Nov. 3, 1925. 1,559,999

E. F. SHIPMAN

DANGER SIGNAL

Filed June 20, 1925

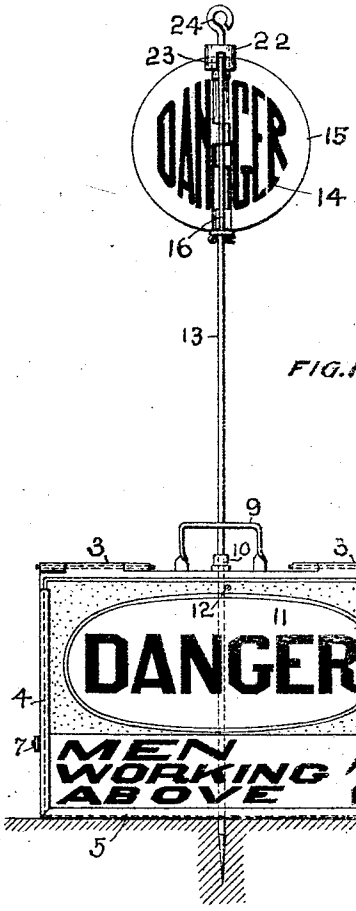

FIG. 1

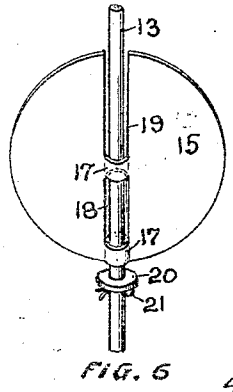

FIG. 6

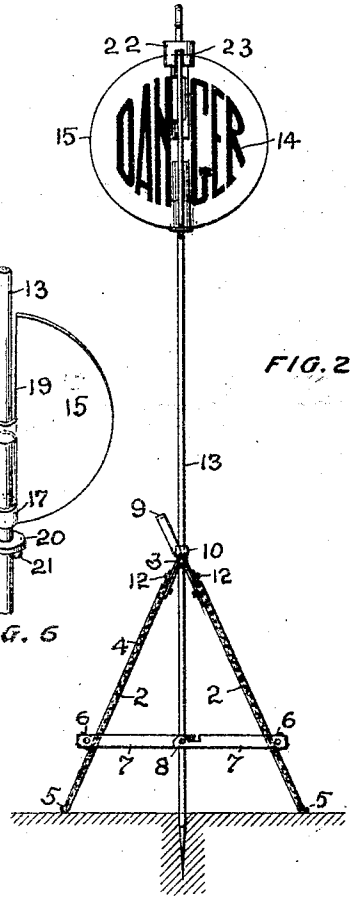

FIG. 2

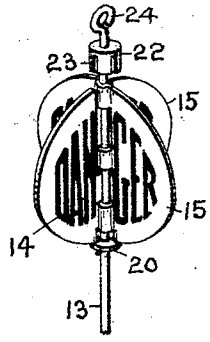

FIG. 5

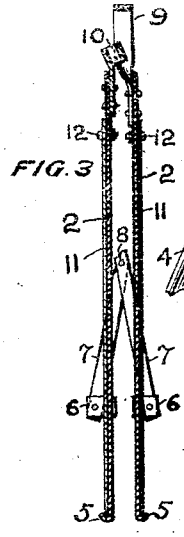

FIG. 3

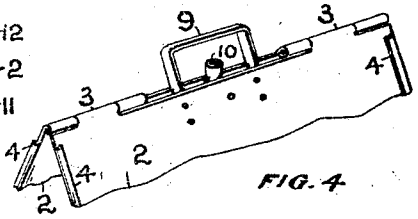

FIG. 4

Inventor
Emanuel F. Shipman.
By
Attorney.

Patented Nov. 3, 1925. 1,559,999

UNITED STATES PATENT OFFICE.

EMANUEL F. SHIPMAN, OF PHILADELPHIA, PENNSYLVANIA.

