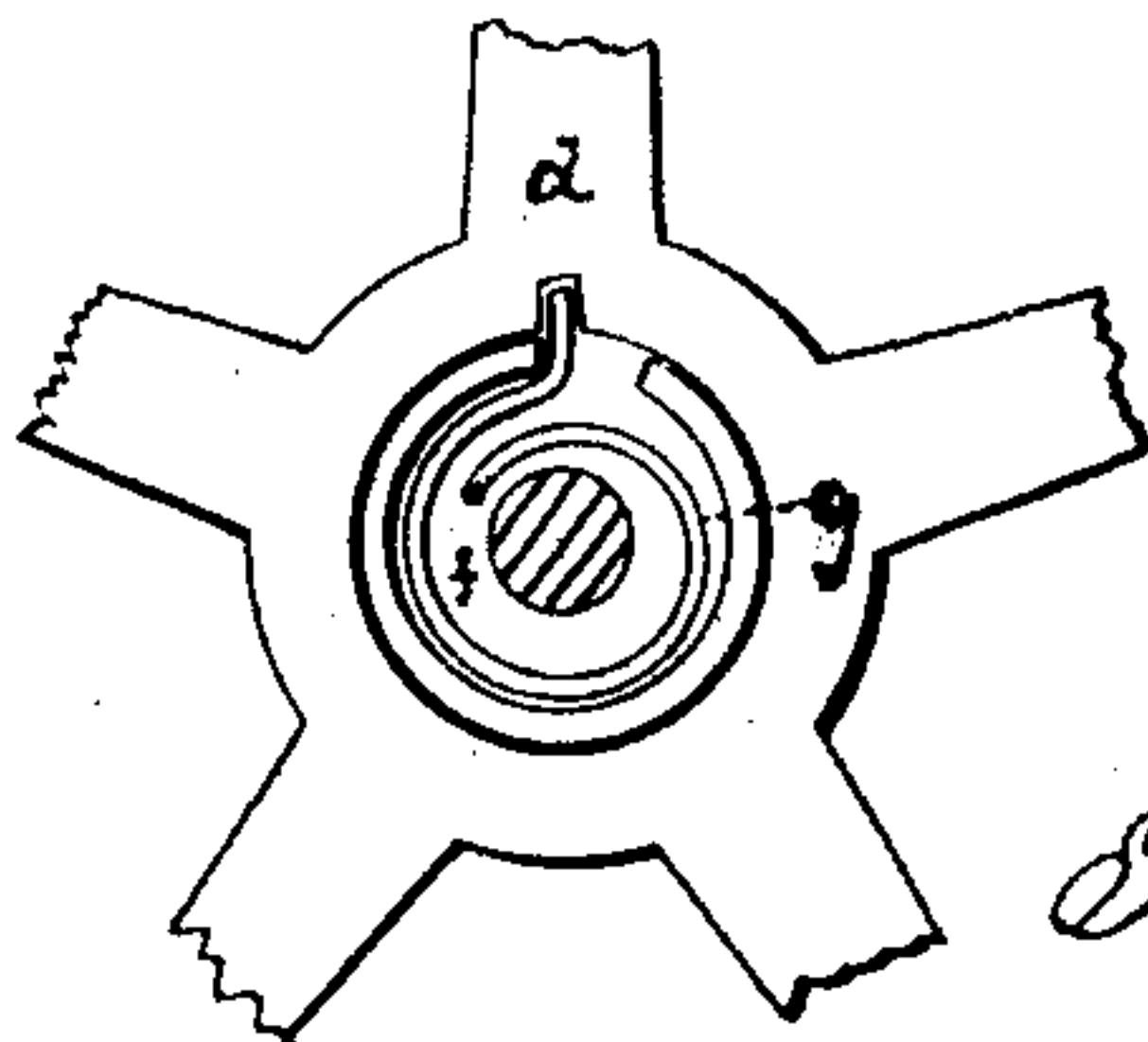
