

(Model.)

2 Sheets—Sheet 1.

L. F. PORTEBOIS.
CLOCK WINDING MECHANISM.

No. 304,234.

Patented Aug. 26, 1884.

FIG. 1.

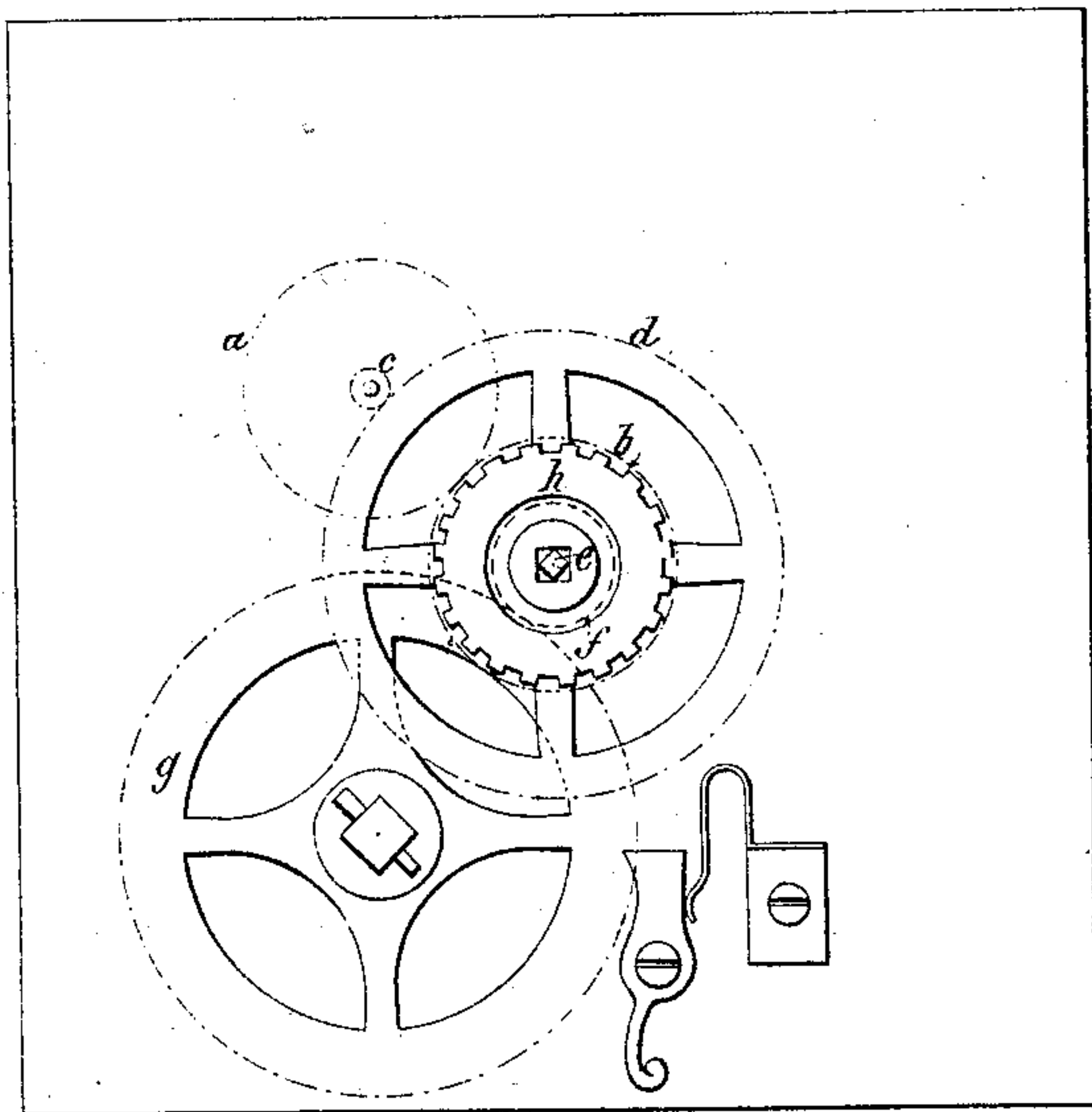


FIG. 2.