DANGER SIGNAL.

Application filed June 20, 1925. Serial No. 38,396.

To all whom it may concern:

Be it known that I, EMANUEL F. SHIPMAN, a citizen of the United States, and resident of Philadelphia, county of Philadelphia, and State of Pennsylvania, have invented an Improvement in Danger Signals, of which the following is a specification.

The object of my invention is to provide a portable danger sign or signal especially adapted for temporary use where workmen are engaged in either constructive or repair work and, more particularly, where the men are either above or below the surface of the street.

My improvements relate more especially to a portable danger sign which is collapsible for convenient transportation and which, when open, provides a substantial self-supporting structure.

My invention consists of a danger sign formed of two sheet metal frames hinged together at their upper end with means to hold them in spread and spaced relation at the bottom, said frames provided with suitable danger notices upon their surfaces and having a tubular support at the top combined with a vertical rod adapted to pass down through said support into the ground and preferably carrying at its upper end danger signs.

My invention also comprises the aforesaid structure when the signs on the rod are formed upon hinged plates adjustable at an angle to each other and having associated means for locking them in such adjusted positions whereby the notice of danger may be seen from all points of observation about the device.

My invention further embodies the hinged frames aforesaid when the guide for the rod is secured to one of the frames and a handle is secured to the other of the frames, the parts being so related and associated that, when the frames are extended in self-supporting position, the guide for the rod extends substantially vertical and the handle projects laterally to provide clearance for the rod and which, when the rod is removed and the frames folded in collapsed condition for portability, enables the handle to extend vertically above the collapsed danger signs.

My invention also comprehends other details of construction which, together with the features above enumerated, are fully described hereinafter and more particularly pointed out in the claims.

Referring to the drawings: Fig. 1 is a front elevation of a danger sign embodying my invention; Fig. 2 is a side elevation of the same; Fig. 3 is a vertical section of the lower part of the apparatus when collapsed for portability; Fig. 4 is a perspective view of the upper portion of the hinged frames; Fig. 5 is a perspective view of the danger sign devices on the rod; and Fig. 6 is a perspective view illustrative of the construction of one of the hinged plates and its method of attachment to the vertical rod.

2, 2, are plate frames hinged together at their upper ends, as indicated at 3, 3. The hinges 3, 3, are located at a distance apart so as to leave an open space at the middle between the hinges. These hinges may be made in any suitable way, but I prefer to form them of the sheet metal constituting part of the frames, as will be understood by reference to Fig. 4. These frames 2, 2, are rectangular in shape and the side edges and bottom are bent over to form channels or grooves 4, 4, and 5. The lower parts of the frames 2, 2, are straight and continuous and devoid of feet so that the frames rest directly upon the ground, as shown, giving great frictional contact. The lateral end portions of each of the frames are provided with angle iron lugs 6 to which are hinged the spacing bars 7, 7, and these spacing bars are hinged together at 8 so that they constitute spacing and bracing means between the two frames at each end of the device. These braces are collapsible, as indicated in Fig. 3, when the frames 2 are folded toward each other for portability. When the frames are spread, as indicated in Fig. 2, the braces then form a strut between them and hold them apart so that they have a firm support upon the ground.

Riveted to the middle upper portion of one of the frames 2 is a handle 9 which is so positioned that when the parts are col-

lapsed, as shown in Fig. 3, the handle is directly above the frames whereby, when carrying the same, the weight is exerted directly downward. The handle is preferably looped, as shown, and in alinement with it there is provided a tubular guide 10 which is secured to the other of the frames and is preferably arranged on an incline, as shown in Fig. 3, so that when the frames are spread as indicated in Figs. 2 and 4, the tubular guide part 10 will point directly upward and the handle 9 will be moved laterally so as to leave a clear space above the tubular guide portion to permit the anchoring and signal rod 13 passing downward through the tubular guide and into the ground at a place intermediate of the spread frames 2, 2, as will be readily understood by reference to Fig. 2. It will also be seen that while the rod 13 anchors the danger signal frames 2, 2, against displacement, said frames with the tubular guide also act to support the rod 13 in a vertical position, so that there is direct coaction of the parts each with the other.

