

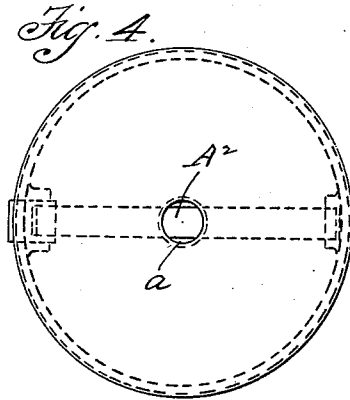
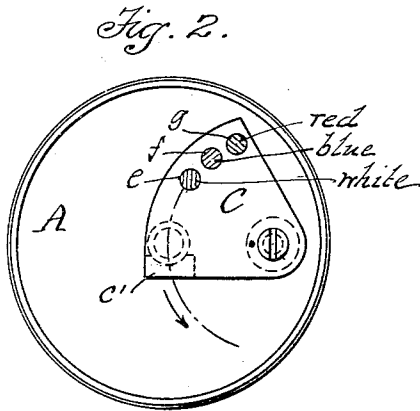
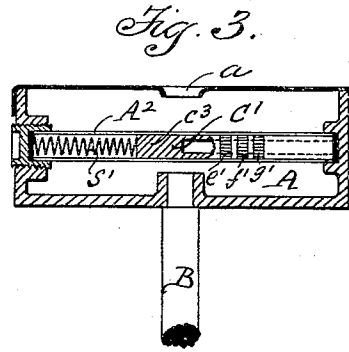
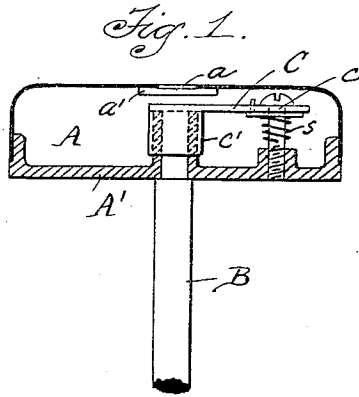
No. 620,723.

Patented Mar. 7, 1899.

D. T. SHARPLES.
SPEED INDICATOR.

(Application filed Dec. 8, 1897.)

(No Model.)



Witnesses.
Calder J. Fisher.
Rowley H. Stewart.

David T. Sharples, Inventor.

by

[Signature]

Attorney.

UNITED STATES PATENT OFFICE.

DAVID T. SHARPLES, OF ELGIN, ILLINOIS.

SPEED-INDICATOR.

SPECIFICATION forming part of Letters Patent No. 620,723, dated March 7, 1899.

Application filed December 8, 1897. Serial No. 661,173. (No model.)

To all whom it may concern:

Be it known that I, DAVID T. SHARPLES, a citizen of the United States, residing at Elgin, county of Kane, State of Illinois, have invented certain Improvements in Centrifugal Speed-Indicators, of which the following is a specification.

My invention relates to an improved speed-indicator operating by centrifugal force.

It is especially applicable to machines intended to be run at a certain speed, any variation from which should be automatically indicated.

Heretofore speed-indicators have been devised in which the centrifugal movement of a weighted member is made to operate through intermediate mechanism upon a suitable pointer. In my improved device all intermediate mechanism is dispensed with, the centrifugally-moving member being made to serve directly as an indicator.

The invention is fully described in connection with the accompanying drawings and is specifically set out in the claims.

Figure 1 is a sectional elevation of one form of my device. Fig. 2 is a plan view of the same. Figs. 3 and 4 are similar views of a modified construction embodying my invention.

Referring specifically to the construction shown in Figs. 1 and 2, A represents a casing, which, as shown, has a base-plate A', adapted to be attached to the spindle B which is to be speeded. Within this casing, which is rotated with the spindle, is mounted a movable arm or disk C, which is adapted to serve directly as an index. This index arm or member is in the present construction pivoted at a point *c* to the casing, so that its free end *c*² shall swing directly across the center of rotation of the whole device—that is, across the axis B. This free end *c*² is weighted at *c*¹, so that it will tend to move outward in the direction of the arrow under the influence of the centrifugal force developed by the rotation of the spindle. This centrifugal movement is regulated by a suitable spring, as S, the yielding of which allows the portion *c*² of the index which is normally held in the po-

sition indicated in Fig. 2 to move toward the center B as the speed of rotation is increased.

It will be readily seen that at a certain speed of rotation a certain point of the portion *c*² of the index member C will be directly at the center of rotation. If, therefore, a certain marking—as, for instance, a blue spot or circle *f*—be placed at this point, it will only be necessary to provide a sight, as *a*, at the center of the casing to enable the operator to see at a glance that the desired speed is being maintained. Other markings—as, for instance, a white one at *e* and a red one at *g*—would indicate speeds respectively less and greater than that indicated by the blue. It will be understood that any marking which is at the center of rotation will be seen as distinctly as though it were stationary notwithstanding the high speed at which the whole device may be rotated.

The tension of the spring may be varied so as to accurately regulate the movement. The sight *a* may be merely a central opening in the top of a metallic casing, as shown, preferably covered by a glass *a*¹, so as to entirely exclude dust, dirt, &c.

It is evident that the construction above described may be readily modified without departing from the spirit of my invention—for instance, as shown in Figs. 3 and 4, where the index member C' is in the form of a plunger-rod, hollow except at the head *c*³, and having a series of markings in the form of bands *e' f' g'*. This plunger, as indicated, is loosely mounted in a glass tube A², which is fixed diametrically in the main casing A, attachable to the spindle. It operates in a manner exactly similar to that previously described, moving outward centrifugally against a spring S' and showing at the center *a*² the marking which corresponds with the speed of rotation. Other modifications may be readily devised. For instance, the casing may be fixed instead of rotating with the frame which carries the centrifugal index member. Also the spindle B, instead of being rotated, may be fixed and the indicator mechanism rotated upon it. The markings on the centrifugal index member need not be arranged to swing

over the true axial center, as described, but may be made to enter the sight provided in any desired manner adapted to show directly the position of the same and thereby indicate

5 the speed of rotation.

What I claim is—

1. A speed-indicator having an index member arranged to be rotated bodily with the object to be speeded and to directly indicate by

10 its centrifugal position the speed of rotation, substantially as set forth.

2. A speed-indicator having a casing with a sight in the face thereof and an index member having a centrifugal movement into said

15 sight, substantially as set forth.

3. A speed-indicator having a casing with

a sight at the center of rotation and an index member having a centrifugal movement into said sight, substantially as described.

4. A speed-indicator comprising a rotary 20 casing with central sight, an index member mounted therein and having a mark or markings thereon adapted to swing centrifugally into said central sight, and a spring to control said centrifugal movement, substantially 25 as described.

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

DAVID T. SHARPLES.

Witnesses:

K. E. MOREY,

C. S. CARLISLE.