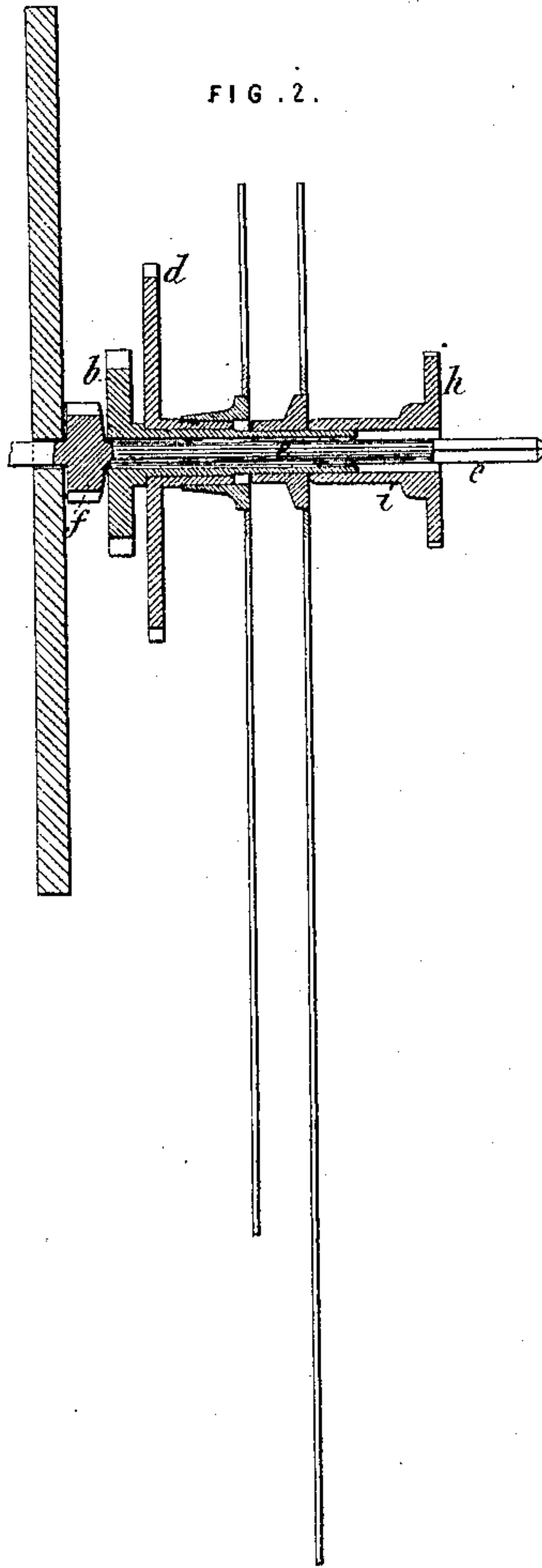
