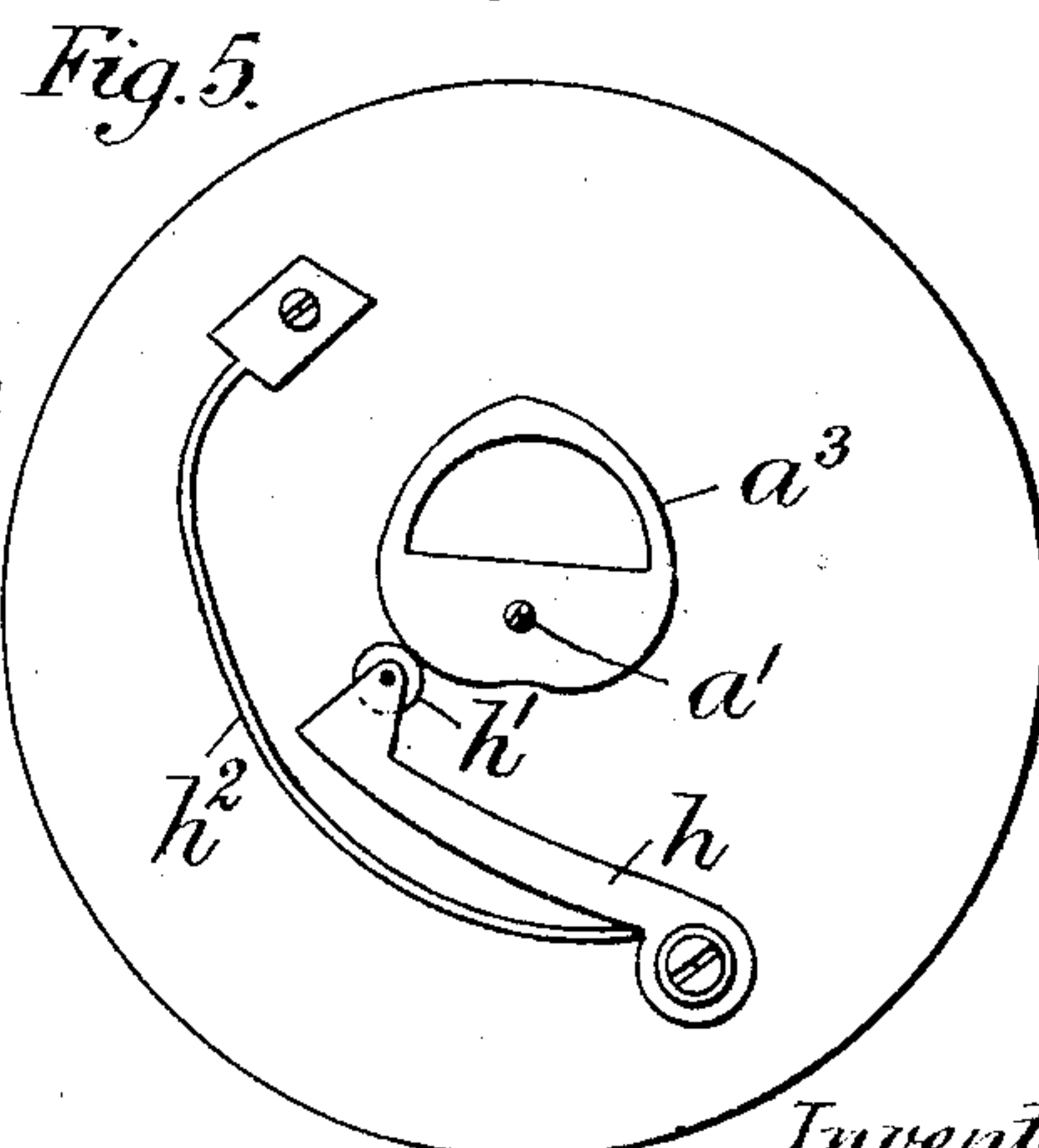
