United States Patent

[11] 3,600,812

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[54] **SURVEYOR'S SIGHTING TARGET**
5 Claims, 6 Drawing Figs.

[52] **U.S. Cl.** ..... **33/74,** 40/125 A
[51] **Int. Cl.** **G01c 15/08,** G09f 7/12
[50] **Field of Search** ..... 33/74 D, 52, 46, 47; 40/125 A, 23 A

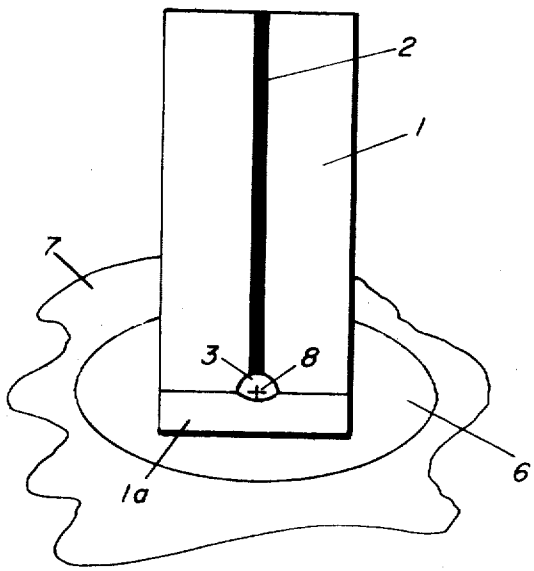
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Primary Examiner – Robert B. Hull
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ABSTRACT: A surveyor's sighting target for use on a surveying monument comprises a strip of stiff, foldable material including a body portion having a pair of feet connected to one end, an index mark on the body portion, and an opening through the body portion at the line of connection of the feet. In use of the target, the feet are spread apart and affixed to a surveyor's monument having the usual reference cross on its surface. By looking through the view opening and lining the index mark on the target with the cross on the monument, the surveyor is able to locate the target precisely in the proper position.



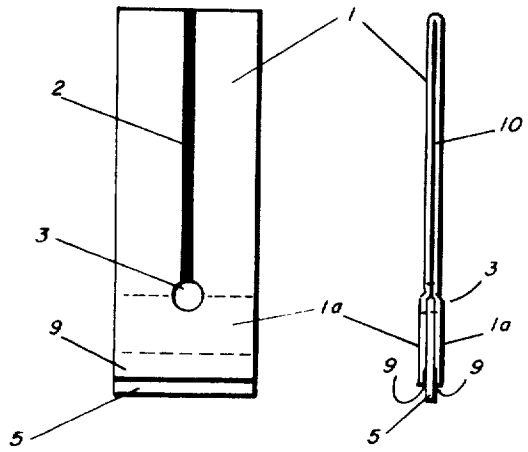


FIG. 1. FIG. 2.

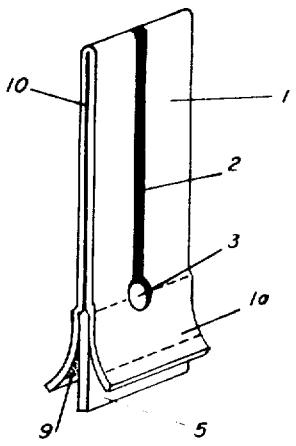


FIG. 3.

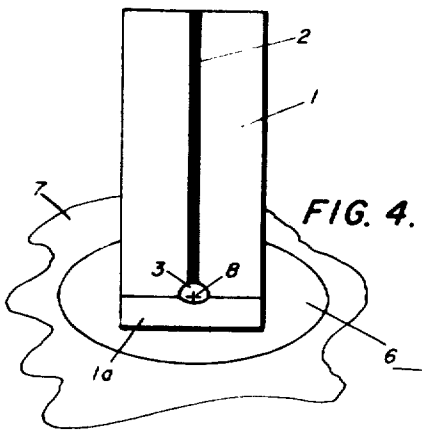


FIG. 4.