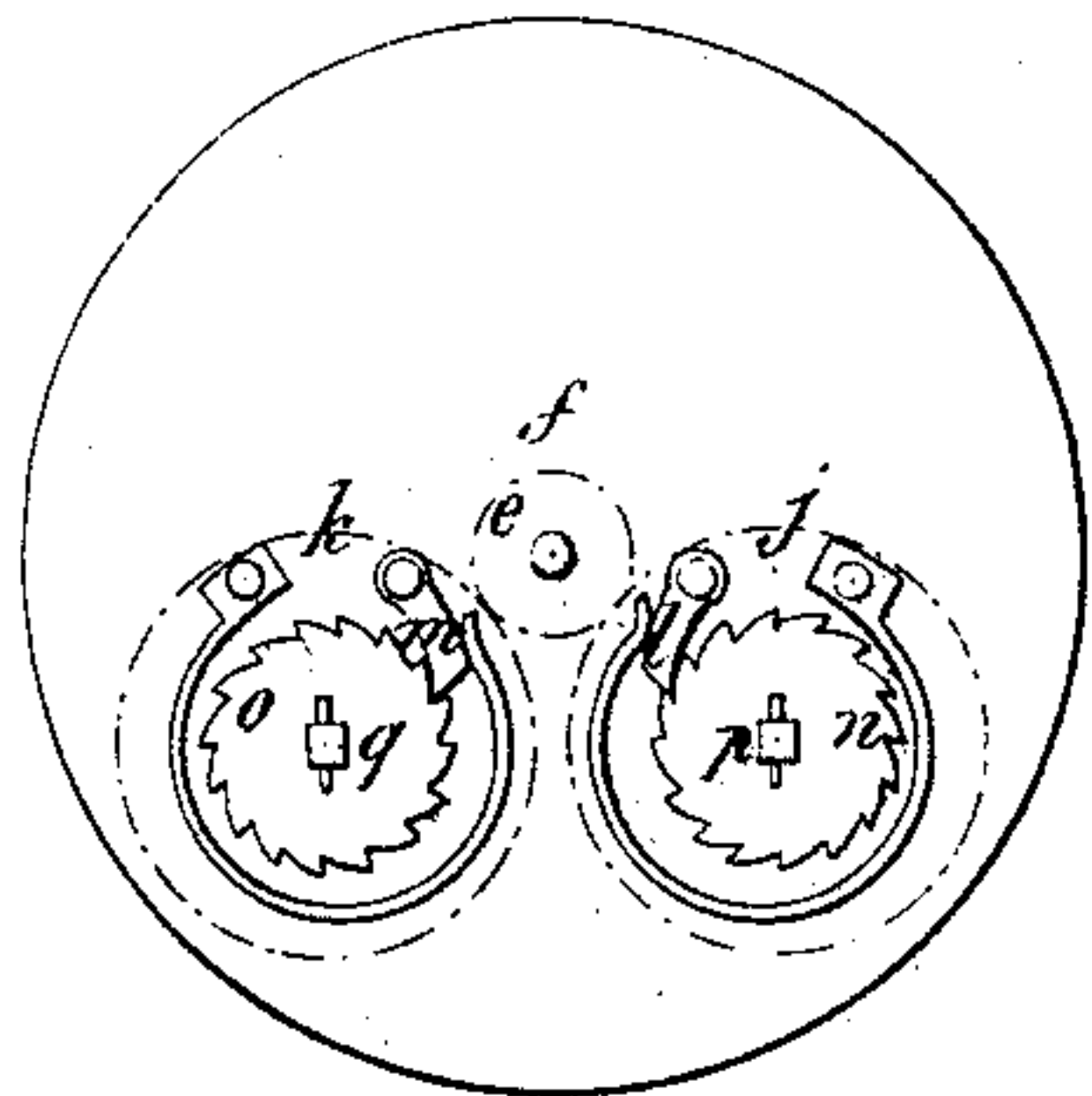


