M. WEISENBACK.

SPEED INDICATOR.

APPLICATION FILED OCT. 27, 1919.

1,355,440.

Patented Oct. 12, 1920.

Fig. 1.

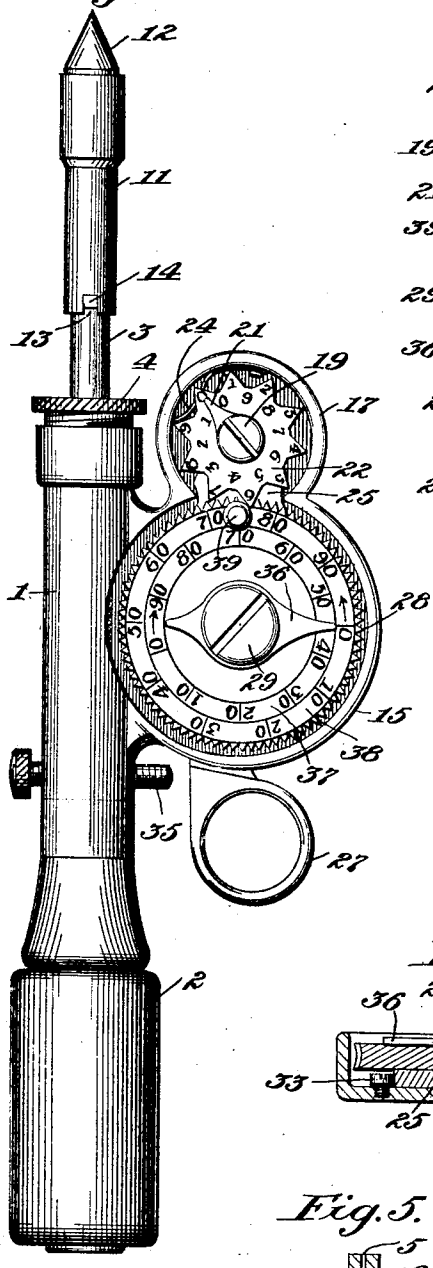


Fig. 3.

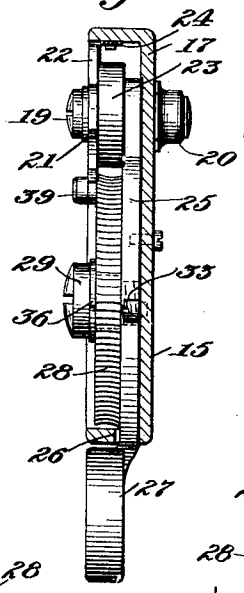


Fig. 2.

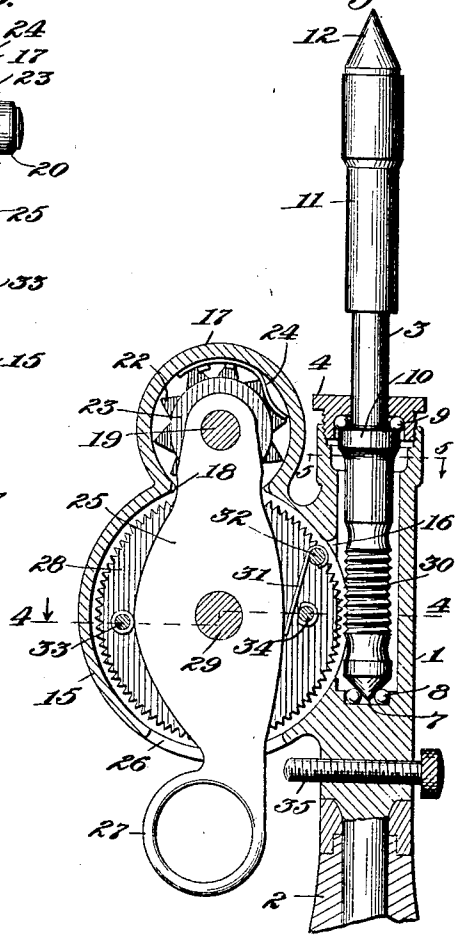


Fig. 4.

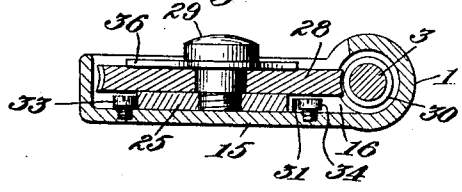
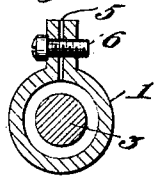


Fig. 5.



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UNITED STATES PATENT OFFICE.

MAJOR WEISENBACK, OF REEDVILLE, OREGON.

SPEED-INDICATOR.

1,355,440. Specification of Letters Patent. Patented Oct. 12, 1920.

Application filed October 27, 1919. Serial No. 333,601.

To all whom it may concern:

Be it known that I, MAJOR WEISENBACK, a citizen of the United States, and residing at Reedville, in the county of Washington and State of Oregon, have invented certain new and useful Improvements in Speed-Indicators, of which the following is a specification.

This invention relates to a tool for determining the speed of a rotating object, such as a wheel or shaft, and seeks to provide a device of simple construction and compact form which may be easily held in the hand and applied to the object the speed of which is to be tested.

