Nov. 1, 1949. A. G. WHITE 2,486,697

GRADE PITCH INDICATOR

Filed May 21, 1947

Fig. 1.

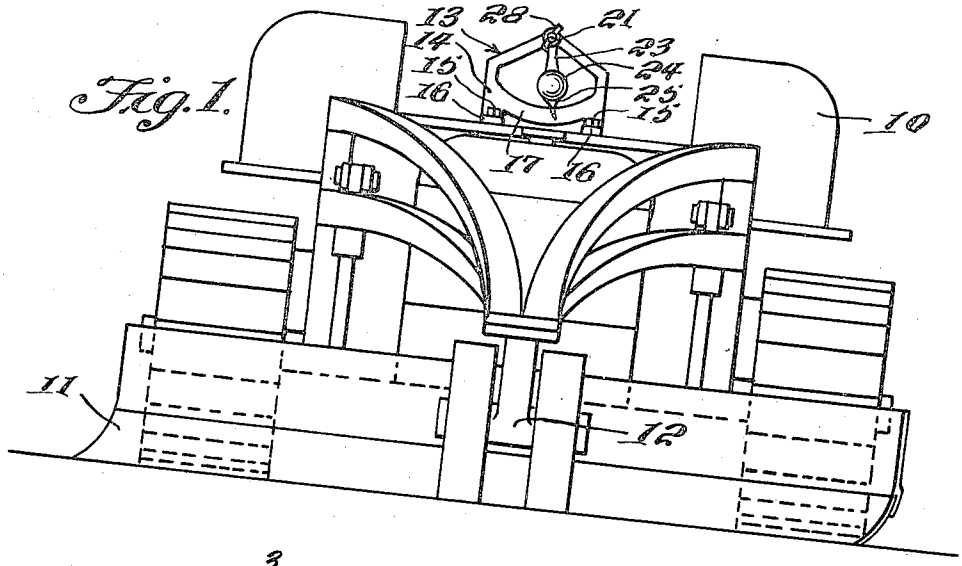


Fig. 2.

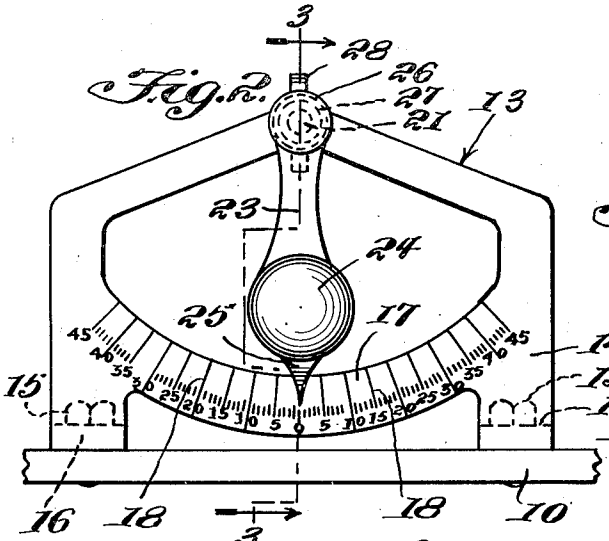


Fig. 3.

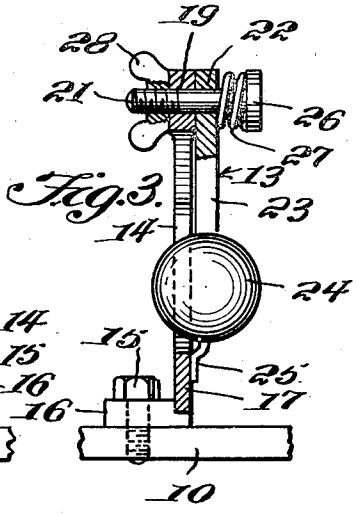


Fig. 4.

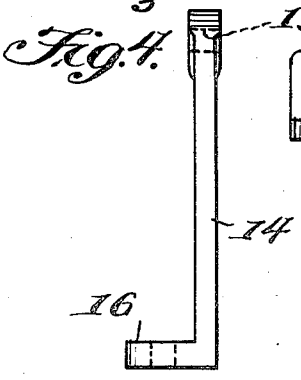
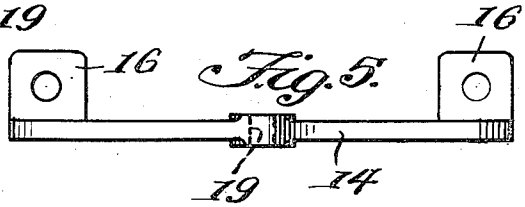


Fig. 5.



