

No. 687,782.

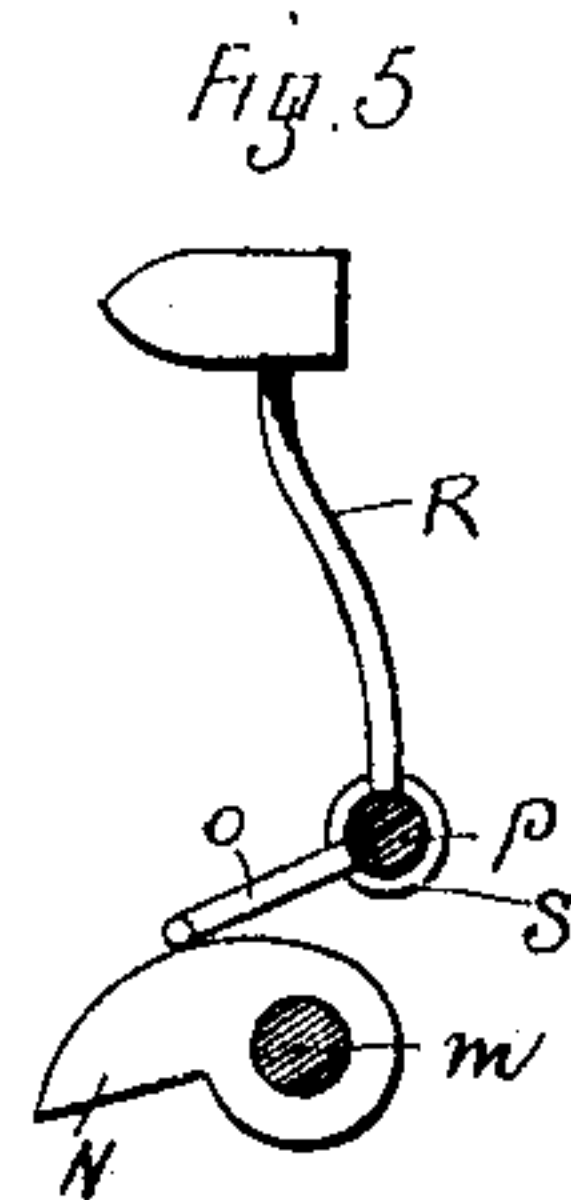
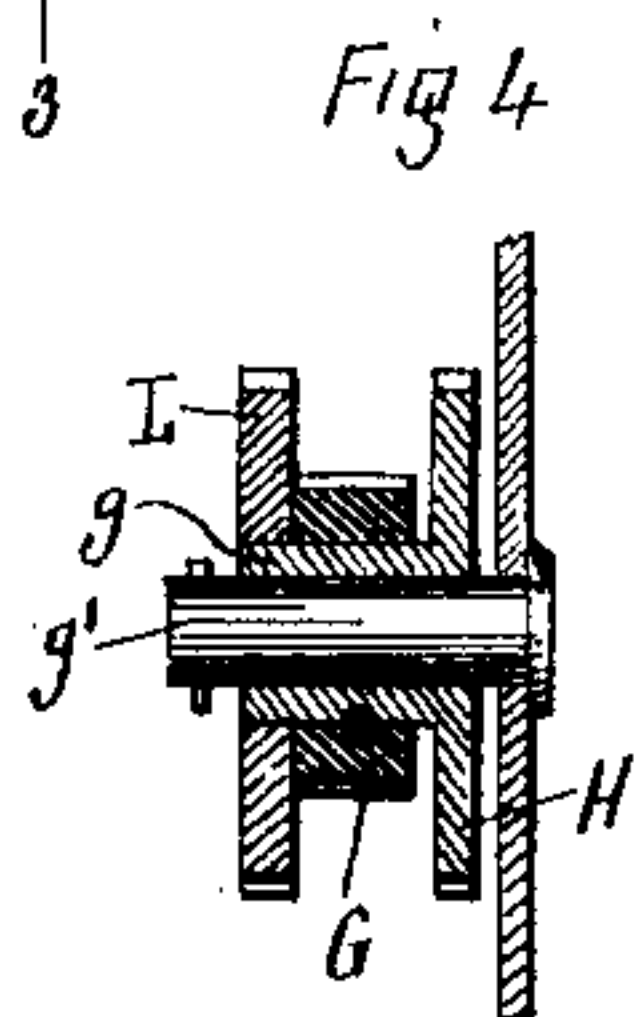
