

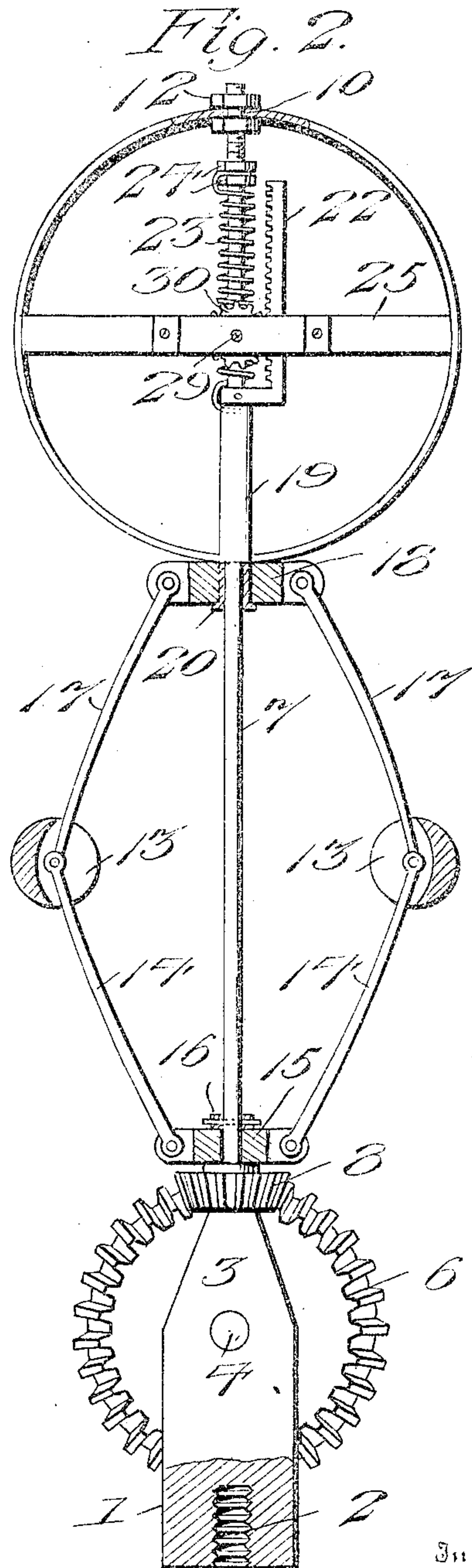
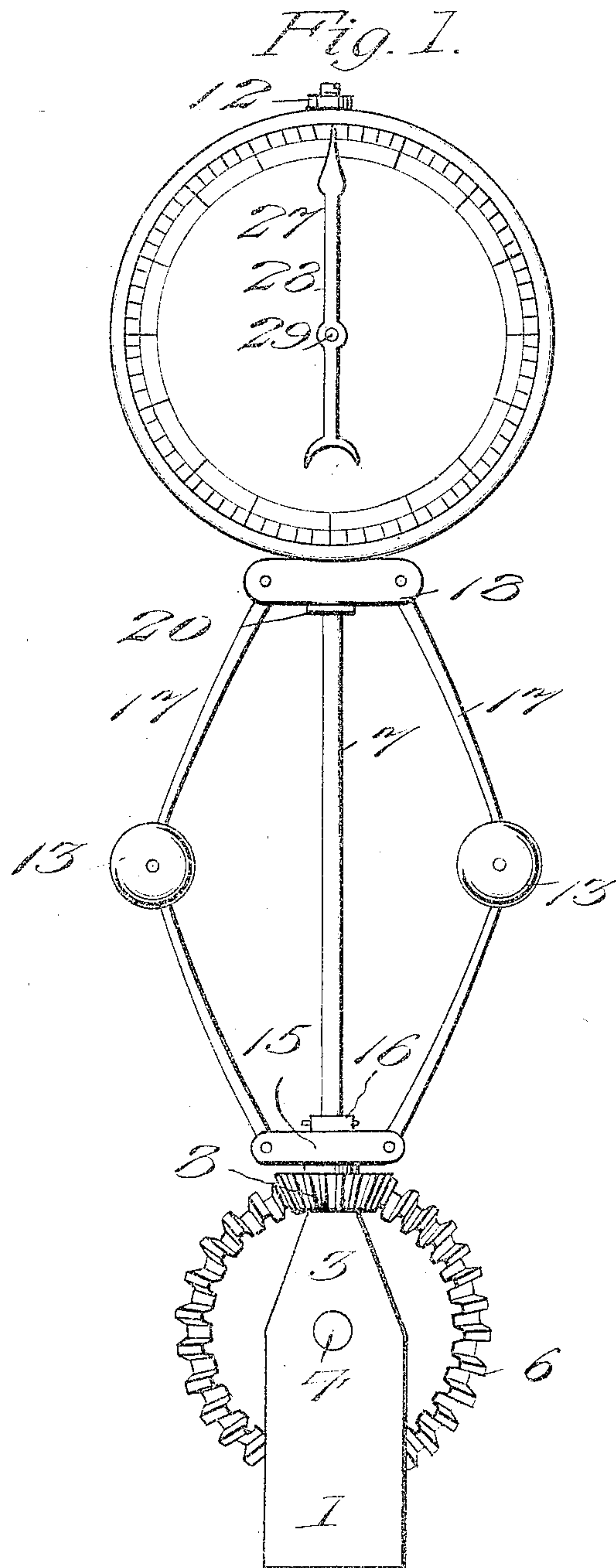
No. 818,117.