FIG. 3.



Witnesses:

John C. Tunbridge
Willy H. Pictulitz

Inventor:

Louis F. Portebois
by his attorneys
Briener & Steele

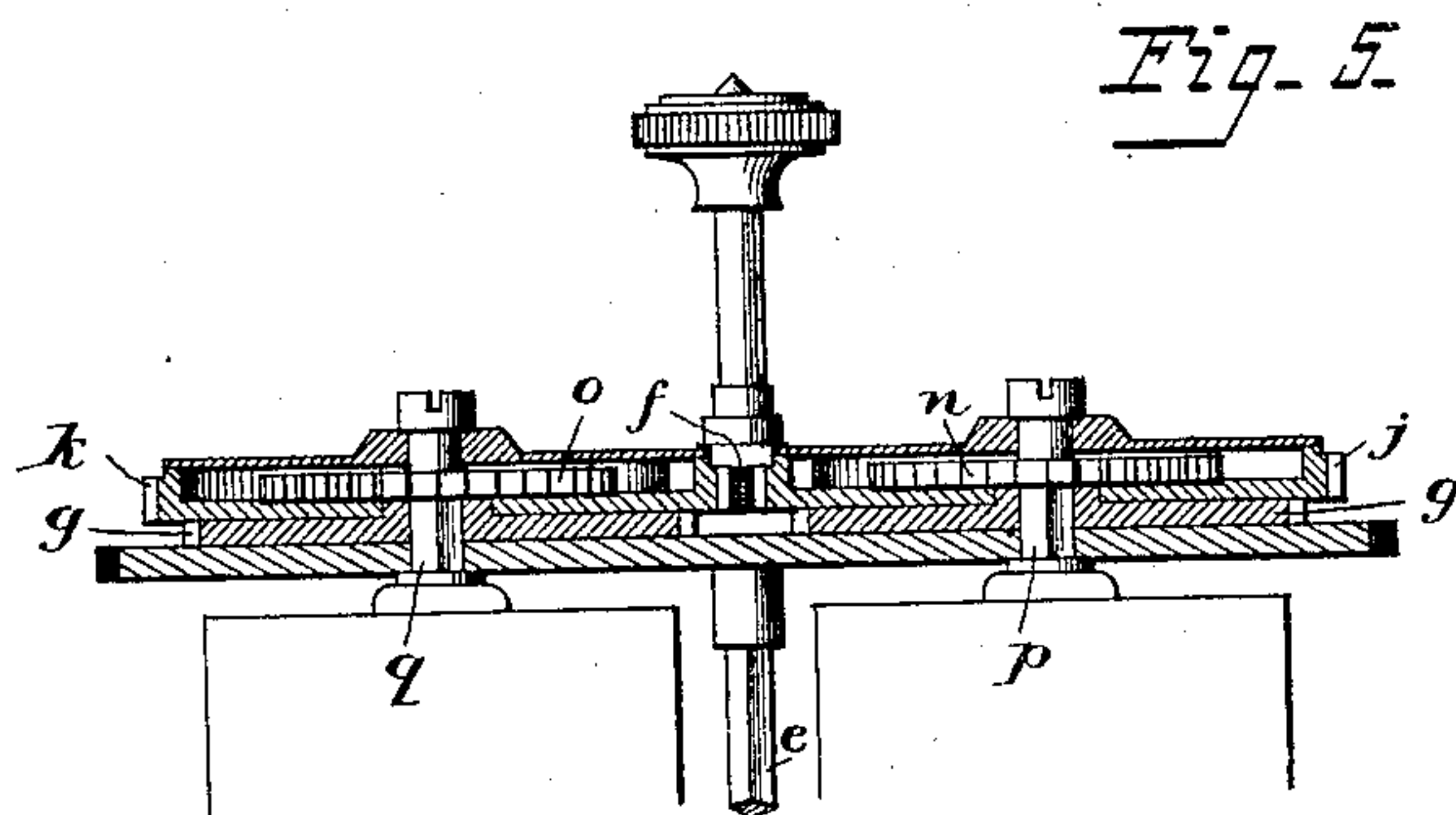
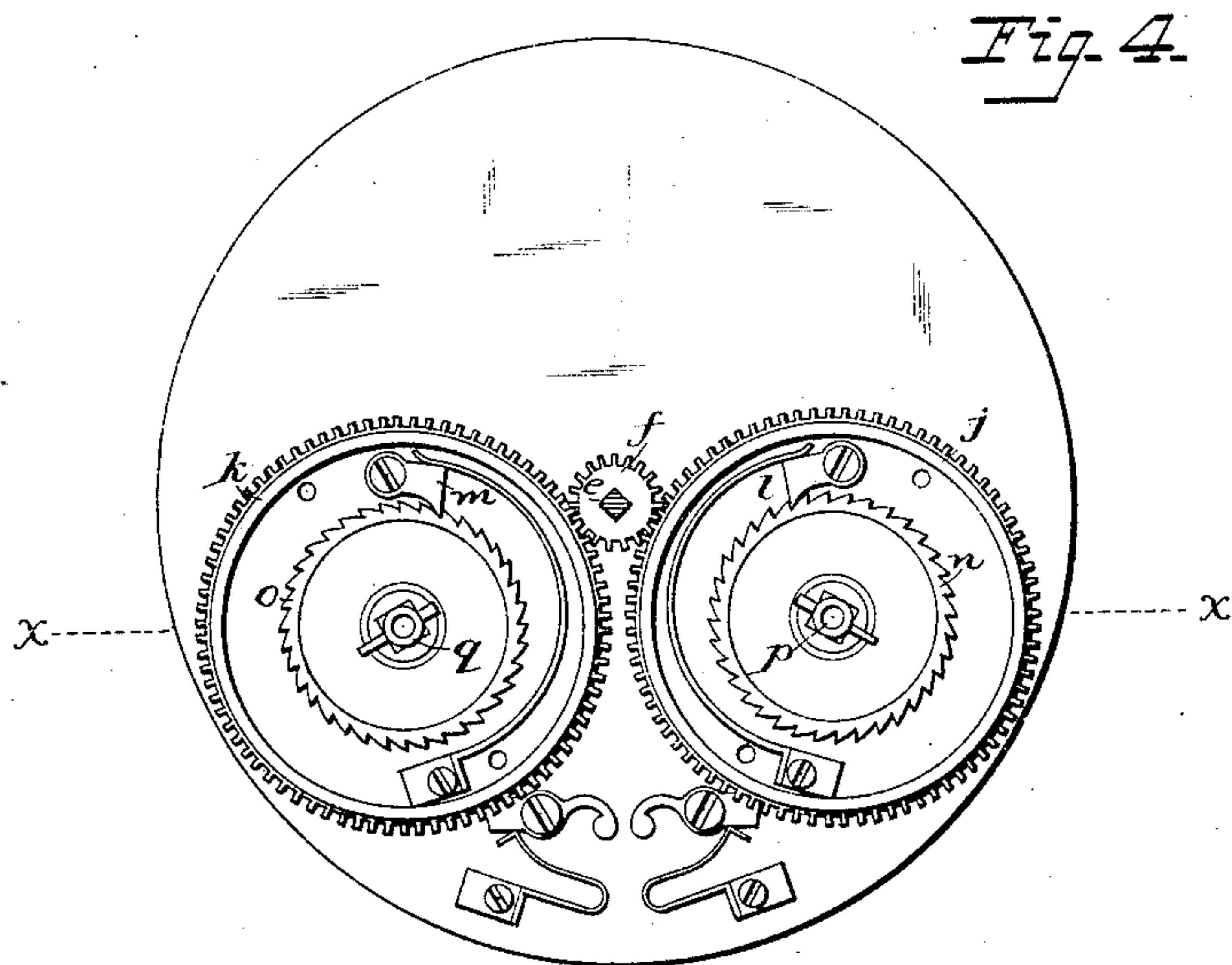
(Model.)