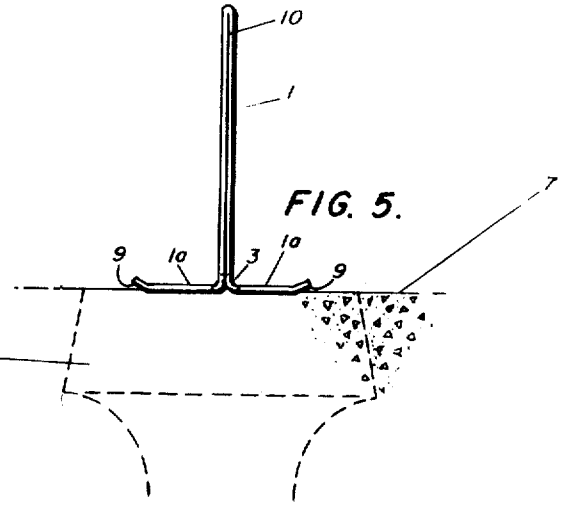


FIG. 5.

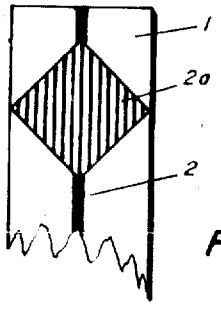


FIG. 6.

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SURVEYOR'S SIGHTING TARGET

This invention relates to sighting targets for use by surveyors. It pertains particularly to sighting targets for use by surveyors to determine the reference marks on surveying monuments.

As is well known, it is common surveying practice to start, progress, and finish a land survey on surveying monuments, usually consisting of a brass plate embedded in concrete or other durable paving material. The upper surface of the plate is marked with a reference cross which indicates the exact location of the point or line to be determined.

Since the sights by which this is accomplished are made from some distance, the surveyor usually impales on a nail a card marked off with characteristic colored rectangles, and locates the resulting assembly directly above the reference cross on the monument. He then locates the point of intersection of the lines defining the rectangles on the card with an appropriate sighting instrument, thereby determining the line which he is seeking.

It is the general purpose of the present invention to provide a sighting target which replaces the card-and-nail target conventionally used, and which is characterized by the following significant advantages:

1. It may be affixed directly to the monument, precisely over the reference cross, thereby locating the survey line exactly.
2. It is easy to maintain in a perpendicular position during use, and thus facilitates the work of the surveyor.
3. It is readily visible under conditions of darkness, fog, snow, and drab colorless backgrounds.
4. It is easy to apply.
5. In addition to surveying monuments, it may be applied to and used in conjunction with other mounting surfaces such as the walls of buildings, fence posts, rocks, tree trunks, etc.
6. When used on highways, it holds a true line even if run over by a vehicle.
7. It does not have sharp projections or surfaces which might damage vehicle tires.
8. When used as a reversing target, the same target may be used for both foresight and backsight.
9. It holds true on supports of wire, wood and plastic, as well as on objects too small to hold or support an eight penny nail.
10. It adheres to and may be used on any supporting surface without leaving any scratches or holes.
11. Its use is not attended by a litter problem.
12. With companion targets, it may be assembled in the form of perforated sheets conveniently includable in the surveyor's looseleaf notebook.
13. Its cost is nominal.

The manner in which the foregoing and other objects of this invention are accomplished will be apparent from the accompanying specification and claims considered together with the accompanying drawings, wherein:

FIGS. 1, 2 and 3 are views in side elevation, end elevation and perspective, respectively of the herein described surveyor's sighting target in its storage condition;

FIGS. 4 and 5 are views in side and end elevation, respectively of the target in its applied, use position; and

FIG. 6 is a fragmentary view in side elevation of a modified form of the target.

As illustrated in the drawings, the target comprises a strip of stiff, foldable material having a body portion 1 and a pair of feet 1*a* connected to one end of the body portion along transverse fold lines. The body portion may be fabricated from a diversity of materials such as sheet metal, cardboard or paper, provided that the material is tough, flexible and weather proof. Preferably it is made from adhesive-backed tape, such as masking tape, having a suitable pressure sensitive adhesive 10 spread over one surface.