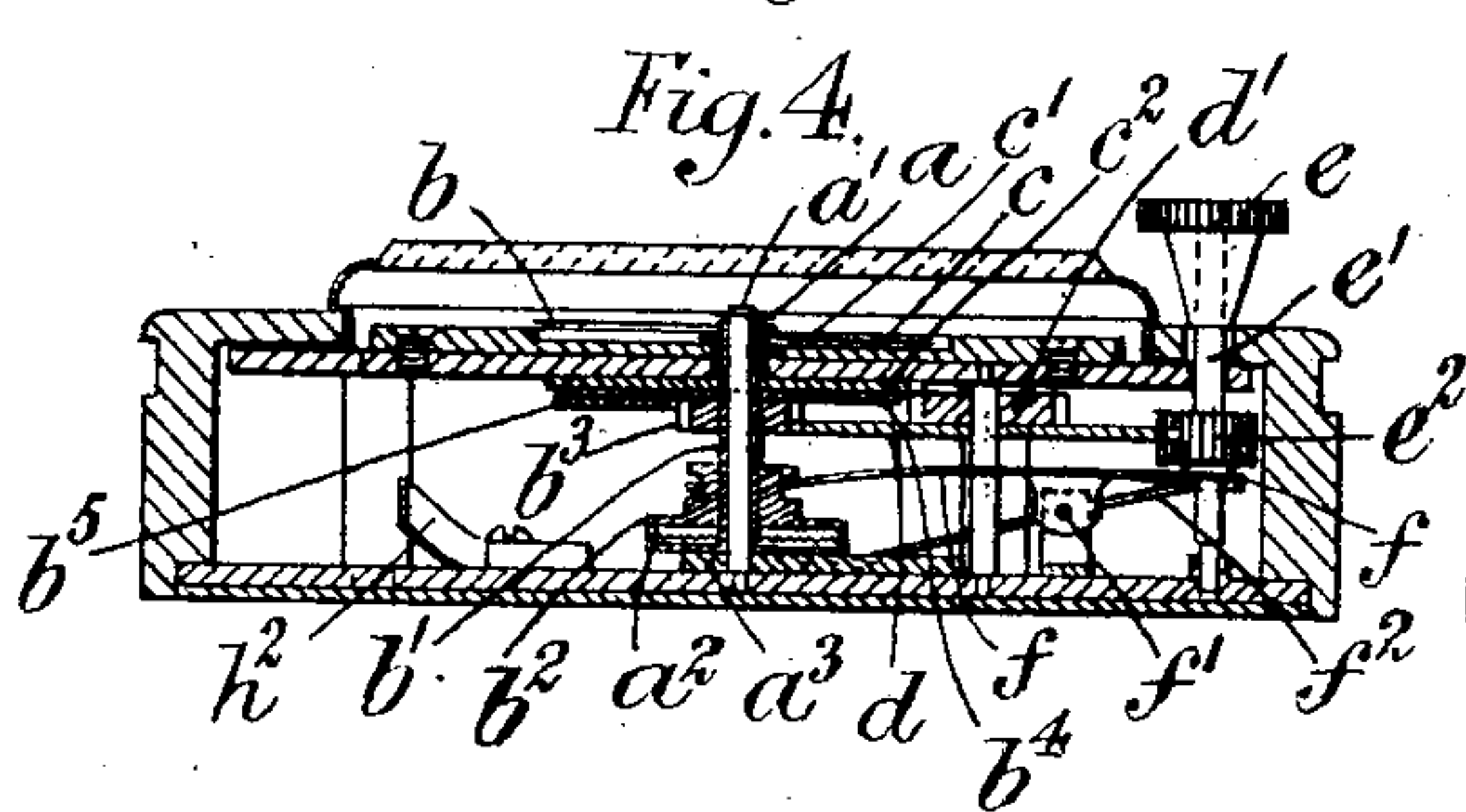