2 Sheets—Sheet 2.

L. F. PORTEBOIS.
CLOCK WINDING MECHANISM.

No. 304,234.

Patented Aug. 26, 1884.



Attest:

Court A. Cooper,
Wm. J. Fayers,

Inventor:
Louis F. Portebois
by his attorney
Bureau of Steel

UNITED STATES PATENT OFFICE.

LOUIS FREDERIC PORTEBOIS, OF PARIS, FRANCE, ASSIGNOR TO VICTOR
EMILE VERSEPUY, OF SAME PLACE.

CLOCK-WINDING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 304,234, dated August 26, 1884.

Application filed July 20, 1883. (Model.)

To all whom it may concern:

Be it known that I, LOUIS FREDERIC PORTEBOIS, of the city of Paris, France, have invented a new and useful Improvement in
5 Clocks, of which the following is a full, clear, and exact description.

This invention relates to a central-winding clock—that is to say, a clock in which both the going and striking barrels are wound up
10 by one and the same arbor, situated at the center of the dial, and about which the hour and minute hands revolve without being affected by the rotation of this arbor in winding up. The means by which this is accom-
15 plished consists, essentially, in removing the so-called "center wheel" from its central position and putting the winding-arbor in its place.

In order that the invention may be more readily understood, I have illustrated it in the
20 annexed drawings, and will proceed to describe it with reference thereto.

Figure 1 is a face view, and Fig. 2 an edge view, of the mechanism in front of front plate of the frame of a non-striking clock. Fig. 3
25 shows the arrangement for a central-winding striking-clock. Figs. 4 and 5 show plan and sectional views on an enlarged scale.

In Figs. 1 and 2, *a* is an intermediate wheel fitted spring-tight upon a long arbor, (corresponding to the ordinary center-wheel arbor,) so as to turn with the arbor and yet be free to be turned independently in setting the hands. This wheel drives the minute-wheel *b*, of the same number of teeth and having a hollow
35 arbor or pipe, which rides loose upon the winding-arbor *e* and carries the minute-hand. The wheel *a* carries a pinion, *c*, which drives the hour-wheel *d*, having a hollow arbor or pipe that rides upon the arbor or pipe of the minute-wheel, and has the hour-hand fitted upon
40 it. The central-winding arbor, *e*, which can turn freely without moving the minute-wheel *b*, carries a pinion, *f*, that gears with a wheel, *g*, fast on the barrel-arbor. The barrel is
45 wound by a key applied to the squared end of the arbor *e*, which turns the wheel *g* through the pinion *f*. To set the hands, a milled disk, *h*, having a tubular stem is fitted onto the externally-squared end of the pipe of the min-

ute-wheel, or a key may be used, or the hands 50 may be turned by the hand.

The mechanism which actuates the arbor of the wheel *a* does not form part of the invention, and need not be described.

Fig. 3 shows how the going and striking 55 barrels may both be wound by the central stem. *f* is the pinion fast on the central winding-stem, *e*, as before, which gears with the two wheels *j* and *k*, on the under side of which are the clicks *m* and *l*, which engage the ratch- 60 ets *n* and *o*, fast on the barrel-arbors *p* *q*, and whose teeth are respectively right and left handed, as shown. By means of these oppositely-toothed ratchets and clicks it results that on giving the pinion *f* a succession of 65 half-turns alternately in opposite directions it actuates the winding-ratchets alternately, so that the strength of only one spring is required to be overcome at one time. In other words, by turning the pinion *f* in one direc- 70 tion one of the springs only will be wound, and by turning it in the opposite direction the other spring will be wound. This arrangement of oppositely-toothed ratchets is, moreover, necessary for winding two barrels by a 75 single arbor, as should one spring be completely wound up before the other it would be broken by continuing to wind up until the other is fully wound, which it would consequently not be in practice, and in certain 80 cases it might not be possible to wind up at all without breaking one of the springs, for instance, in case either spring from any cause fails to run down while the other does so in the regular way. 85

It will be understood that both barrel-arbors are furnished with a second or retaining click to prevent the arbor of the one turning back when the other is turned forward in winding. 90

I claim—

1. In a central-winding clock, the combination of the wheel *a* on an arbor, placed out of the center, and pinion *c*, the minute and hour wheels *b* *d*, gearing therewith, respectively, 95 the central winding-arbor, *e*, moving independently of the minute and hour wheels *b* *d*, the winding-pinion *f*, and a clock-barrel pro-

vided with a wheel gearing with said pinion *f*, substantially as shown and described.

2. In a central-winding clock, the combination of the wheel and pinion *a c*, minute and
5 hour wheels *b d*, central independently-rotating winding-arbor, *e*, pinion *f*, going and striking barrels provided with wheels gearing with pinion *f*, and furnished with oppositely-directed ratchets and clicks (in addition
10 to the retaining-click) for turning the barrel-

arbors respectively by alternate motion of the winding-stem, substantially as shown and described.

The foregoing specification of my improvement in clocks signed by me this 21st day of 15 June, 1883.

LOUIS FREDERIC PORTEBOIS.

Witnesses:

EDWARD P. MACLEAN,
JEAN BAPTISTE ROLLAND.