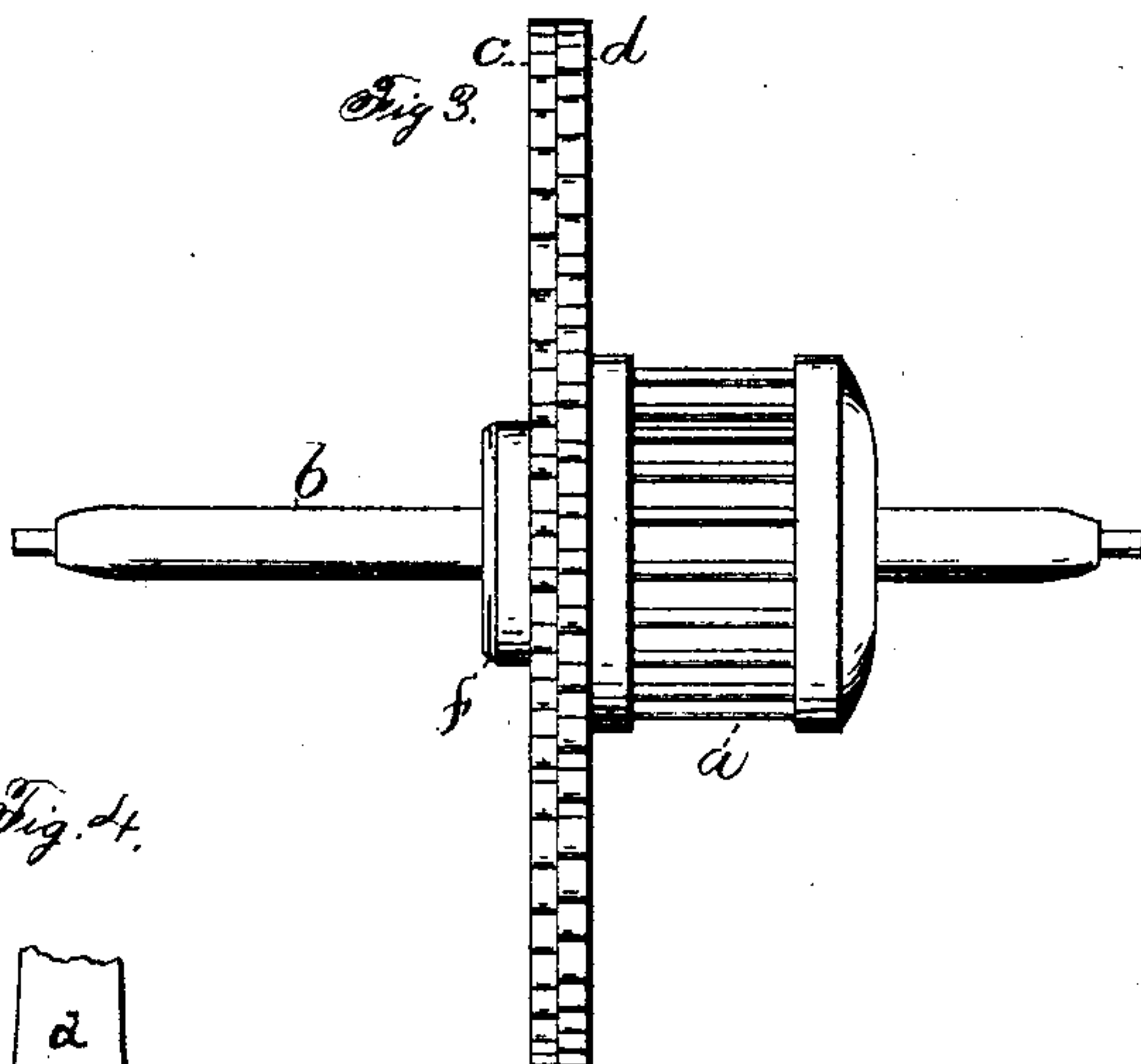