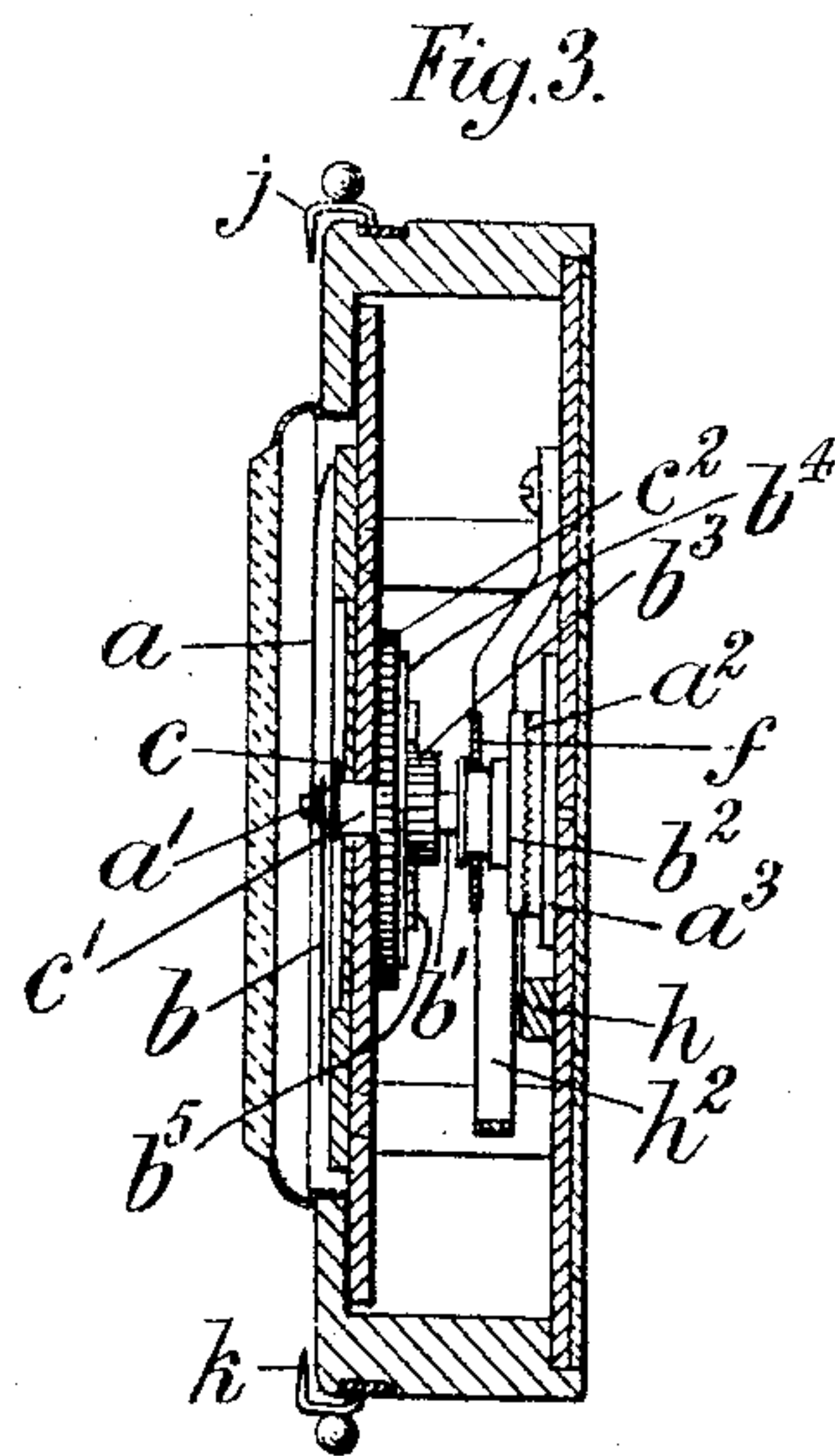