The dimensions of the target are variable depending upon its application. However, in a typical instance, the target might measure one inch in width by 2¾ inches in length.

Where the target is made from tape, the tape may be reversely folded in the manner indicated and the body portion pressed together to adherently unite the two segments. The feet segments, however, are left spread apart, as shown particularly in FIG. 3, and a block 5 of material such as waxed paper or waxed cardboard inserted between the feet to prevent the two surfaces from becoming permanently glued together.

To assist in the separation of the feet, pieces 9 of the same or similar wax-coated paper, cardboard or other material may be adhered to the inner margins of the feet.

The body portion 1 of the target bears a suitable index mark to assist the surveyor in locating the desired reference point on the monument. Although this index mark may be variously sized and contoured, it preferably comprises a central stripe 2. This may be a solid line or a divided line. In addition, it may be reinforced by an overlay 2*a* of fluorescent tape colored bright orange or red and appropriately shaped, as in the shape of a square, triangle, or cross. This becomes brilliantly visible under conditions of low visibility and assists the surveyor materially in locating the target in the first instance.

The target further is provided with an opening 3 which should be situated at the point of intersection of the longitudinal index mark 2 and the transversely extending fold lines which separate the feet portions from the body portion of the target. The opening may be of any desired shape, but preferably is round. It should be sufficiently large so that in the application of the target, the point of intersection of the crossed lines on the monument is readily visible. Where the target is made from paper, the openings may easily be punched out mechanically in the desired location.

Although the target may be used on many support surfaces, as the walls of buildings, fences, trees, stones, etc., it is particularly designed for use on surveyor's monuments, indicated generally at 6 in the drawings. Such monuments comprise brass plates, adapted to be embedded in concrete or asphalt paving 7. On their upper exposed surfaces they have crossed lines indicated schematically at 8 in FIG. 4. These are chiseled or otherwise formed in the surface of the brass. A reference point thus is provided which permanently locates the desired survey point or line.

To line up the target on such monuments, or on other supports, the foot portions 1*a* are spread apart from the waxed separator 5, and the latter discarded. The target then is placed accurately over the reference cross on the monument. This is accomplished readily by aligning index stripe 2 with one of the crossed lines on the monument and, the plane of the body of the target 1 with the other of the crossed lines. Since such alignment inherently is accomplished using the principle of vernier acuity, it may be completed with minimum effort and great accuracy.

After being properly located, the feet portions of the marker are pressed down on the surface of the monument or other support, as shown in FIG. 5. The body portion remains erect and provides a readily visible target for use by the surveyor.

Having thus described my invention in preferred embodiments, I claim as new and desire to protect by letters patent:

1. A surveyor's sighting target for use on a monument having thereon a reference mark in the shape of a cross, the target comprising:

a. a strip of stiff, foldable material including a body portion having a pair of feet connected to one end along a transverse fold line,

b. an index stripe extending longitudinally of the body portion substantially at right angles to the fold line of the feet,

c. a view opening through the strip intercepting both the index mark and the fold line, and

d. securing means for securing the target to the monument with the stripe substantially aligned with one line of the cross and the plane of the body portion substantially aligned with the other line thereof, the center of the cross being visible through the view opening.

2. The target of claim 1 including brightly colored indicia superimposed on the index stripe for assisting the surveyor in locating the same with his sighting instrument.

3. The target of claim 1 wherein the securing means for securing the target to the monument comprise adhesive carried by the feet.

4. The target of claim 1 wherein the strip of stiff foldable material comprises a strip of reversely folded, adhesive-backed tape, the segments of the tape comprising the body portion being adhesively secured to each other and the segments of the tape comprising the feet being separated from each other for fixing to the monument.

5. The target of claim 1 wherein the strip of stiff foldable material comprises a strip of reversely folded, adhesive-backed tape, the segments of the tape comprising the body portion being adhesively secured to each other and the segments of the tape comprising the feet being separated from each other for fixing to the monument and including a piece of material having an adhesive release surface interposed between the feet for maintaining them separate pending use of the target.