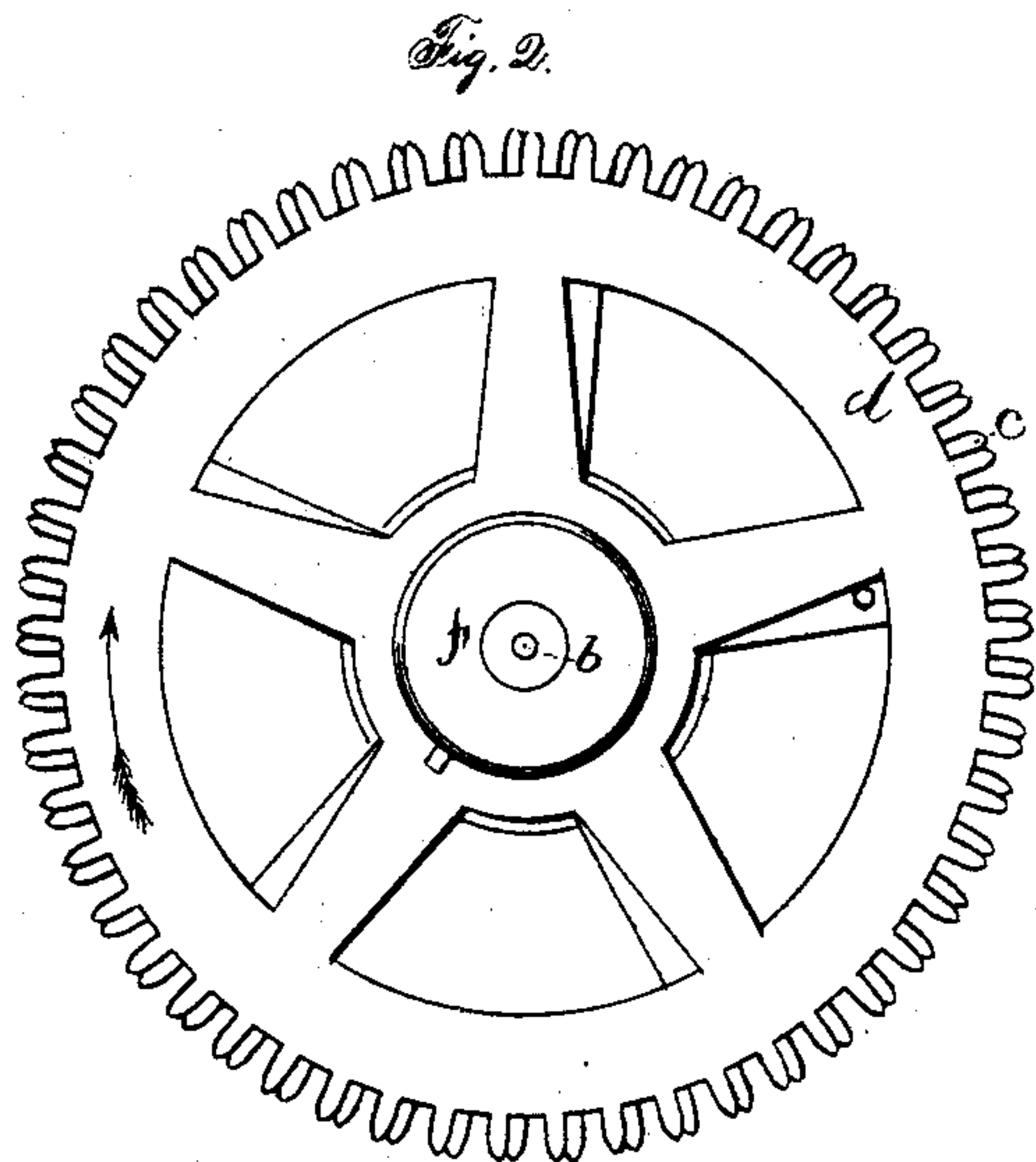