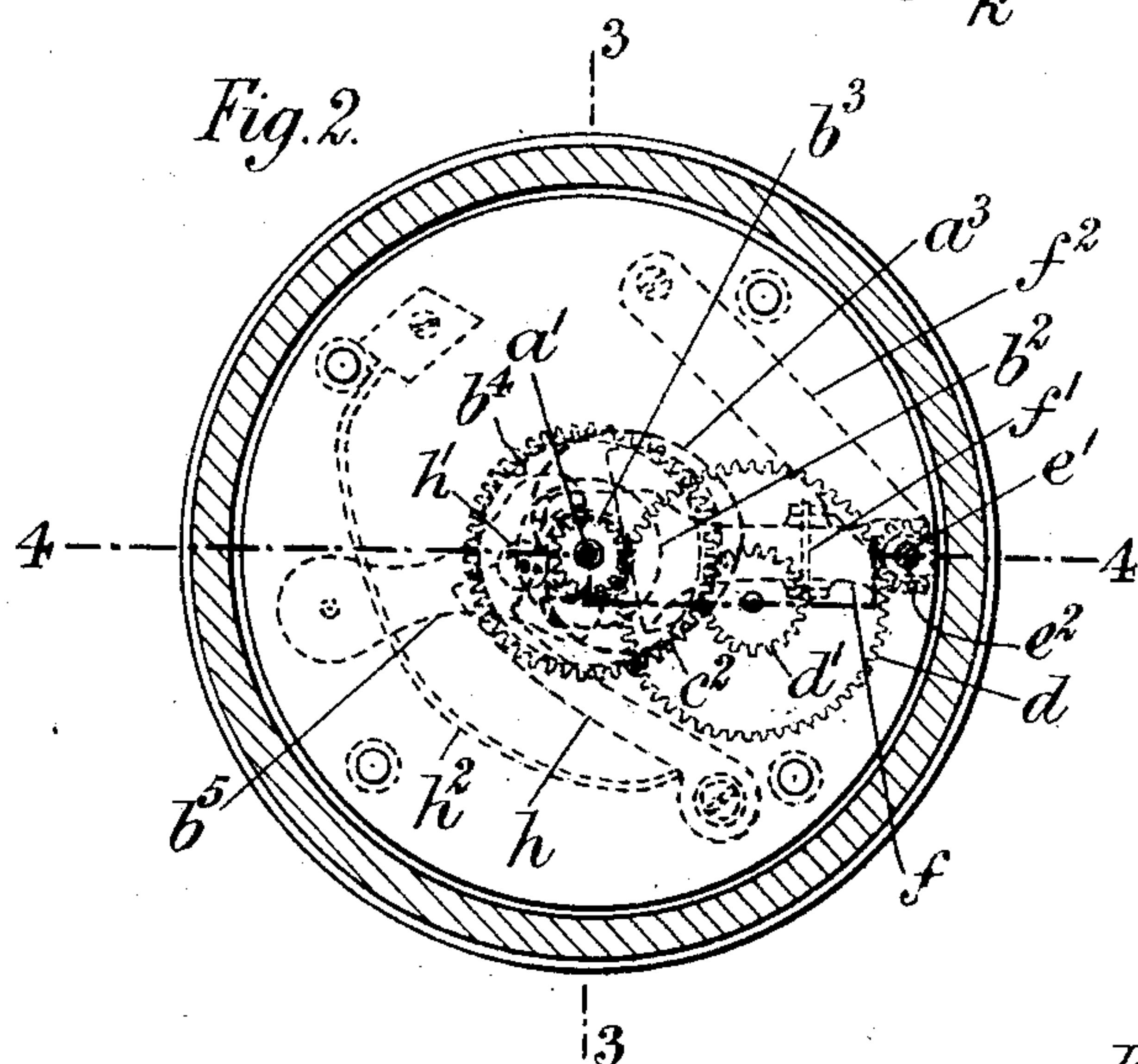
