Nov. 12, 1940. J. C. CAIN ET AL 2,221,229

SIGNALING APPARATUS

Original Filed Nov. 1, 1938

Fig. 1.

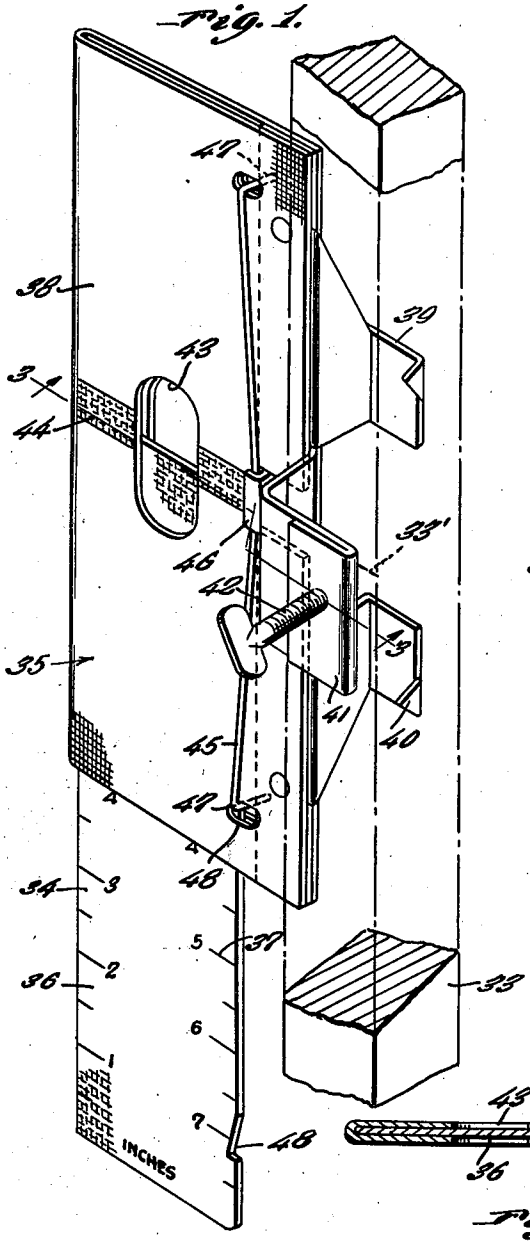
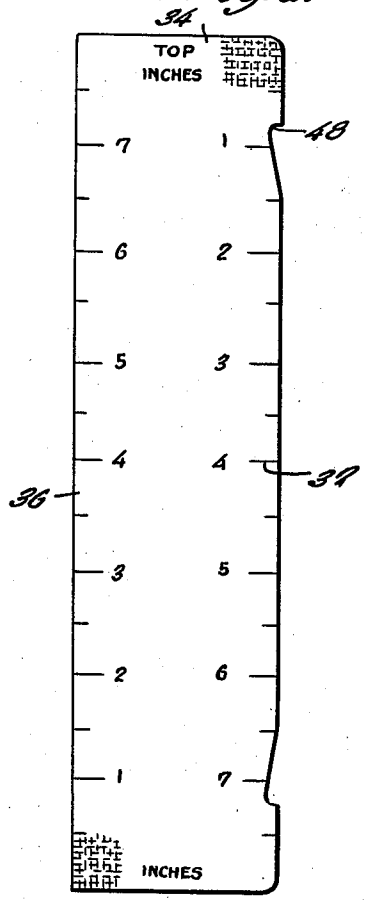



Fig. 2.



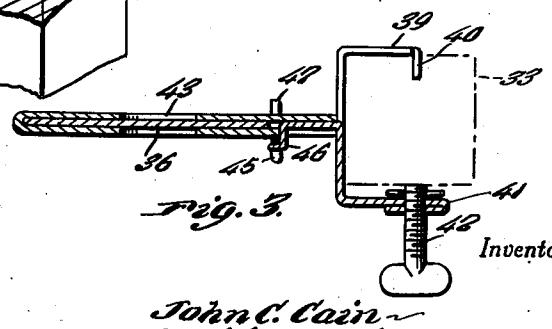




Fig. 3.

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# UNITED STATES PATENT OFFICE

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## SIGNALING APPARATUS

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Original application November 1, 1938, Serial No. 238,244. Divided and this application June 11, 1940, Serial No. 339,938

2 Claims. (Cl. 33—1)

Our invention relates to improvements in signaling apparatus for use in grading, more particularly on construction work, and in conjunction with gauge equipment forming the subject matter of our co-pending application Serial No. 238,244, filed November 1, 1938, and of which the present application is a division.

The principal object of the instant invention is to provide efficient, simply constructed apparatus for use on a stake alongside a road to signal to the operator of a grading machine whether cut or fill is required opposite the stake and the amount required, and which is particularly equipped for reading from a considerable distance.

To the accomplishment of the above, and subordinate objects presently appearing, a preferred embodiment of our invention has been illustrated in the accompanying drawing, set forth in detail in the succeeding description and defined in the claims appended hereto.

In said drawing:

Figure 1 is a view in perspective of the preferred embodiment of our improved signaling apparatus,

Figure 2 is a view in elevation of the signaling plate, and

Figure 3 is a view in transverse section taken on the line 3—3 of Figure 1.

