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E. E. PARK
 DEVICE TO LOCATE AND PUNCH MARK THE
 INTERSECTION OF TWO STRAIGHT LINES
 Filed Jan. 25, 1952

2,708,972

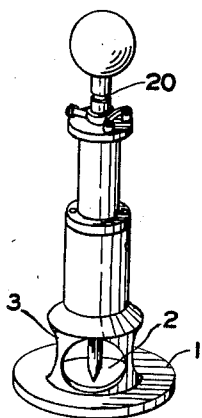


FIG. 1

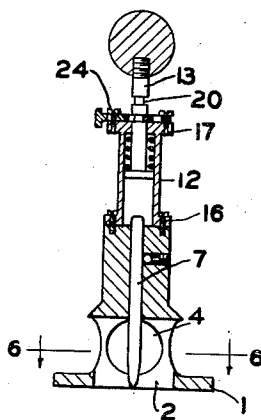


FIG. 2

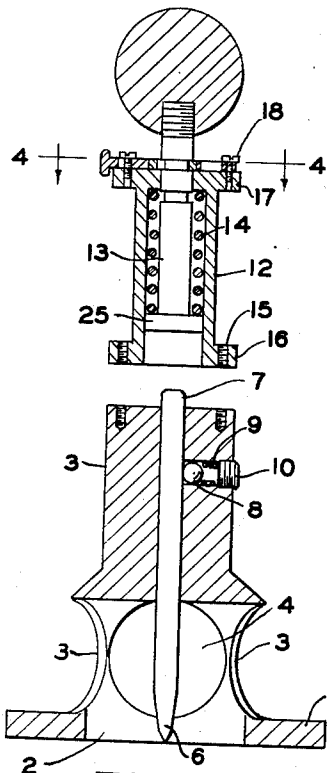


FIG. 3

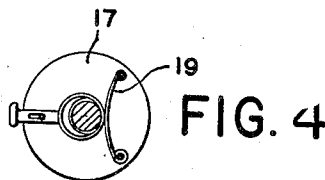


FIG. 4

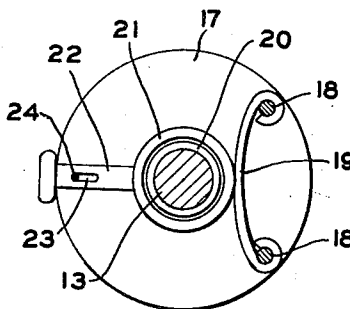


FIG. 5

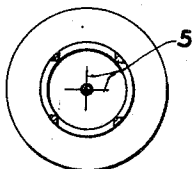


FIG. 6

INVENTOR.
 EMMETT E. PARK

BY

Marion M. Blackburn

ATTORNEY

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DEVICE TO LOCATE AND PUNCH MARK THE INTERSECTION OF TWO STRAIGHT LINES

Emmett E. Park, Rock Island, Ill.

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4 Claims. (Cl. 164—123.5)

The present invention relates to a marking tool of the general nature of the structures shown in Patent No. 311,619, to Varnum, February 3, 1885; Patent No. 1,686,512, to Burkenstein, October 9, 1928; and Patent No. 2,114,228, to Maples, April 12, 1938. However, these structures are not constructed for accurate positioning of a marker on the intersection of two lines. There is apparatus for accurate positioning of a marker with respect to intersecting lines, but it is complicated and expensive. It is, therefore, the purpose of my invention to provide an accurate apparatus for the purpose indicated at a reasonable price.

In the drawings annexed hereto and forming a part hereof:

Fig. 1 is a perspective view of my marker;

Fig. 2 shows a longitudinal section of the structure shown in Fig. 1;

Fig. 3 shows a longitudinal section of the structure shown in Figs. 1 and 2 with parts in a different position of adjustment;

Fig. 4 shows a transverse section substantially along the plane indicated by the line 4—4 in Fig. 3;

Fig. 5 shows an enlarged horizontal section, comparable to Fig. 4, but with parts in a different position of adjustment; and

Fig. 6 is a cross-section indicating the intersecting lines, the intersection of which is to be hit by the point of the marker.

Reference will now be made in greater detail to the annexed drawings for a more complete description of this invention. In this apparatus is a base 1 having a central hole 2, and from this base 1 rises a cylindrical support 3 through which are a plurality of holes 4 by means of which the operator may look at the intersecting lines 5. These will be reflected on the surface of the marking point 6. When the marking point is placed at the point of intersection, the line adjacent the observer will be reflected by the point 6 as a straight line. However, if the point 6 is not at the intersection, then the line will not appear as a straight line.