The rod 13 may be utilized for holding a flag, lamp or other signal means, but I prefer that it shall be provided with a pair of suitable collapsible plates having the word "Danger" or other suitable signal thereon which, when in adjusted position, will indicate danger from all positions about them. In the preferred construction, I employ two plates 15, desirably circular and slotted as at 19 from the center outward to one edge. The remaining portion in alinement with the said slotted portion 19 is stamped up into oppositely directed looped portions 17 and 18 to permit the passage of the rod 13, as will be more clearly understood from Fig. 6. One of these plates will assume the position shown in Fig. 6 and the second plate will be sleeved upon the rod 13 but in an inverted position so that the two plates practically cross each other and both are hinged upon the rod. These plates are supported at the upper end of the rod by a washer 20 held in position by a cotter pin 21. In this manner, the plates may be revolved about the rod to lie flat against each other or they may be revolved to position them at right angles to each other, as shown in Figs. 1, 2 and 5. To retain them in their position at right angles, a sliding block 22 sleeved upon the rod may be employed, said block provided with transverse notches or grooves 23 upon its lower part. Preferably, these notches are arranged at right angles to each other, so as to fit down over the upper edges of the plates 15, 15, and hold them at right angles to each other. The upper end of the rod may be bent into a loop, as at 24, for preventing the block 22 and the signal plates 15 from being disengaged from the rod. It will also be understood that by raising the block 22, the two plates 15 may be brought in parallel relation and the block may then be lowered to lock them together. The block 22 constitutes, in effect, a locking means for holding the plates at right angles to each other and, if desired, may also constitute a locking means for holding the plates in their parallel relation. It is not necessary that there shall be a close fit between the plates and the notches of the block 22, as the plates may be made of thin metal and the notches sufficiently wide to engage the edges of both of the plates at one time.

In respect to the plates 15, they may be colored in any suitable manner, either all red or with definite red letters spelling "Danger" as shown. It will be noted that the first three letters of the word will come upon one side of the rod 13 and the remaining three letters on the other side. Consequently, whether we look edge-on on one of the plates, as indicated in Figs. 1 and 2, or look in a direction intermediate of said plates, as in Fig. 5, the word "Danger" stands boldly out notwithstanding that in the first case all of the letters are on one plate, whereas in the second instance half of the letters are on one plate and half on the other. I, however, do not limit myself to the particular arrangement of these letters nor to the shape or configuration of the plates.

The hinged frames 2, 2, may be painted upon their outer surfaces with the word "Danger" or any other words or insignia which may be desired, but I prefer that these frames shall be provided with detachable sign plates 11 which are of a shape to slide down into the grooves 4, 4, and to be received at the bottom in the groove 5. These removable signs may retain their position by frictional contact, but are preferably retained by means of a small bolt 12 passing through the sign and the body of the frame 2. As will be seen from Fig. 1, the sign contains the word "Danger" which may be displayed in any suitable manner, usually with considerable red color. I also prefer to place upon the sign an arrow 11' pointing upward or downward and associated with the words "Men working above" or "Men working below", as the case may be, to give to the public sufficient information as to the direction from which the danger might arise. While I have found this type of sign signal well suited to the purpose, I do not restrict myself in any manner to the particular wording upon the sign. It will be understood that by making the danger signs removable from the hinged frames, these signs may be readily changed to suit the particular character of the work being done. For instance, if the work is being done overhead, then a sign such as indicated in Fig. 1 with the arrow pointing upward is suitable, but if the workmen are en-

gaged in trench work or at some place below the ground, then the sign should be changed to show an arrow pointing downward and with the word "Above" changed to "Below". By making the signs in the form of removable plates, they may be readily replaced and consistently designate the direction from which the danger may arise. It will be further understood that by employing removable signs 11, both they and the body of the frames 2, 2, may be of lighter metal since they reinforce each other. Furthermore, the turning of the edges at 4 and 5 of the frames 2 gives additional rigidity and strength and this is further increased when the sign plates are added.

