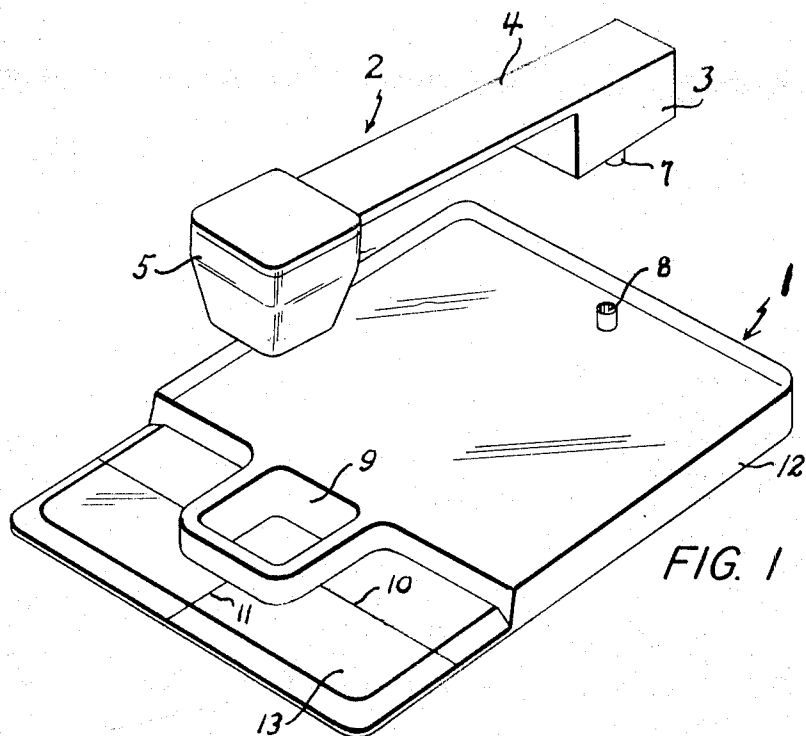


FIG. 1

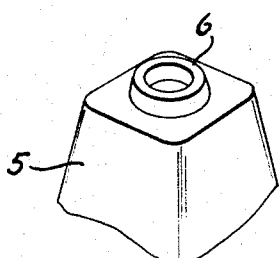


FIG. 2

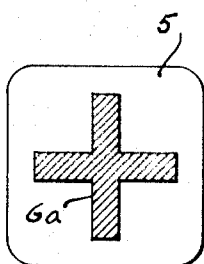


FIG. 3

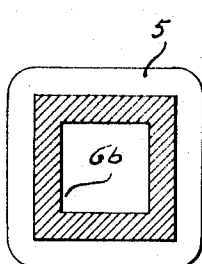


FIG. 4

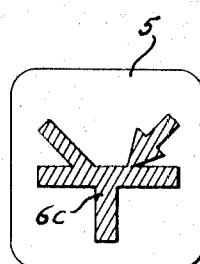


FIG. 5

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HAND GRAPHIC SYMBOL MARKING DEVICE

BACKGROUND OF THE INVENTION

1. Field of the Invention

Hand operated stamping device for producing graphic symbols.

2. Description of the Prior Art

In the making of a chart bearing a repeated graphic symbol and in other areas where one or more graphic symbols repeatedly occur on a surface, it is highly desirable to have a simple and inexpensive device by which such a symbol may be rapidly and repeatedly stamped on such surface and in each instance accurately directed at the exact point at which it is desired to have such symbol occur. Prior art devices which have attempted to solve this problem have been relatively complex, expensive, difficult to orient perfectly, or otherwise have left much to be desired.

SUMMARY OF THE INVENTION

This invention overcomes the limitations of the prior art by being constructed of a base member having a bottom surface and having a cantilever spring arm secured to its upper surface; the spring arm carrying a stamping die at its outer end. The cantilever spring has substantially only one degree of flexibility in a direction at right angles to the bottom surface of the base member so that the stamping die is guided accurately through an opening provided in the base member to its desired stamping position. The base member is provided with perpendicular guide lines on its bottom surface and is transparent at such location so that the guide line may be observed through it. Also the base member is thinner at such location to minimize optical distortion in such observation.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is an exploded perspective view of an embodiment of the invention with its two component parts shown separated for purposes of clarity.

FIG. 2 is an inverted view of the face of the stamping element of FIG. 1, showing one form of graphic symbol which may be used; and

FIGS. 3, 4 and 5 are enlarged face views of similar stamping elements showing additional examples of graphic symbols which may be used.

DETAILED DESCRIPTION OF THE INVENTION

In FIG. 1, the marking device consists of two basic elements, a transparent base plate 1, preferably made of a transparent plastic and a stamping member 2. The stamping member consists of a support block 3, from which extends a cantilever spring arm 4, the outer end of which carries a stamping head 5, the lower face of which bears a graphic symbol 6. This graphic symbol which in FIG. 2 is in the form of a circle, projects from the face of the head 5 so that it forms a stamping die. The die is made of a relatively firm porous material, such as a fine grained plastic or sponge rubber and is impregnated with printing ink so that a large number of the symbol 6 may be stamped before it becomes necessary to replenish the ink. The spring arm 4 is a flat leaf made of a spring material, such as a hard, resilient plastic or a sheet of spring metal. It is relatively thin so that it possesses flexibility in a direction at right angles to the surface of the die 6 but is sufficiently wide so that

it possesses substantially no flexibility transverse to such direction.