PATENTED APR. 17, 1906.

R. PLUMMER.
SPEED INDICATOR.

APPLICATION FILED APR. 27, 1905.

2 SHEETS—SHEET 1.



Witnesses
Wm. Koorth.
D. W. Gould.

Inventor
Ralph Plummer,
By *Victor J. Evans*
Attorney

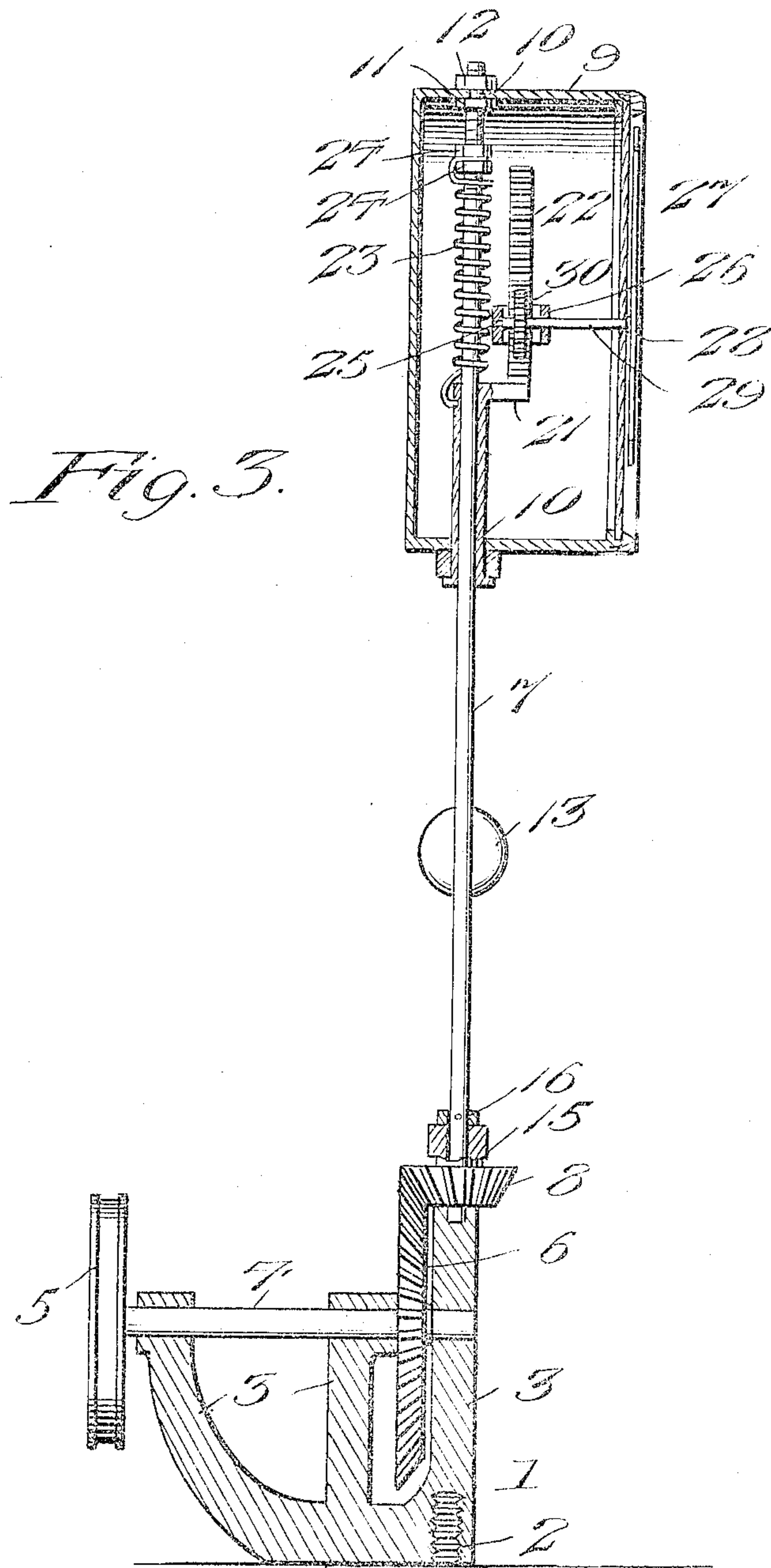
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Inventor