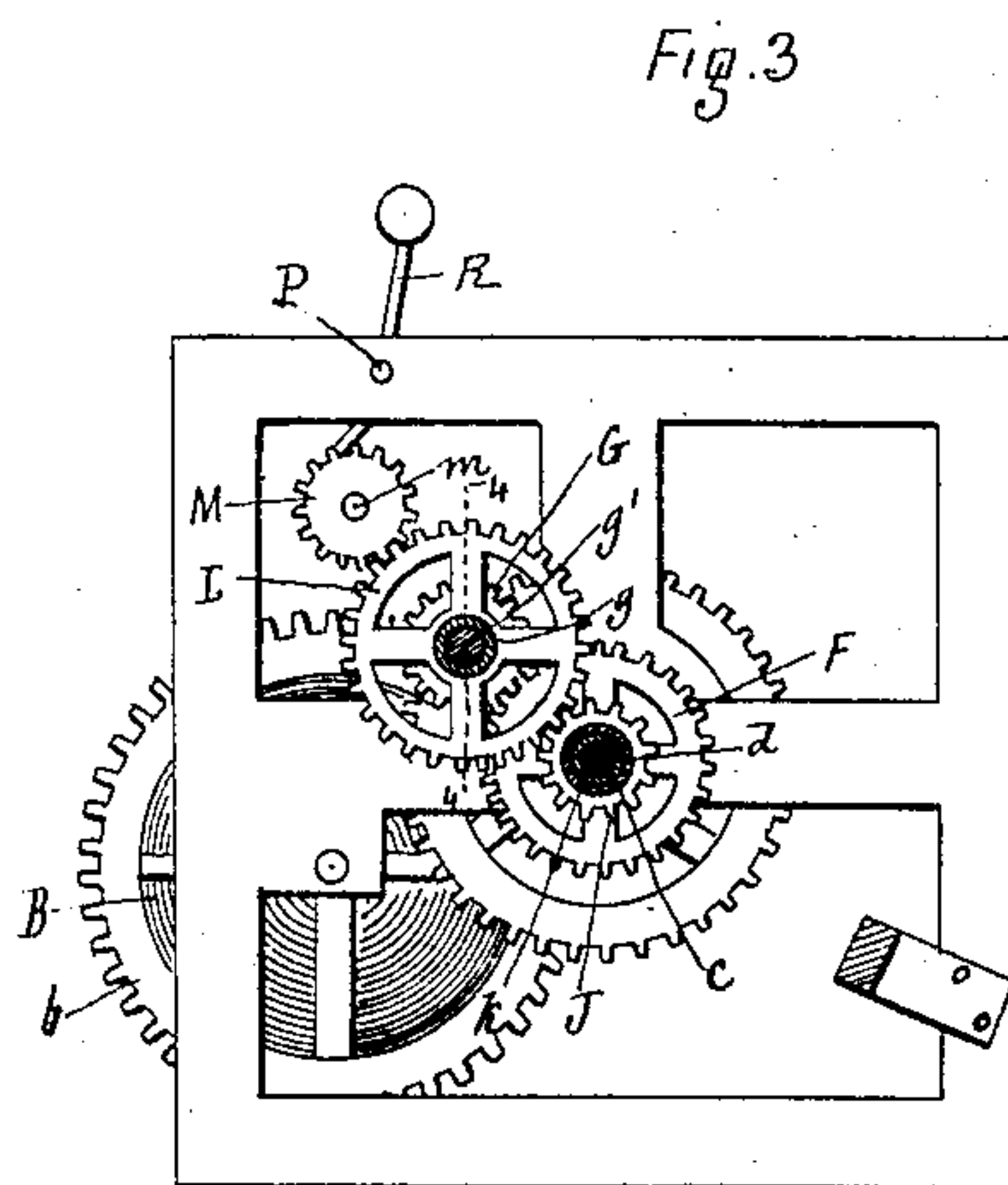
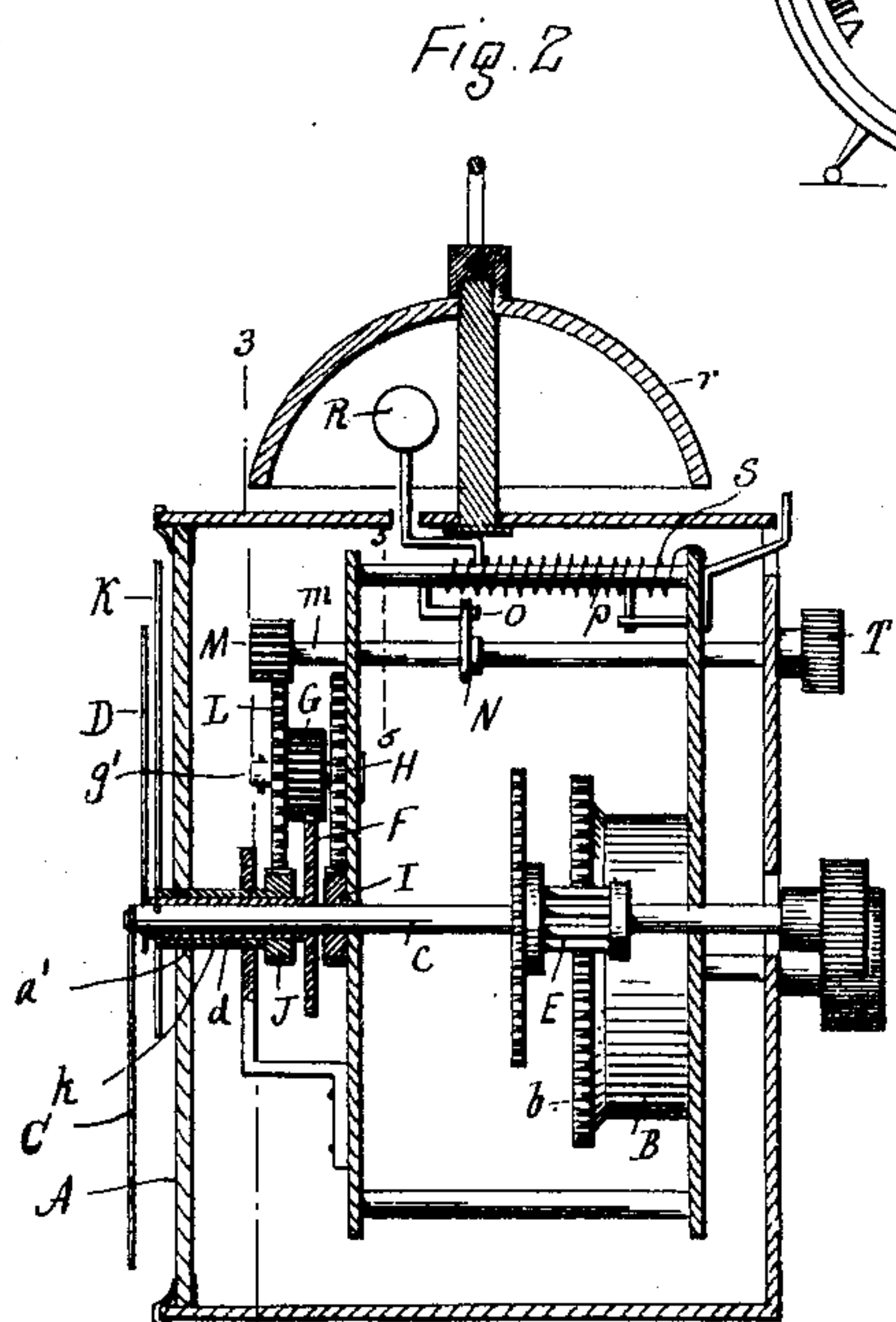