The stamping member 2, in the assembled device, is cemented or otherwise securely fastened to the base plate 1. Preferably it is accurately located on the base plate by means of a pin 7 which projects from the lower face of support block 3, fitting into a corresponding hole 8 in the base plate. In such assembled device, the stamping head overlies and projects into an opening 9 extending through the base plate 1. The device is so dimensioned that, in its normal upper position, the face of the die 6 is spaced such a short distance from the plane of the bottom of base plate 1, as compared to the length of the arm 4 that, when the head 5 is depressed to produce a stamping stroke, the face of the die moves substantially in a direction at right angles to the plate of the bottom of plate 1 giving a very accurate stamping impression on the surface on which the base plate 1 is adopted to be placed. Although the opening 9 is illustrated as conforming in shape to the head 5, the outer dimensions of the head are less than the dimensions of the opening 9 so that a clearance is maintained between head 5 and opening 9. This opening 9 does not serve to guide the die 6 into its stamping function, such guidance being afforded by the flexibility characteristics of the spring arm 4 as described above. Therefore, the base plate 1 may be made with relatively wide tolerance for the opening 9 which simplifies the manufacture of base plate 1.

As shown, the bottom of base plate 1 is flat and is adapted to be placed in firm contact with a flat member, such as a chart or graph, to be stamped. In order to be sure that the stamped symbol is located exactly at the desired spot, the bottom surface of the base plate 1 is provided with perpendicular guide lines 10 and 11 arranged so that their extensions across the opening 9 would intersect exactly at the center of the stamping die 6 as it contacts the member to be stamped. The lines are intended to be aligned with guide lines or other indicia ordinarily found on graphs and the like so that, not only is the stamped signal placed at the correct spot, but also, in the case of symbols which should be oriented in a particular manner, such orientation is readily produced.

In order to provide sufficient rigidity to hold the stamping member firmly in place and to provide sufficient thickness so that the device may be readily grasped and manipulated by the fingers of the operator of the device, the rear portion 12 of the base plate 1 is made of a substantial thickness, for example on the order of one-eighth of an inch. However, in order to minimize any optical distortion of the location of the guide lines 10 and 11 as viewed by the operator through the base plate 1, the portion 13 of the base plate which overlies the lines 10 and 11 is made substantially thinner than the portion 12, and may be, for example, about one-half the thickness of 12.

In use, the operator places the base plate 1 on the surface to be stamped and observes the guide lines 10 and 11. Since they are actually located, at the time, in contact with such surface and since there is virtually no optical distortion of their position, the operator is able to manipulate the base plate into exactly its desired position to produce the desired location and orientation of the graphic symbol stamped on such surface. Thereupon the operator depresses the stamping head 5 to produce the desired stamping impression.

Preferably the device is quite small, and in a typical embodiment the base plate may be about 1 and ½ inches wide and 2 inches long and have the thickness mentioned above. Thus, it is extremely light in weight and easily carried and manipulated.

FIGS. 3, 4 and 5 show stamping dies 6a, 6b and 6c respectively as a cross, a square and a transistor symbol which are examples of the many types of graphic symbols in which the stamping die may be formed.

It is to be understood that, changes in the above details may be made within the scope of the appended claims. For example, instead of the bottom of the base plate being flat, it could be curved or otherwise configured to conform to the shape of the surface upon which the stamping is to occur. Also the stamping die might be made of a hard metal to produce its stamping impression through carbon paper or it might be heated to heat-stamp through a plastic film coated with a heat transferable pigment. Various other changes will suggest themselves to those skilled in the art.

What is claimed is:

1. A graphic symbol marking device for marking on a linear coordinate surface member comprising:

a. a base member having a bottom surface adapted to be placed on the surface to be marked;

b. a stamping head supporting structure comprising a rigid member mounted on the upper surface of a first portion of said base member, and a substantially flat spring arm secured at one end to said rigid member and overlying and spaced from said

upper surface.

c. a stamping head secured to said spring arm at a point removed from said end and being provided with a symbol stamping die on its lower side;

d. said spring arm having substantially only one degree of flexibility in a direction at right angles to said bottom surface of said base member and being adapted to be moved manually in said direction whereby said die is also adapted to be moved in said direction;

e. said base member being provided with an opening in a second portion of said base member, said opening being disposed in the path of travel of said die, whereby said die is adapted to be moved through said opening to substantially the plane of said bottom surface;

f. said second portion of said base being transparent and provided on its bottom surface with two guide lines oriented so that if extended they would intersect substantially at the center of said die as it moves into said plane of said bottom surface of said base member.

2. A device as in claim 1 in which substantially all of said second portion of said base member is substantially thinner than said first portion of said base member.

3. A device as in claim 1 in which the stamping die is comprised of a plastic material impregnated with printing ink.

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