The invention seeks to provide a device for the stated purpose which will be efficient and durable and accurate.

The invention is illustrated in the accompanying drawings forming a part of this application, and wherein corresponding numerals are used to indicate corresponding parts in each of the several views.

In the drawings

Figure 1 is a front elevation of the improved tool.

Fig. 2 is a rear view of the tool, the casing being in section.

Fig. 3 is an edge view of the casing with parts in section.

Fig. 4 is a section on the line 4—4 of Fig. 2; and

Fig. 5 is a section on the line 5—5 of Fig. 2.

The body 1 is in the form of a sleeve or tube having one closed end from which a handle 2 projects in axial alinement therewith. A spindle 3 extends through the open end of the tubular body and a cap 4 is fitted in said open end around the spindle, said open end being split as shown at 5, and fitted with a set screw 6, whereby it may be clamped firmly about the cap to prevent accidental release of the same. The inner end of the spindle is tapered or conical, as shown at 7, to run on bearing balls 8 held in a cup or seat formed in the end of the bore of the body, and similar balls 9 are fitted around the spindle between an annular shoulder 10 thereon and the inner surface of the cap 4 as clearly shown in Fig. 2, the spindle being thus mounted for free rotation. On the outer end of the spindle is mounted a socket 11 carrying an engaging point 12, to be held in frictional engagement with the rotating object the speed of which is to be determined. As shown most clearly in Fig. 1, the socket is constructed with a notch 13 to engage a lug 14 on the spindle whereby the rotation of the socket will be imparted directly to the spindle. The socket is obviously removable so that a socket having an engaging point of the most suitable form may be used.

A casing 15 extends laterally from the tubular body 1 and is preferably integral therewith, the said casing being of flat circular form and communicating with the bore of the body through an opening 16 in the side thereof. The casing 15 is constructed with a flat circular offset 17 disposed adjacent the cap 4 and the wall of the casing is provided with an opening 18 through which the chambers of the casing and the counting wheels are put in communication. A post 19 is disposed at the center of the offset 17 and is secured in position by a nut 20 on its rear end turned home against the back or bottom of the offset. A pointer 21 is carried by the upper or front end of the post and a counting wheel 22 is mounted on the post for rotation about the same immediately under the pointer, the hub 23 of said wheel being constantly under pressure from the retarding spring 24, which is secured upon the inner peripheral wall of the offset and has its free end bearing upon said hub, as clearly shown, whereby excessive movement of the counting wheel will be prevented. A lever 25 is fulcrumed at one end upon the post 19 and extends therefrom through the opening 18 and through a diametrically opposite slot 26 in the wall of the casing, the free end of the lever being formed into a finger hold or ring 27. A tally worm wheel 28 is mounted for rotation upon a post 29 carried by the lever 25 and said worm wheel is adapted to mesh with the worm 30 on the spindle 3. A spring 31 mounted upon a stud 32, on the back wall of the casing, bears upon the lever, as shown in Fig. 2, and tends to hold the lever constantly outward, whereby the worm wheel will be out of mesh with the worm. A stud 33 on the casing limits the outward movement of the lever under the influence of the spring 31, and a stud 34 on the casing adjacent the stud 32 receives the free end of the spring when it is flexed, so that excessive bending and resultant breaking of the spring will be avoided. A set screw 35 is mounted diametrically in the closed end of the body and is adjustable toward and

from the lever 25 to limit the operative movement of the same and prevent the worm wheel being brought against the worm to such an extent or with such force as to act as a brake and prevent free rotation of the worm and spindle and thereby detract from the accuracy of the instrument.

A double pointer 36 is carried by the post 39 above or in front of the tally wheel 28 and upon the face of said wheel are concentric circular scales 37 and 38, with which the opposite ends of the pointer 36 respectively coöperate. The counting or tally wheel 22 is also provided on its face with two circles of numerals with which the pointer 21 cooperates, the scales or numerals on each wheel being arranged to progress in opposite directions from the zero point so that a correct reading of the speed may be had whether the rotation be in one or the opposite direction. A pin or stud 39 on the wheel 28, at the end of each complete rotation of said wheel, engages a point or tooth of the wheel 22 and moves the latter a distance equal to one degree of the scale thereon.

The operation is thought to be clear from the foregoing description. The engaging point 12 is held in frictional engagement with the wheel or shaft, the speed of which is to be ascertained, and the ring 27 drawn toward the handle, thereby bringing the worm wheel into mesh with the worm. The spindle will be rotated by the object to which the point 12 is applied and this rotation will be transmitted to the worm wheel which will be given one complete revolution every time the object under observation makes one hundred revolutions and ten revolutions of the wheel 28 will effect one complete revolution of the wheel 22 so that by the aid of a timepiece and observing the state of the tally or counting wheels at the end of one minute or other fixed period of time, the speed of the object will become known.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent of the United States, is—

The combination of a tubular body, a spindle mounted for rotation therein, a casing projecting laterally from the body and integral therewith, a lever fulcrumed at one end in the casing and extending through and beyond the same, a counting wheel mounted concentric with the fulcrum of the lever, a relatively fixed pointer coöperating with said counting wheel, a tally wheel carried by the lever to be driven by the spindle, and means on the tally wheel to periodically actuate the counting wheel.

MAJOR WEISENBACK.