The marker unit 7 is held by a ball 8, pressed inwardly by a spring 9. The spring 9 is held in by a screw plug 10 which may be adjusted to vary the tension of the spring 9 and the ball 8. The hollow through the apparatus for the marker unit 7 is made just large enough for the marker unit 7 to slide up and down, and yet be held closely. The apparatus may be held in place by placing two fingers on the base 1.

This apparatus may be used without the addition of an upper extension 12, but this is regarded as a desirable refinement. It consists of a hollow cylindrical member having a plunger 13 pressed downwardly by a spring 14. The extension 12 may be held to the cylindrical support 3 by a plurality of screws inserted through the holes. These holes are formed in a flange 16. At the upper end of the extension 12 is formed another flange 17 in which are located screws 18 serving as abutments to hold a spring 19.

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The piston 13 may be withdrawn upwardly and, when this is done, the spring 14 will be compressed. When this is done, the spring 19 will cause the ring 21 to snap into the groove 20 in the shank of the plunger 13, thereby acting as a latch. Preferably, there is a plurality of grooves 20 for giving different reactions to the piston. If a light stroke by the piston is desired, the piston 13 is withdrawn until a ring 21 is forced into a groove 20, which is the first groove, whereas, if a harder stroke of the plunger on the marker unit is desired, the piston is withdrawn until a second groove 20 comes opposite the ring 21, when the spring 19 will force the ring 21 into engagement with the groove 20. In order to release the ring 21 from engagement with the groove 20, a finger may engage a slide 22 and force the ring out of the groove 20. The slide 22 is provided with a slot 23 through which extends a screw 24. When the slide 22 is forced inwardly, the spring 19 is bent sufficiently to permit the ring 21 to release the plunger 13 and cause head 25 to strike the marker unit 7, producing an in-effaceable mark on the surface bearing the cross-lines 5.

The marker unit can be pushed back sufficiently that it will not engage the metal surface on which the marks are placed. It can be just slightly separated therefrom.

It will be understood that slight variations may be made from the structure described above without departing from the principles of this invention disclosed in this specification and as defined by the appended claims.

Having now described my invention, I claim:

1. A marking tool comprising a hollow cylindrical support, flanged at its lower end, a marker unit slidable vertically through the hollow of said support, said marker unit having a substantial body and its lower end tapered to an axial point, said cylindrical support having a hole through the vertical wall thereof into the interior of the hollow to receive a spring-pressed ball, a spring-pressed ball in said hole to engage a lateral wall of the marker unit to hold the marker unit slidably in the cylindrical support, said cylindrical support having a plurality of observation holes through the wall thereof, said support being counterbored from its lower surface to be in light-giving communication with said observation holes to enable an observer to look through the observation holes to observe the reflection of two intersecting lines below the marker unit, a hollow detachable extension having a plunger slidable in said extension, and a spring in said extension to force said plunger downwardly to strike said marker unit to mark the center on which said cylindrical support is supported.

2. A marking unit comprising a hollow base portion and a hollow extension, a marker unit slidable in the base portion, a spring-pressed ball bearing on the marker unit and controlling movement thereof in said base portion, a spring-actuated plunger movable longitudinally of said extension, said plunger having a head and a shank provided with a transverse groove, and said extension having a unit on the end thereof for engaging in the groove to hold said plunger in spring-compressing position and being releasable from the groove to cause the spring to move the plunger to serve as a hammer for the marker unit, the base portion having an outwardly extending flange whereby the user can hold the base portion in position on the surface being marked without danger of being moved when the marker unit is used.

3. A marking tool comprising a flanged cylindrical support having an axial hole therethrough, a marker unit slidable in the cylindrical support, an upper extension for the cylindrical support, flanged at its lower end and secured to the support by screws, the extension being hollow and having a plunger therein, the plunger having a head and shank, a spring surrounding said shank and pressing against the head of the plunger and

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the inner surface of the head of the extension, grooves transversely of the shank, and a spring-actuated latch surrounding the shank and external to the extension for latching the plunger in spring-compressing position and when unlatched, allowing the spring to urge the plunger to strike the marker unit to cause the marker unit to make an impression.

4. A marking tool as defined by claim 3 in which the latch is spring-actuated by a transverse spring, a pair of abutments holding the spring and allowing the bending of the spring to permit the spring-actuated latch to be forced into the transverse grooves, the marker unit being capable of perfecting an image of a line drawn on the material being marked so that the line and its image will appear as a straight line when the marking point is in line with the line, said support having a counterbore in its lower surface, said counterbore being concentric with, but having its walls spaced from the marker, light-entrance openings in said support communicating said counterbore with outside light so that the marker unit is capable of reflecting an image of the line drawn on

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the material being marked so that the line and its image will appear as a straight line when the marking point is in line with the line.

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