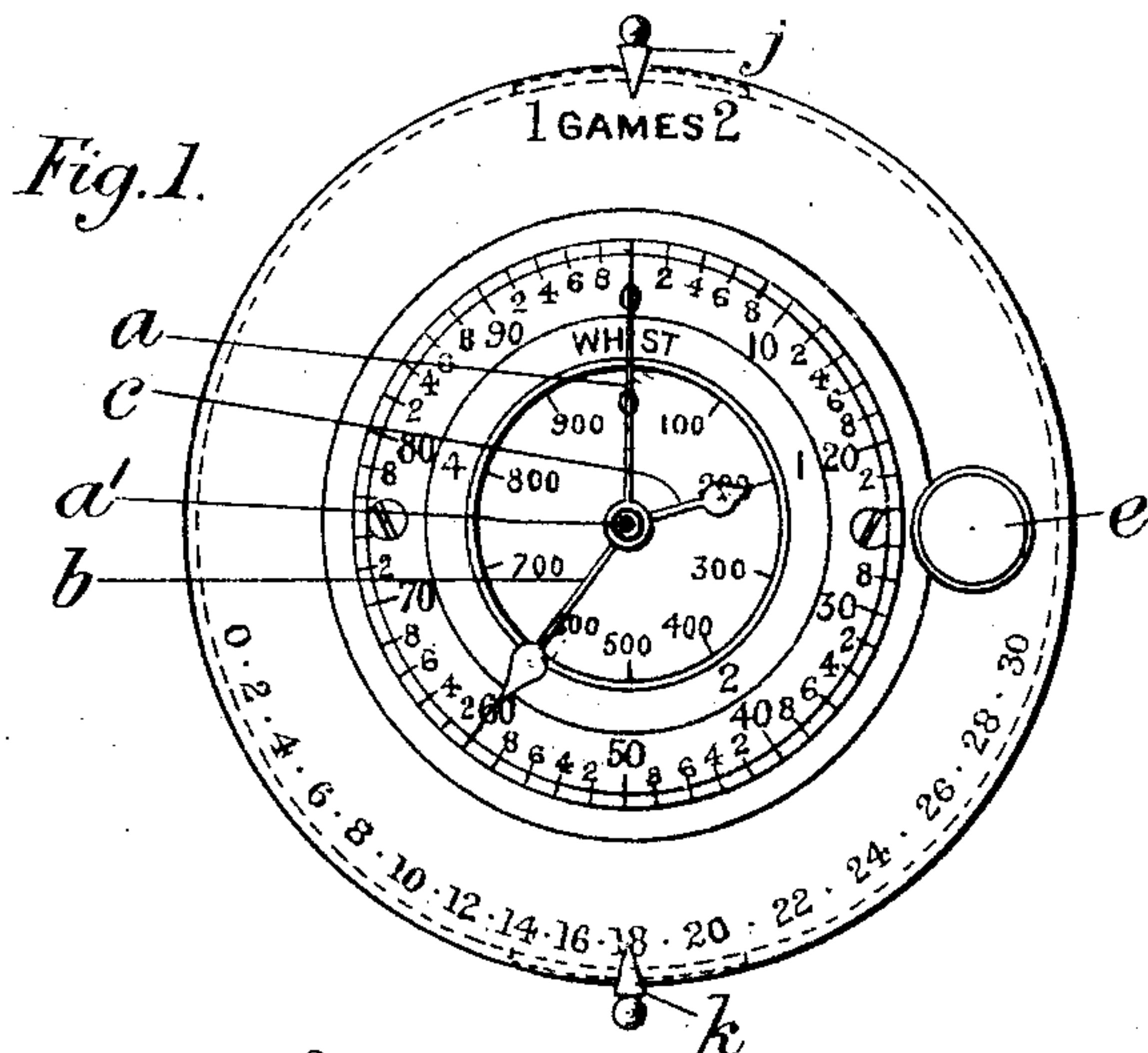


