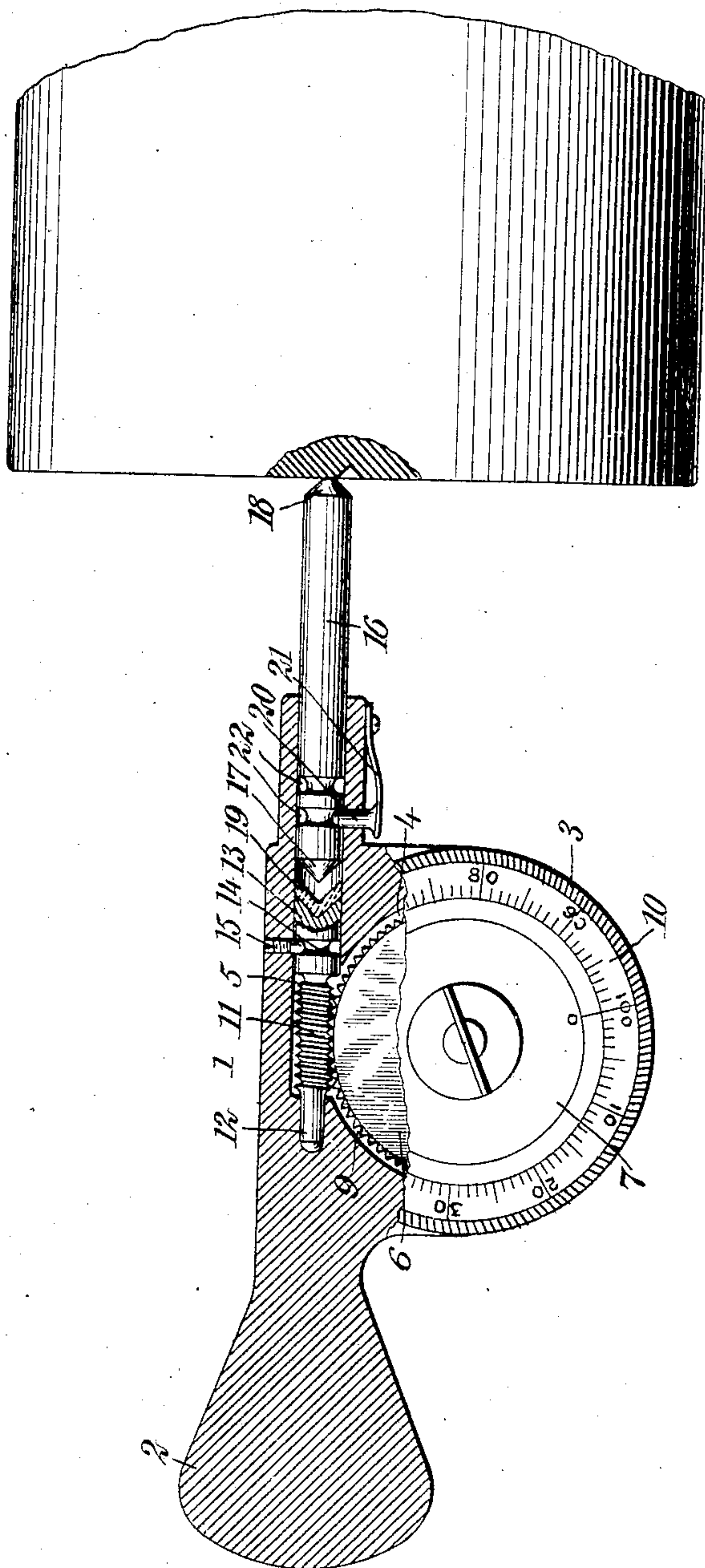


No. 843,361.

PATENTED FEB. 5, 1907.

W. C. PLANK.
SPEED INDICATOR.
APPLICATION FILED AUG. 1, 1906.



WITNESSES
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UNITED STATES PATENT OFFICE.

WILLIAM CHARLES PLANK, OF LAS FLORES, MEXICO.

SPEED-INDICATOR.

No. 843,361.

Specification of Letters Patent.

Patented Feb. 5, 1907.

Application filed August 1, 1906. Serial No. 328,731.

To all whom it may concern:

Be it known that I, WILLIAM CHARLES PLANK, a citizen of the United States, and a resident of Las Flores, B. C., Mexico, have
5 invented a new and Improved Speed-Indicator, of which the following is a full, clear, and exact description.

This invention is an improvement in speed-indicators, designed to facilitate the taking
10 of the speed of rotating shafts.

Considerable difficulty has been heretofore experienced in taking the speed of shafts with indicators of ordinary construction, due to the fact that the spindle of the indicator
15 could not be engaged with the shaft-center at the exact moment the seconds-hand of a watch employed in timing its application registers with a seconds-mark on the watch-dial. This difficulty is more pronounced in
20 using an indicator in close quarters and on high-speed shafts with small center-marks, often requiring a resetting of the indicator when used under such conditions.