Ralph Plummer

Witnesses

Wm. North
D. W. Gould

By

Victor J. Evans

Attorney

UNITED STATES PATENT OFFICE.

RALPH PLUMMER, OF BARABOO, WISCONSIN.

SPEED-INDICATOR.

No. 818,117.

Specification of Letters Patent.

Patented April 17, 1906.

Application filed April 27, 1905. Serial No. 257,700.

To all whom it may concern:

Be it known that I, RALPH PLUMMER, a citizen of the United States, residing at Baraboo, in the county of Sauk and State of Wisconsin, have invented new and useful Improvements in Speed-Indicators, of which the following is a specification.

The invention relates to improvements in speed-indicators of a class designed to automatically indicate on a suitable dial the speed of operation of any particular machine.

The main object of the invention is the production of speed-indicators of the class described comprehending a single complete structure designed to be operably connected to the mechanism to be gaged, the construction including a suitable dial and pointer therefor and means operated by movement of a suitable controller to move the pointer in relation to the dial.

The invention in its preferred form will be described in connection with the following specification, reference being had to the accompanying drawings, wherein—

Figure 1 is a view in elevation of my improved speed-indicator. Fig. 2 is a similar view with the dial removed. Fig. 3 is a view in side elevation of the same, the dial-casing and controlling-sleeve being shown in section.

Referring to the drawings, wherein like numerals of reference designate like parts throughout the several views, my improved speed-indicator comprises a base 1, provided with a threaded opening 2, by which it may be secured to the base of any suitable machine desired to be gaged. The base, which is preferably an integral casting, also comprises bearing-arms 3, in which is suitably mounted a transverse shaft 4, carrying at one end a belt-pulley 5 and at the opposite end a beveled gear 6, the latter being preferably mounted intermediate two of the bearing-arms 3.

The standard 7 is fixed in the upper end of one of the bearing-arms, being provided on its lower end with a loosely-mounted beveled pinion 8, arranged to mesh with beveled gears 6, the standard rising vertically from the base, as illustrated.

9 represents the dial-casing, being a cylindrical body formed with diametrically-opposite openings 10 to permit passage there-through of the standard 7. The upper end of the standard is threaded to receive a jam-nut 11 to support the dial-casing and lock-

nut 12, engaging the standard beyond the casing to secure the parts together.

13 represents ball-weights connected by arms 14 to a transverse arm 15, revolubly mounted on the standard and connected by a suitable sleeve to the beveled pinion 8 at a vertically-adjustable collar 16, encircling said standard above the arm 15 to permit independent vertical movement of said arm. If preferred, the collar 16 may be provided with a set-screw of ordinary construction, whereby the collar may be adjusted lengthwise the standard to accommodate for a desired movement of the transverse arm 15. The weights are also connected by upwardly-extending arms 17 to a transversely-arranged block 18, positioned on the standard immediately contiguous the dial-casing 9. The construction described provides what will be hereinafter termed the "controller" mechanism and may be varied in its particular details as desired, as the specific construction of such forms no material part of the present invention.