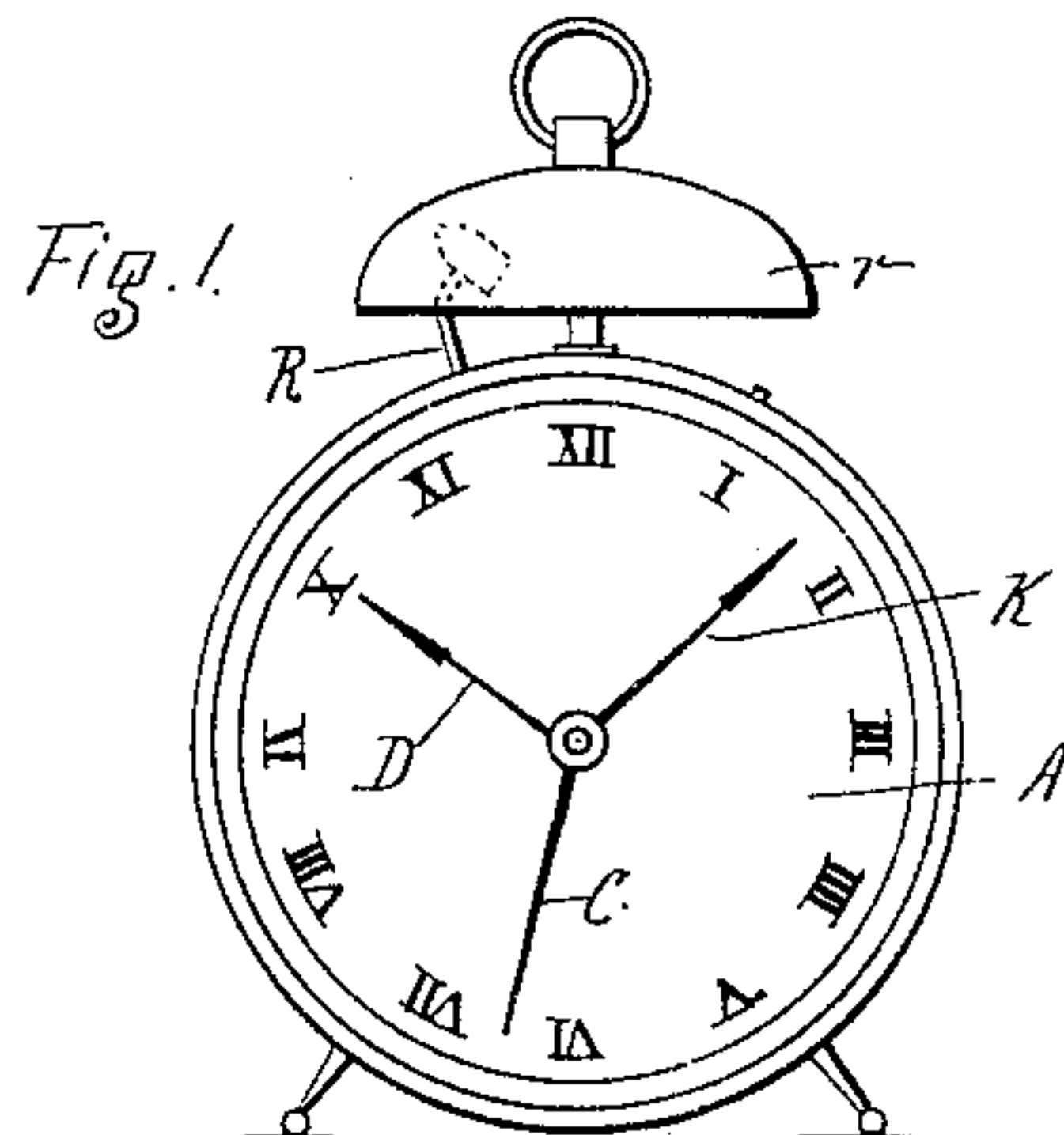
Patented Dec. 3, 1901.