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Patented Nov. 1, 1949

2,486,697

UNITED STATES PATENT OFFICE

2,486,697

GRADE PITCH INDICATOR

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Application May 21, 1947, Serial No. 749,580

1 Claim. (Cl. 33—220)

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This invention relates to a grade pitch indicator for grade cutting machines.

It is an object of the present invention to provide a grade pitch indicator which can be placed upon the top of the grade cutting machine where it can be watched by the operator and to indicate while the machine is in operation the pitch at which the grade is being cut and to indicate to the operator any variance or departure from the grade pitch which is supposed to be maintained by the grade cutting machine.

Other objects of the present invention are to provide a grade pitch indicator which is of simple construction, inexpensive to manufacture, easy to mount on the grade cutting machine and efficient in operation.

For other objects and for a better understanding of the invention, reference may be had to the following detailed description taken in connection with the accompanying drawing, in which

Fig. 1 is a rear elevational view of a grade cutting machine in operation and with the grade indicator mounted upon the same to indicate the pitch or the grade being cut by the machine.

Fig. 2 is an enlarged front elevational view of the grade pitch indicator.

Fig. 3 is a cross-sectional view taken on line 3—3 of Fig. 2.

Fig. 4 is an end elevational view of the support for the weight indicating element.

Fig. 5 is a top plan view of the support.

Referring now to the figures, 10 represents a grading machine or tractor having a scraper blade 11 attached thereto and a rear wheel support 12. This grade cutting machine, as shown in Fig. 1, is operating upon the ground to cut a grade and on the top of the same there is mounted my grade pitch indicator 13 embodying the features of the present invention. This indicator 13 includes a main support or frame 14 adapted to be attached to the top of the grade cutting machine by bolts 15 extending downwardly through feet portions or flanges 16 on the bottom of the support 14 and into the top of the grade cutting machine. Along the bottom of the support is an arcuate shaped portion or web 17 having a measuring scale 18 thereon with the zero indication at the center and with negative and positive indications extending respectively from opposite sides of the zero indication to indicate the angle which the machine is operating and the grade being cut by the scraper blade 11.

At the top of the support, there is provided directly above the zero indication a hub having an opening 19 through which extends a bolt or pin 21 on which is pivoted as indicated at 22 a pendulum or arm 23 having a ball weight 24 and a pointing portion 25. The pointing portion 25 extends over the scale 18 and will indicate the

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degrees at which the scraper blade is tilted. The shaft 22 has a head portion 26 adapted to retain a spring 27 which reacts upon the upper end of the pendulum 23 to retain the same against axial displacement upon the bolt 21. The tension of the spring 27 can be adjusted by turning a wing nut 28.

In operation the ball weight 24 will cause the pendulum 23 to swing and to give an indication to the operator of the grade cutting machine, the grade which is being cut. If the operator has departed from the desired grade an adjustment will be made of the scraper blade upon the machine to bring the machine to the proper grade and the pendulum to the proper position so that it indicates the true grade angle upon the scale 18.

While various changes may be made in the detailed construction, it shall be understood that such changes shall be within the spirit and scope of the present invention as defined by the appended claim.

I claim:

In a level indicator, the combination which comprises a vertically disposed substantially open frame having end posts with outwardly extended foot flanges with bolt holes therein, the upper ends of said posts connected by inwardly and upwardly sloping arms carrying a horizontally disposed centrally positioned hub, and the lower ends of said posts connected by an arcuate intermediate web, the upper inner edge of which is on a radius described from the center of the hub of the upwardly sloping arms, said web having a graduated scale thereon, a pin having a head on the forward end and with the opposite end threaded carried by the hub, an arm having a ball weight on the lower end and provided with a pointer below the weight, pivotally mounted on said pin, a spring between the head of the pin and arm frictionally holding the arm to restrict swinging thereof, and a thumb nut on the opposite end of the pin for adjusting the tension on the spring.

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