R. E. WESTON.
ADDING MACHINE.

APPLICATION FILED FEB. 29, 1904.

NO MODEL.



Witnesses
M. L. Adams
J. H. Fanning

Inventor
Richard E. Weston
by Baldwin Davidson Wright atty.

UNITED STATES PATENT OFFICE.

RICHARD EBENEZER WESTON, OF WATFORD, ENGLAND.

ADDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 765,531, dated July 19, 1904.

Application filed February 29, 1904. Serial No. 195,882. (No model.)

To all whom it may concern:

Be it known that I, RICHARD EBENEZER WESTON, gentleman, a subject of the King of Great Britain, residing at Grove Lodge, Clarendon Road, Watford, in the county of Hertford, England, have invented a certain new and useful Adding-Machine, of which the following is a specification.

This invention relates to adding-machines especially suitable for markers for games, such as "bridge." The total is shown by an indicator, which is preferably in the form of a hand revolving on a dial, but which may be a disk or cylinder or other arrangement, such as those used for revolution-counters. Generally two concentric hands are employed geared together in a similar manner to the hands of a clock, one hand recording units and the other hundreds.

According to this invention the units-indicator when driven forward is locked to a subsidiary indicator, preferably concentric with it, such indicator being provided with a spring which carries it back to zero when released without moving the units-indicator backward, so that each time the subsidiary indicator is turned from zero to some number on the dial that number is added to the total shown.

The drawings show a bridge-marker made according to this invention.

Figure 1 is a face view. Fig. 2 is a section by a plane parallel to the face; and Figs. 3 and 4 are sections on the lines 3 3 4 4, Fig. 2. Fig. 5 shows a detail.

a is the subsidiary hand, b the units-hand, and c the hundreds-hand.

The hand a is fixed to a spindle a' , which also has fixed to it a toothed disk a^2 and a heart-shaped cam a^3 , Fig. 5. The hand b is fixed to a sleeve b' on the spindle a' .

b^2 is a toothed disk turning with the sleeve b' , but free to move along it. This disk normally engages with the disk a^2 , the two disks thus forming a clutch.

b^3 is a pinion fixed to the sleeve b' and gearing with a wheel d , which is driven by a pinion e^2 , fixed to a spindle e' , which can be turned by a handle in the form of the thumb-nut e .

f is a lever pivoted at f' and forked at its

two ends to embrace the spindle e' and engage with a groove in the stem of the disk b^2 .

f^2 is a spring which presses the lever f against the pinion e^2 .

h is a lever carrying a roller h' , which is pressed by the spring h^2 against the heart-shaped cam a^3 .

b^4 is a disk fixed to the sleeve b' , and b^5 is a spring pressing it upward, thus acting as a brake to the gearing and preventing backlash.

When the nut e is turned, it drives the pinion b^3 , (through the pinion e^2 and wheel d), and the hands a and b are turned together through the same angle, while the lever h is turned against its spring h^2 by the heart-shaped cam a^3 . When the nut e is pressed downward against the spring f^2 , the lever f lifts the disk b^2 out of engagement with the disk a^2 , so freeing the latter, whereupon the pressure of the roller h' upon the cam a^3 turns the hand a back to zero, the hand b remaining stationary.

The hand c is fixed to a sleeve c' on the sleeve b' and to which a wheel c^2 is fixed. This wheel gears with a pinion d' , fixed to the wheel d .

j and k are pointers for scoring the games tricks, respectively.

What I claim is—

1. The combination of an indicator, a subsidiary indicator, a handle free to rotate and to move endwise, gearing connecting the handle to the first indicator and transmitting its rotary motion in either direction to it, a clutch locking the two indicators together and mechanism operated by the endwise movement of the handle for releasing the clutch.

2. The combination of an indicator, a sleeve fixed to it, a handle movable axially, a pinion fixed to the handle, a train of gearing connecting the pinion to the sleeve, a subsidiary indicator, a spindle carrying it and working in the sleeve, a clutch one member of which is mounted on the sleeve and the other on the spindle, a lever turned by the axial movement of the handle and operating the clutch and a spring tending to turn the subsidiary indicator backward.

3. The combination of an indicator, a sleeve
fixed to it, a handle movable axially, a pinion
fixed to the handle, a train of gearing con-
necting the pinion to the sleeve, a subsidiary
5 indicator, a spindle carrying it and working
in the sleeve, a clutch one member of which
is mounted on the sleeve and the other on the
spindle, a lever turned by the axial move-

ment of the handle and operating the clutch,
a heart-shaped cam fixed to the spindle, a le- 10
ver bearing against the cam, and a spring op-
erating the lever.

RICHARD EBENEZER WESTON.

Witnesses:

EDWARD CARPMAEL,
ROBERT B. RAUSFORD.