W. E. PORTER.

ALARM CLOCK.

(Application filed Aug. 3, 1900.)

(No Model.)



Witnesses.

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UNITED STATES PATENT OFFICE.

WILSON E. PORTER, OF NEW HAVEN, CONNECTICUT, ASSIGNOR TO THE
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ALARM-CLOCK.

SPECIFICATION forming part of Letters Patent No. 687,782, dated December 3, 1901.

Application filed August 3, 1900. Serial No. 25,814. (No model.)

To all whom it may concern:

Be it known that I, WILSON E. PORTER, of the city and county of New Haven, in the State of Connecticut, have invented new and
5 useful Improvements in Clock-Movements, of which the following is a full, clear, and exact description when taken in connection with the accompanying drawings, which form a part thereof, and in which—

10 Figure 1 represents a front elevation of a clock embodying my invention; Fig. 2, a vertical central section of the same; Fig. 3, a vertical section on line 3 3 of Fig. 2; Fig. 4, a detail sectional view on line 4 4 of Fig. 3, and
15 Fig. 5 a detail view of the hammer-tripping mechanism and associated parts.

In all figures similar letters of reference represent like parts.

This invention relates to clock-movements,
20 and primarily consists in the production of a novel movement for the rotation of three concentric indicators at varying rates of speed by a single operating-train. The mechanism is shown applied to a so-called "reminder-strike" clock, in which the strike-hand is separate from but concentric with the minute-hand, with which it is synchronously rotated
25 by the operating-train, while it rotates at a different rate of speed from the hour-hand. It is also capable of movement independent from both the hour and minute hands, all of which is more fully described and claimed together with other features and combinations of parts hereinafter.