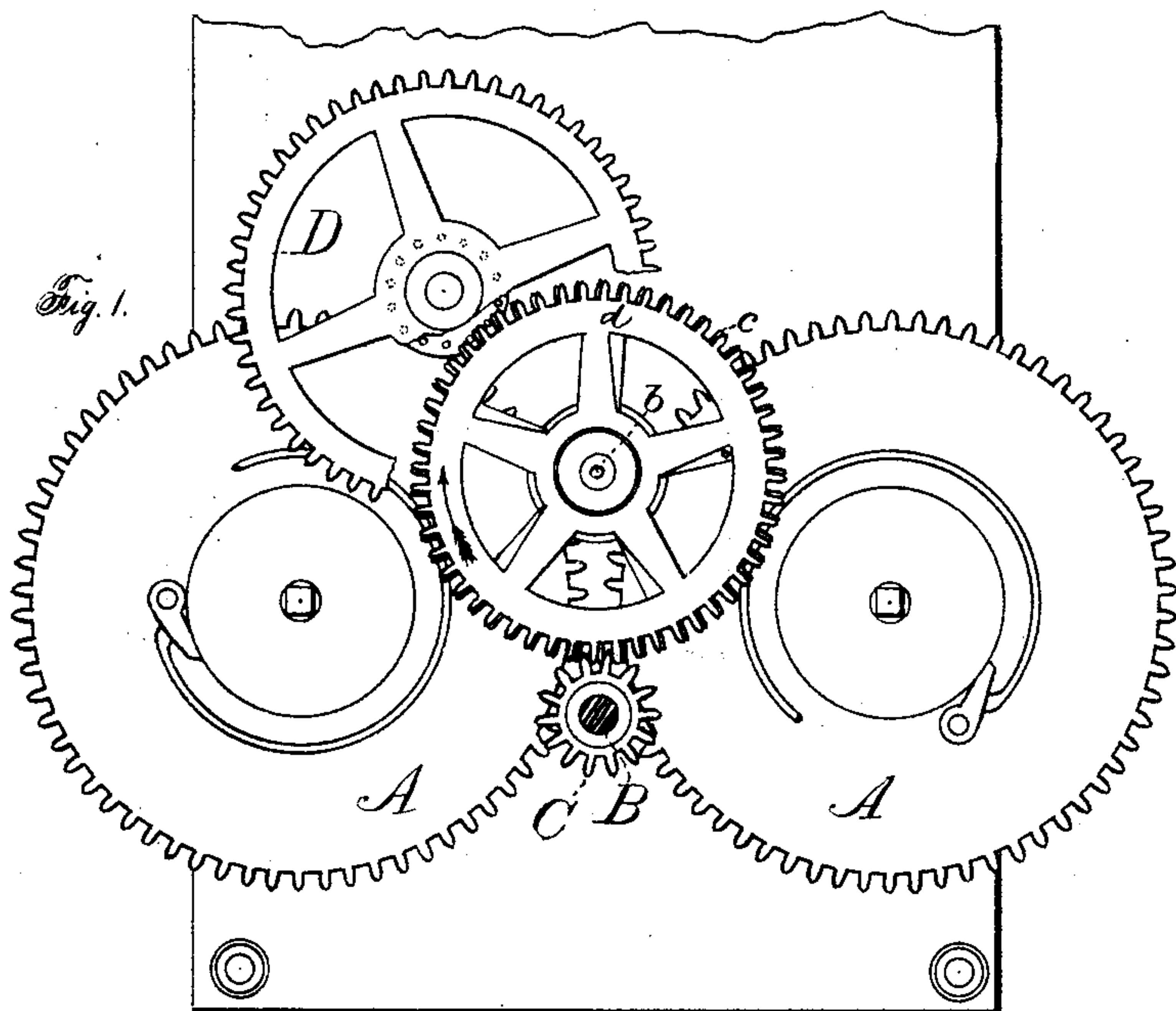


