April 19, 1927. **1,625,683**

J. RAIL

BLADE GRADER LEVEL AND SLOPE INDICATOR

Filed Oct. 23, 1926

Fig. 1.

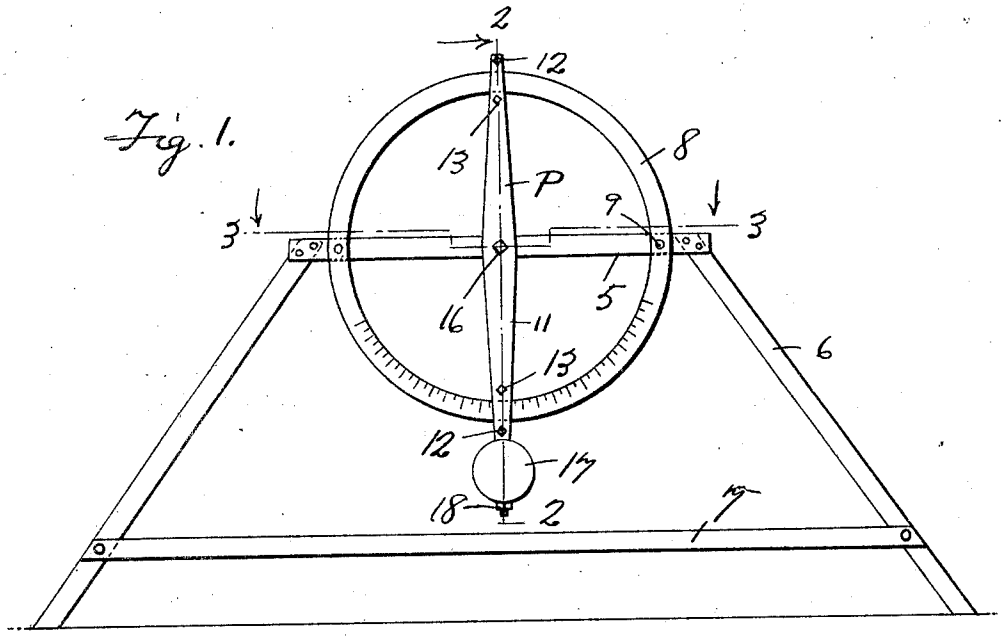


Fig. 2.

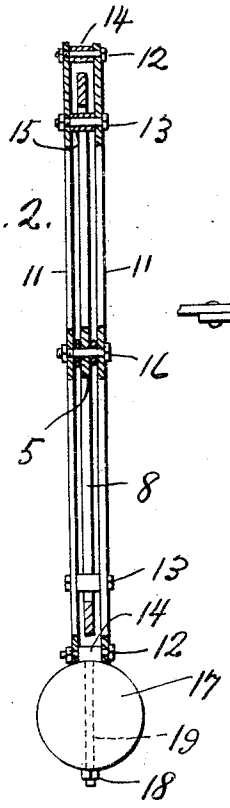
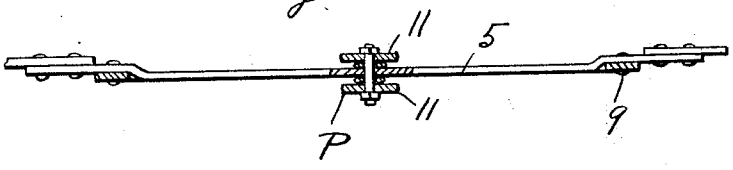


Fig. 3.



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BLADE-GRADER LEVEL AND SLOPE INDICATOR.

Application filed October 23, 1926. Serial No. 143,696.

The present invention relates to a blade grader level indicator to be used in levelling off round top roads or surfaces from road shoulder to drainage ditches or gutters. The device, in fact, will be found useful in most of any kind of grade work where a blade grader is used.

The important object of the invention lies in the provision of a device of this nature whereby the operators of blade grader machines can always know when the blade is cutting on the level so as to avoid having the work higher on one side than the other, or in getting the proper slopes on work when slopes are wanted.