In practice, the sign plates are more artistic when they are embossed, such as indicated in the double lines around the word "Danger" and about the border of the plate, and such embossing adds considerably to the rigidity. By reason of this, the total weight of the signal device may be considerably reduced over what would be necessary if the reinforcing was required to be by use of angle irons or other forms of rolled metal bars to which the signs would be riveted.

My improved device is simple to construct, is durable in use, and efficient for the purpose intended. It will be noted that the main weight of the device as a whole is arranged close to the ground and is, therefore, in a position to offer the greatest resistance against wind. Furthermore, it is anchored by means of the rod and, consequently, is enabled to retain its position against any reasonable force which might otherwise displace it. Its larger or main danger sign is sufficiently large and directed at an angle that makes it easily read and, therefore, readily observed, but this is supplemented by the conspicuous danger sign on top of the rod in approximate alinement with the vision of the pedestrain which enhances the value of the device as a whole as a danger sign.

It will now be apparent that I have devised a novel and useful construction which embodies the features of advantage enumerated as desirable, and while I have in the present instance shown and described the preferred embodiment thereof which has been found in practice to give satisfactory and reliable results, it is to be understood that I do not restrict myself to the details, as the same are susceptible of modification in various particulars without departing from the spirit or scope of the invention.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. A portable danger sign, comprising two side frames hinged together at the top by separate hinge portions and provided with means for holding the lower portions of the frames in spaced relation, the upper hinged portions providing a space between the hinges, one of said frames provided with a tubular guide and the other of said frames provided with a handle in substantial alinement with the plane of the frame to which it is attached, said tubular guide and handle arranged in the space between the hinged portions.

2. The invention according to claim 1, wherein further, there is combined a vertical rod which extends through the tubular guide for attachment in the ground, whereby the danger sign is anchored when in spread relation.

3. The invention according to claim 1, wherein further, there is combined a vertical rod which extends through the tubular guide for attachment in the ground, whereby the danger sign is anchored when in spread relation, and danger sign means carried upon the upper end of the rod at a distance above the hinged frames.

4. The invention according to claim 1, combined with a vertical anchoring rod adapted to extend downward through the tubular guide when the frames are spread, said rod having at its upper end a danger sign comprising two sheet metal parts centrally sleeved upon the rod and interengaged with each other so that they may be turned in substantially the same plane or respectively adjusted to planes at right angles to each other, and locking means for holding the sheet metal parts in definite adjusted positions relatively to each other.

5. The invention according to claim 1, combined with a vertical anchoring rod adapted to extend downward through the tubular guide when the frames are spread, said rod having at its upper end a danger sign comprising two sheet metal parts centrally sleeved upon the rod and interengaged with each other so that they may be turned in substantially the same plane or respectively adjusted to planes at right angles to each other, and locking means for holding the sheet metal parts in definite adjusted positions relatively to each other, said locking means consisting of a slidable block upon the rod and having vertical slots at an angle to each other whreby they may receive the edges of the two sheet metal parts to hold them in angular relation.

6. A danger sign, comprising two sheet metal frames hinged together at the top and having their side and bottom edges bent outwardly and over to form grooves, combined with removable danger signs adapted to be received in the grooved portion of the frames, means for detachably holding the signs against rising in the grooves, spacing means for holding the frames in spread and spaced relation, and a handle structure secured to one of the frames and extending

upwardly above both of the frames at their hinged ends, the bottom grooved edges of the frames forming continuous supporting edges for sustaining the danger sign upon the ground.

7. The invention according to claim 6, wherein further, there is provided a vertical anchoring rod connected with the hinged frames and extending below their lower edges for the purpose of being driven into the ground.

In testimony of which invention, I hereunto set my hand.

EMANUEL F. SHIPMAN.