35 Referring to the drawings, the letter A designates the part representing the dial or face of the clock, and a' the central opening for the hands.

C and D designate the minute and hour, respectively, and c , the rotary minute-hand shaft, operated by the frictionally-mounted barrel-pinion E, meshing with the gear b of the spring-barrel B in well-known manner.

45 d is the sleeve to which the hour-hand D is connected and which is mounted on the shaft c .

F is the gear of the hour-hand sleeve d , meshing with a pinion G, rigidly mounted on a sleeve g on the stud g' , on which sleeve g is also rigidly mounted a gear H, meshing with
50 the pinion I on the minute-hand shaft c . By

the train I, H, G, and F the rotary motion of the shaft c is communicated to the sleeve d of the hour-hand, but at a different rate of speed.

k is a supplementary sleeve mounted on the sleeve d and extending through the opening
55 a' and having rigidly secured thereto at its outer end the strike hand or indicator K. The sleeve k is capable of independent rotation on the sleeve d and is ordinarily operated by the time-train by means of a pinion
60 J, rigidly mounted thereon, meshing with a gear L, frictionally mounted on the sleeve g on the stud g' . The gear L is herein shown of the same size and character as the gear H, and the pinion J corresponds to the pinion I,
65 so that the sleeve k and strike-hand K will be operated synchronously with the shaft c and minute-hand C, but at a different rate from sleeve d and hour-hand D. When the minute-hand C is adjusted through its frictional connection with the operating-train independently of said operating-train, the
70 strike-hand will be rotated synchronously with it, as well as when the minute-hand is operated by the time-train.

75 m is a rotary shaft having a pinion M, meshing with the gear L, and a cam N, adapted to swing a trip O, secured to a rotary spindle P, on which is mounted the hammer R of the stationary bell r . A coiled spring S keeps
80 the trip O in contact with the cam N, and a knurled head T on the rotary shaft m enables it to be rotated by the hand of the operator.

The operation of the device is as follows:
85 The rotation of the minute-hand shaft c , either by the operating-train or independently therefrom, rotates synchronously the strike-sleeve k and strike-hand K, as pointed out above. The rotation of the intermediate gears H and L, mounted on the same sleeve g , operates
90 the rotary shaft m through the pinion M, and the cam sets in motion the tripping device O for swinging the hammer to ring the bell r at certain regulated intervals or periods. To adjust the reminder striking mechanism to
95 ring at the end of a shorter interval than that for which it is regulated, the shaft m is rotated by the head T, and by means of the pinion M, gear L, and pinion J the strike-indicator sleeve k is rotated independently of
100

he operating-train owing to the frictional mounting of the gear *L* on the sleeve *g*. By this rotation of the shaft *m* the strike hand or indicator *K* is rotated to such a point on the dial that its further rotation by the operating-train to the fixed point where the striking mechanism is operated will take place at the end of the desired interval. Thus presuming that the striking mechanism will be regularly operated whenever the strike-hand passes the "XII" mark, then to have the strike occur in fifteen minutes instead of at the end of the hour the strike-hand is turned by the shaft *m* independently of the operating-train until it points to "IX," whence it will require fifteen minutes for the operating-train to bring the strike-hand opposite the "XII" mark, where the strike mechanism is operated.

Having now described my invention, which may vary in detail without departing from the spirit thereof, what I claim, and desire to secure by Letters Patent, is—

1. In a clock-movement, the combination with an operating-train; of a rotary shaft operated by said train; a sleeve mounted on said shaft; a second sleeve mounted on said first sleeve; and a single counter-shaft carrying a rotary member operated by said shaft

and operating each of said sleeves independently, substantially as described.

2. In a clock-movement, the combination with an operating-train; of a rotary shaft operated by said train; a sleeve mounted on said shaft; a second sleeve mounted on said first sleeve; a single counter-shaft carrying a rotary member operated by said shaft, and directly operating one of said sleeves; and an intermediate gear having a frictional connection with said rotary member and operating the other of said sleeves, substantially as described.

3. The combination with the time-train of a clock-movement; of a rotary shaft separate from said time-train, carrying an alarm-actuating device, and having a gear rigidly mounted thereon; a strike-indicator; a rotary member meshing with said gear and operating said strike-indicator, said rotary member having a frictional connection with the time-train by which it is operated, substantially as described.

In witness whereof I have hereunto set my hand this 23d day of July, 1900.

WILSON E. PORTER.

Witnesses:

GEO. W. CORY,

WALTER S. SWINSCOE.