Another important feature of the invention lies in the provision of a device of this nature which is simple in its construction, strong and durable, inexpensive to manufacture, accurate, efficient and reliable in use, and otherwise well adapted to the purpose for which it is designed. With the above and numerous other objects in view as will appear as the description proceeds, the invention resides in certain novel features of construction, and in the combination and arrangement of parts as will be hereinafter more fully described and claimed.

In the drawing:

Figure 1 is a side elevation of the device embodying the features of my invention,

Figure 2 is a vertical detailed section taken substantially on the lines 2—2 of Figure 1,

Figure 3 is a detailed section taken substantially on the lines 3—3 of Figure 1.

Referring to the drawing in detail, it will be seen that 5 denotes a cross bar which has its bent portions offset and fixed to the upper ends of legs 6. These legs 6 diverge upwardly towards each other. A brace 7 is formed between the lower portions of the legs 6. These legs 6 may be fixed on a blade grader in any preferred or desired manner. The parts thus far described constitute the supporting frame of the improved device.

A ring 8 is fixed at diametrically opposed points as at 9 to the cross bar 5. An indicating member P includes a pair of rods 11 which are held in spaced relationship by bolts 12 and 13, the former being located outside the ring 6 and the latter being located inside of said ring. Spacers 14 and 15 are located on the bolts 12 and 13 respectively. A bolt 16 pierces the mid portion of the rods 11 and the mid portion of the cross bar 5 to pivotally mount the indicating member P. The space 14 at the lower end of the indicating member P is provided with a depending bolt 19 extending diametrically through a spherical weight 17 and a nut 18 prevents the displacement of this weight. It will be seen that the weight will hold the pointer in a vertical position at all times. By having suitable indicia on the ring 8 it will be apparent that the operator may ascertain easily whether the blade grader is level or on an incline.

It is thought that the construction, operation, utility, and advantages of the invention will now be clearly understood by those skilled in this art without a more detailed description thereof. The present embodiment of the invention has been disclosed in detail merely by way of example since in actual practice it attains the features of advantage enumerated as desirable in the statement of the invention and the above description. It will be apparent that changes in the details of construction, and in the combination and arrangement of parts may be resorted to without departing from the spirit and scope of the invention as hereinafter claimed or sacrificing any of its advantages.

Having thus described my invention what I claim as new is:

1. A device of the class described including a frame, having a horizontal bar, a ring mounted on the bar so that said bar is disposed diametrically across the ring, a pair of rods, a bolt piercing the centers of the rods and the mid point of the bar, bolts projecting through the ends of the rods outside of the ring, other bolts piercing the end portions of the rods inside of the ring, spacing elements on the bolts, the spacing element on the lowermost bolt being provided with a weight element.

2. A device of the class described including a frame, having a horizontal bar, a ring mounted on the bar so that said bar is disposed diametrically across the ring, a pair of rods, a bolt piercing the mid points of the rods and the mid point of the bar, bolts projecting through the ends of the rods outside of the ring, other bolts piercing the end portions of the rods inside of the ring, spacing elements on the bolts, a bolt projecting

downwardly from the lower bolt spacing element, a weight pierced diametrically by said bolt, and holding said weight in place.

3. A device of the class described including, a cross bar having offset ends, a pair of legs one attached to each offset end, said legs diverging downwardly from each other, a brace connecting the lower portions of the legs, a pair of rods one on each side of the cross bar, means pivoting the mid points of the rods to the mid point of the bar, a ring fixed to the bar so that said bar extends diametrically there-across, said ring extending between the rods, a plurality of bolts connecting the rods together, two of said bolts being located exteriorly of the ring, two other of said bolts being located interiorly of the ring, spacing elements on the bolts, one of the spacing elements on the outer bolt being provided with a bolt extending laterally therefrom, and a weight on the last-mentioned bolt.

In testimony whereof I affix my signature.

JOSEPH RAIL.