(Model.)

B. B. LEWIS.
CLOCK MOVEMENT.

No. 252,588.

Patented Jan. 17, 1882.



Witnesses.
John Edwards Jr.
Seymour L. Burr

Inventor
Benjamin B. Lewis
By James Shepard.
att'y

UNITED STATES PATENT OFFICE.

BENJAMIN B. LEWIS, OF BRISTOL, CONNECTICUT.

CLOCK-MOVEMENT.

SPECIFICATION forming part of Letters Patent No. 252,588, dated January 17, 1882.

Application filed October 24, 1881. (Model.)

To all whom it may concern:

Be it known that I, BENJAMIN B. LEWIS, of Bristol, in the county of Hartford and State of Connecticut, have invented certain new and
5 useful Improvements in Clocks, of which the following is a specification.

My invention relates to improvements in clocks in which the wheel for driving the center shaft is doubled and one part is forced forward by a light spring to take up all the backlash; and the object of my invention is to prevent any "drop" of the hands. I attain this object by the mechanism illustrated in the accompanying drawings, in which—

15 Figure 1 is a front view of parts of a clock-train; Fig. 2, an enlarged front view of the double wheel; Fig. 3, a side view of the same; and Fig. 4, a rear view of the middle portion of one part of said double wheel, and a sectional view of the shaft, taken on a line which passes between the two halves or parts of said wheel.

25 A A designate the two main wheels of a clock, which in the present instance are designed to be driven by weights. The front movement-plate is removed in order to better show the wheels. The teeth of wheels A A mesh into a pinion, *a*, upon the shaft *b*, said pinion being hid from sight in Fig. 1 by the
30 double wheel *c d*. Of this double wheel the part *c* is an ordinary toothed wheel, rigidly mounted on the shaft *b*, so as to move with it. The part *d* is substantially the same, and is provided with the same number of the same
35 shaped teeth; but instead of being secured rigidly to the shaft *b* it is loosely mounted thereon within certain limits—that is, so as to have an independent but limited movement on its axis. The recessed collet *f* is rigidly
40 mounted on the shaft *b*, and is provided with a tenon that forms the bearing for the part *b* of the double wheel. The recess in the collet is provided with a light scroll-spring, *g*, (see Fig. 4,) one end of which spring is made fast
45 to the collet *f*, and the other end lies in a notch in the wheel or part *d*, thereby virtually securing said spring to said part *d*. The tenon and walls of the recess in the collet *f* are cut away for a short distance on one side, as shown
50 in Fig. 4, to allow the end of the spring to pass out of the recess into the wheel *d*, and to allow play of that end of the spring when the part *d* makes a fraction of a revolution on its axis. I prefer to place a stop, *h*, in the part *c*,
55 to limit the revolution of the part *d*; but, if de-

sired, the side of the cut-away portion, in connection with the end of the spring *g*, may be made to serve the same purpose. The double wheel *c d*, thus constructed and mounted on the shaft *b*, will have the teeth of the part *d* 60 stand a little forward of the teeth of the part *c*, as shown most clearly in Fig. 2. Said wheel revolves in the direction indicated by the dart in Figs. 1 and 2. The spring has a constant tendency to keep the teeth in said relative po- 65 sition, thereby virtually making the teeth of the double wheel wider and the space between said teeth narrower than they are in either part when separately considered, and at the same time the spring renders these com- 70 pound teeth elastic.

B designates the center shaft, which carries the ordinary minute-hand, and C designates the center pinion, by which said shaft is driven. The elastic teeth of the double wheel mesh into 75 this pinion C to drive it. If it is desired to have this double wheel also drive the remainder of the train, the next wheel, D, of which is represented in Fig. 1, the diameter of the needles, or the teeth of the pinion into which the 80 double wheel meshes, must not be greater than the thickness of the teeth of the pinion C, and if not, the compound teeth of the double wheel will always fill the space between the teeth of pinion C, so that there can be no backlash, 85 and consequently the minute-hand will always be held properly in place.

This improvement is more especially adapted for large clocks, the hands of which are oftentimes so heavy as to drop forward in descend- 90 ing in case there is any backlash of the center pinion. By my invention a heavy pointer will have no drop, and consequently will indicate the time correctly both when ascending and descending. 95

I have not herein represented the whole train, because I consider it unnecessary.

So long as the double wheel and center pinion are constructed substantially as herein shown and described, the other parts may be 100 of any ordinary construction.

I claim as my invention—

The combination of the center pinion with the double wheel and spring for acting upon one part of said wheel, substantially as de- 105 scribed, and for the purpose specified.

BENJAMIN B. LEWIS.

Witnesses:

M. M. WOODFORD,
C. H. PLUMB.