Sleeve 19 is slidably mounted on the standard 7, having a headed end 20 to engage the lower face of the block 18, the sleeve passing through a suitable opening in said block and projecting integrally of the dial-casing through the lower standard-opening 10 thereof. At the upper end the sleeve is provided with a forwardly-projecting arm 21, from the forward end of which rises a rack 22, as clearly shown in Fig. 3. A spring 23 is coiled about the standard 7, being terminally connected to the upper end of a sleeve 19 at one end and at the opposite end secured between block-nuts 24, through the use of which latter the upper terminal of the spring may be adjusted longitudinally of the standard to vary the tension of the spring in an obvious manner. A cross-bar 25 is arranged transversely of the dial-casing. The bearing-strip 26 is secured centrally of the cross-bar 25, being centrally spaced therefrom and terminally bent toward and secured to said bar, as clearly illustrated in Fig. 2.

27 represents the dial, secured to the forward edge of the casing in any appropriate manner and bearing on its face any desired scale which will serve to indicate the speed of any particular mechanism.

28 represents the pointer, movably supported centrally of the dial, being secured on the outer end of a transverse shaft 29, bear-

ing in the dial and in the supporting-strip 26 and cross-bar 25. A pinion 30 is fixed upon the shaft 29 between the cross-bar and the supporting-strip 26 and is normally in mesh with the rack 22, as clearly illustrated in Fig. 2.

In operation power transmitted to the belt-wheel 5 from the machine desired to be gaged by any suitable belt is communicated to the beveled gear 8, and thereby to the controller described. Centrifugal operation of the controller spreads the weight 13, vertically decreasing the distance between the transverse arm 15 and the block 18, and as the frame is fixed against independent vertical movement the latter will move downwardly, drawing with it sleeve 19 and the rack 22, operating against the tension of a spring 23. The described movement of the rack rotates the pointer-shaft 29 through operation of the pinion 30, thereby moving the pointer to the proper scale-mark on the dial, thereby accurately gaging and indicating the speed of the initial mechanism. As the controller returns to normal position the spring 23 operates to move the parts to their original situation.

The structure described is simple and readily adapted for connection with any desired machine.

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

1. A speed-indicator comprising a base, a standard rising from the base, a controller supported on the standard, means carried by the base for operating the controller, a dial carrying a pointer and supported on the standard, a sleeve slidably mounted on the standard and connected with the controller, and means intermediate the sleeve and pointer to operate the latter in the movement of the controller.

2. A speed-indicator comprising a base, a shaft revolubly mounted in the base, a standard rising from the base, a controller supported on the standard, means intermediate

the shaft and controller for operating the latter in the revolution of the shaft, a dial-casing including the dial and pointer supported on the upper end of the standard, a sleeve movably connected to the controller and slidably engaging the standard, a spring adapted to normally maintain the sleeve at its upward limit of movement, a rack connected with the sleeve, and gear meshing with said rack and connected with the pointer.

3. A speed-indicator comprising a base, a shaft revolubly mounted in the base, a standard rising from the base, a controller supported on the standard, means intermediate the shaft and controller for operating the latter in the revolution of the shaft, a dial-casing including the dial and pointer supported on the upper end of the standard, a sleeve movably connected to the controller and slidably engaging the standard, a rack connected with the sleeve, and gear meshing with said rack, and connected with the pointer, and a spring terminally connected to said sleeve and to the standard.

4. A speed-indicator comprising a base, a shaft revolubly mounted in the base, a standard rising from the base, a controller supported on the standard, means intermediate the shaft and controller for operating the latter in the revolution of the shaft, a dial-casing including the dial and pointer supported on the upper end of the standard, a sleeve movably connected to the controller and slidably engaging the standard, a rack connected with the sleeve, and gear meshing with said rack, and connected with the pointer, and a spring connected at one end to the sleeve and adjustably connected at the opposite end of the standard.

In testimony whereof I affix my signature in presence of two witnesses.

RALPH PLUMMER.

Witnesses:

J. W. SODERBERG,

W. H. PLUMMER.