The object of my invention is to overcome
25 this difficulty by producing an indicator in which there will be no danger of the spindle communicating its movement to the indicator-dial until such time as desired by the user. This is accomplished by making the
30 spindle in two sections, which are adapted to be automatically connected by pressing the indicator forward.

The figure of the drawing represents one embodiment of my invention, partly in section, forming a part of this specification, and on which like reference characters are used to designate the same part in the description.

The numeral 1 indicates the body portion of the indicator, having a handle 2 and a circular offset box 3 at one side thereof, providing a chamber 4, leading into a longitudinal bore 5 at the forward end of the indicator. Journaled in the chamber 4 is a worm-wheel 6, made fast to an indicator-disk 7, carrying
40 the zero-mark, and having usually the same number of teeth 9 as there are graduations on a dial 10, each tooth and graduation corresponding to one revolution of the shaft, one hundred teeth and graduations being
50 indicated in the present case.

Intermeshing with the worm-gear 6 is a worm 11, journaled in a recess in the rear end of the bore 5 by means of a reduced end 12 and at its opposite end fitting the bore by
55 an enlargement 13, said enlargement 13 having a groove 14 passing about the circumfer-

ence, in which is engaged the end of a set-screw 15, threaded transversely through the body 1, thereby preventing any longitudinal movement of the worm 11. The enlargement 13 constitutes a section of the divided
60 spindle referred to, the other section 16 of which is conical at each end, as at 17 and 18, and adapted to slide in the outer end of the bore 5. The conical end 17 is designed to
65 engage the opposed end of the section or enlargement 13, which is an exact counterpart of it, and lined with a rubber center 19, in order that when the sections are engaged the frictional contact will be sufficient to
70 positively drive the worm 11 and worm-wheel 6 as the spindle 16 rotates.

For holding the conical end 17 in and out of engagement with the rubber center 19 is a pin 20, spring-pressed by a flat spring 21,
75 said pin transversely entering the bore 5 and suitably adapted to engage either of the circumferential grooves 22 in the section 16.

In the operation of the indicator the parts are in the relation represented in the drawing, wherein the zero-marks of the disk 7
80 and dial 10 are in register. With the parts in this relation the section 16 of the spindle is free to turn without influencing the remainder of the mechanism. When the conical
85 end 18 is engaged with the center of a rotating shaft and the seconds-hand of a watch held by the operator is at the desired point, the handle 2 is instantly pressed forward, pushing the section 16 of the spindle inwardly,
90 which automatically releases the pin 20 in a well-known manner from the rear groove 22 and projects it into the groove adjacent. This forcibly contacts the conical end 17
95 with the rubber center 19, transmitting the rotation of the section 16 of the spindle to the worm and worm-wheel, and thereby indicates the revolutions of the shaft in any given time.

It is evident that various changes may be
100 made in the details of construction hereinbefore described without departing from the essential characteristics of this invention, and I consider that I am entitled to such modifications as fall within the scope of the
105 invention as claimed.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a speed-indicator, a circular box projecting at one side thereof, a worm-wheel
110 journaled in the box, a longitudinal bore

leading into the box, a worm meshing with the worm-wheel and journaled in the bore, an enlargement at one end of the worm, constituting a section of the indicator-spindle, a
5 set-screw passing into a circumferential groove of said section to prevent the longitudinal movement thereof, an outer section of the spindle freely rotatable independently of the worm, a spring-pressed pin entering a
10 circumferential groove of the outer section to hold the sections disengaged, and a second adjacent circumferential groove in the outer section adapted to be engaged by said pin to hold the sections together.

15 2. In a speed-indicator, a spindle made of two sections, a worm-wheel carried by one section, means for holding the worm-wheel against longitudinal movement, means for holding the sections disengaged, a rubber
20 center interposed between said sections, and means for holding the sections in contact with the rubber center when pushed together.

25 3. In a speed-indicator, a spindle made in two sections, means for preventing the longitudinal movement of one section, a second section adapted to be engaged therewith hav-

ing conical ends, a circumferential groove passing about said second section, a spring-pressed pin for engaging said groove to hold
30 the sections apart, and an adjacent circumferential groove in said second section for engagement with said spring-pressed pin to hold the sections together.

4. In a speed-indicator, a spindle made in
35 two sections, means for preventing the longitudinal movement of one of said sections, a rubber center carried by one of said sections, a second section conical at each end, circumferential grooves passing about said second
40 section, a spring-pressed pin entering one of said grooves for holding the sections apart, and means whereby when the sections are pressed together the spring-pressed pin enters the other of said grooves and holds the
45 sections frictionally engaged to the intermediate rubber center.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM CHARLES PLANK.

Witnesses:

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