Referring to the drawing by numerals, our improved signaling apparatus is designed to be mounted, as presently described, on grading stakes, one of which, designated 33, is shown in Figure 1, and which are driven into the ground and provided on the front face thereof with a transverse mark 33' establishing a point of uniform distance above the finished grade line.

The signaling apparatus comprises as its basic elements, an elongated signal plate 34 and a holder 35 for said plate.

The signal plate 34 is graduated on both sides thereof along both edges, as at 36 and 37, the graduations being numbered in consecutive order but reversely at opposite edges. The graduations 36 and 37 on one side, as shown, are in inches, and on the other side (not shown) in tenths of a foot. The holder 35 has the form of a flat rectangular sleeve 38 of suitable metal.

A pair of right angled clamping jaw members 39 and 40 extend from one side of the sleeve 38 in longitudinally spaced relation and to one side of said edge, and a member 41 extends from said edge intermediate the pair of members 39 and 40 and to the other side of the sleeve, the member 41 having a thumb screw 42 threaded therethrough and the arrangement being such that said members 39 and 40 and the screw 42 may be opposed to opposite sides of the stake 33 to clamp the holder 35 thereto and so that the holder extends to one side of the stake in upended position. The sides of the sleeve 38 are apertured in registration and centrally to provide a hand grip opening 43 in said sleeve.

The signal plate 34 is substantially rectangular and adapted to fit into the sleeve 38 for vertical sliding movement endwise therein and is of substantially the same length as the sleeve. A stripe 44 of vivid color is provided transversely and centrally of the sleeve 38 to function as a centering guide for a purpose presently explained.

The plate 34 is adapted to be frictionally held in different set positions in the sleeve 38 by means of a rod-like detent 45 secured intermediate its ends, as at 46, to the sleeve 38 to extend lengthwise thereof along one edge of the plate 34 and having right angled ends 47 passing through apertures 48 in the sleeve 38 and frictionally engaging said edge of the plate 34. A pair of notches 48 are provided in one side edge of the plate 34 for cooperation with the ends 47 of the detent member 45 to prevent complete removal of the plate endwise from the sleeves 38, said member, it will be understood, being flexible to free the ends 47 thereof from the notches 48 as occasion may require.

The sleeve 38 and plate 34 are differently colored in striking contrast.

The holder 35 is clamped to the stake 33, in the manner already described, with the stripes 44 horizontally aligned with the mark 33' on said stake. The plate 34 is then adjusted in the sleeve 38 of holder 35 to show the amount of cut or fill required to grade to the finished grade line. In the case that fill is required, said plate is moved downwardly in the sleeve 38 to show below said sleeve a number of inches thereof corresponding to the inches required to be filled. In this operation the graduations 36 and associated numbers are utilized, or in other words, the graduations numbered in upwardly ascending order. In the case of a cut, the plate 34 is moved upwardly to display above the sleeve 38 a number of inches thereof corresponding to the inches to be cut. In this case the graduations 37 and associated numbers are used, or in other words, the numbers arranged in descending higher order.

With the plate 34 in either of the two positions above described, an operator of a grading machine is provided with a signal which may be

read from the road to indicate whether cut or fill is required opposite the stake **33**, fill if the plate **34** shows below the sleeve **38** and cut if said plate shows above said sleeve. The reading of the signals is materially facilitated by the contrasting colors of the plate **34** and slide **33**. If the grade is right at this point, the plate **34** may be slid into the sleeve **38** out of sight except for the portion visible through the hand opening **43** and the operator of the grading machine thereby signaled that neither cut nor fill is required.

The foregoing will, it is believed, suffice to impart a clear understanding of our invention without further explanation.

Manifestly the invention, as described, is susceptible of modification without departing from the inventive concept and right is herein reserved to such modifications as fall within the scope of the subjoined claims.

What we claim is—

1. A device for indicating cut and fill operations in road construction work comprising an elongated plate-like holder of hollow construction adapted to be mounted on a marked stake in upended position and in centered relation to said mark, means on said holder for registration with said mark to center the same relative to the mark, clamping means on one side of the holder for mounting the same on the stake in laterally offset position, and a signal plate of elongated form vertically slidable endwise in said holder into different set positions to expose opposite ends thereof above and below said holder to indicate cut and fill operations, respectively, said plate being provided adjacent each side edge thereof with a row of numbered graduations for display above and below said holder, respectively, to indicate the depth of cut and fill operations, respectively, each row of graduations being numbered reversely relative to the numbering of the other row to facilitate reading the same above and below said holder.

2. A device for indicating cut and fill operations in road construction work comprising an elongated plate-like holder of hollow construction adapted to be mounted on a marked stake in upended position and in centered relation to said mark, means on said holder for registration with said mark to center the same relative to the mark, clamping means on one side of the holder for mounting the same on the stake in laterally offset position, and a signal plate of elongated form vertically slidable endwise in said holder into different set positions to expose opposite ends thereof above and below said holder to indicate cut and fill operations, respectively, said plate being provided adjacent each side edge thereof with a row of numbered graduations for display above and below said holder, respectively, to indicate the depth of cut and fill operations, respectively, each row of graduations being numbered reversely relative to the numbering of the other row to facilitate reading the same above and below said holder, and means to retain the plate in different set positions comprising a rod-like resilient detent secured intermediate its ends to said holder to extend along one edge thereof and having ends frictionally engaging one edge of said plate.

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