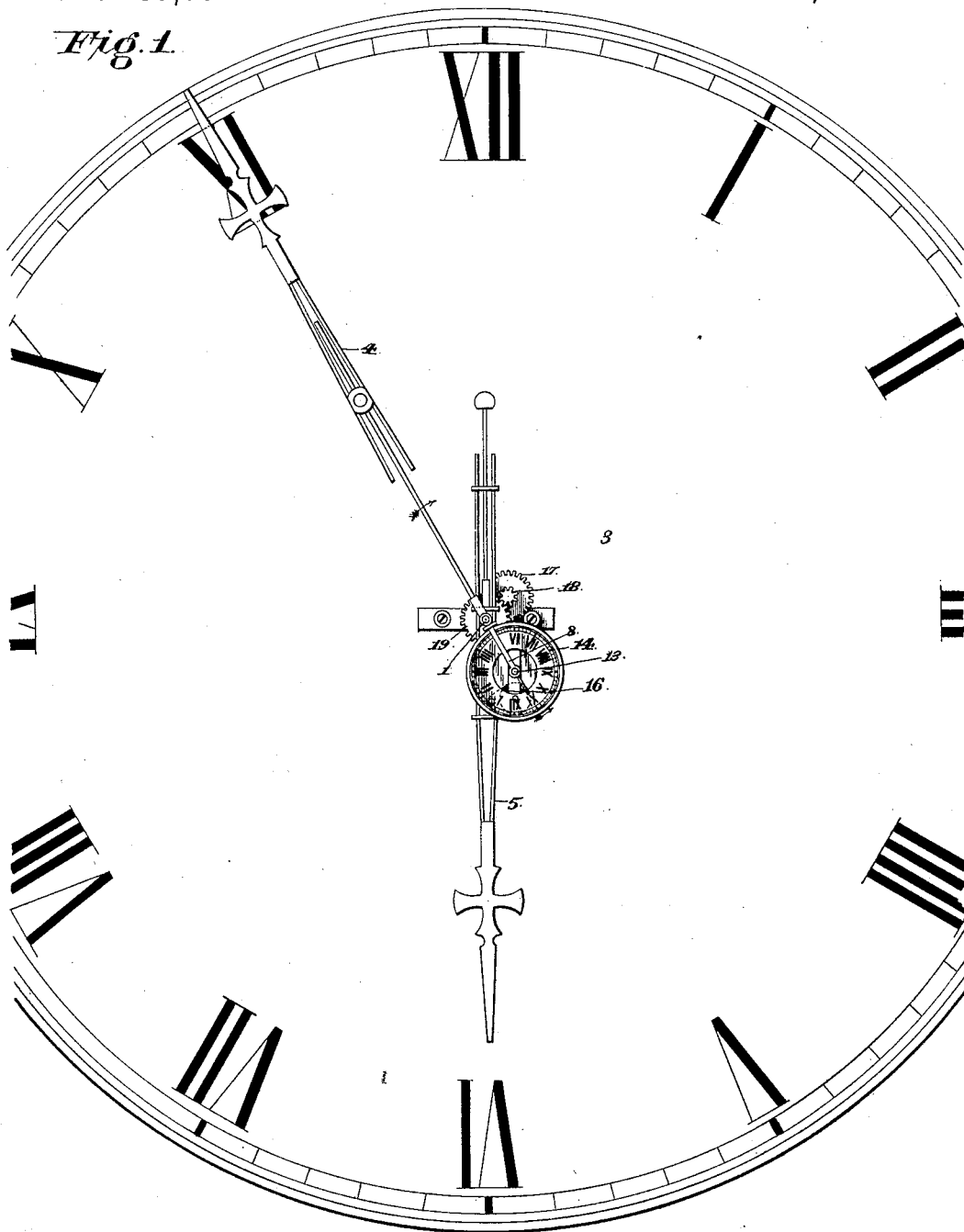


J. A. HEUSER.
CLOCK.

No. 453,637.

Patented June 9, 1891.

Fig. 1.



Witnesses

M. Fowler

H. P. Riley

Inventor

John A. Heuser

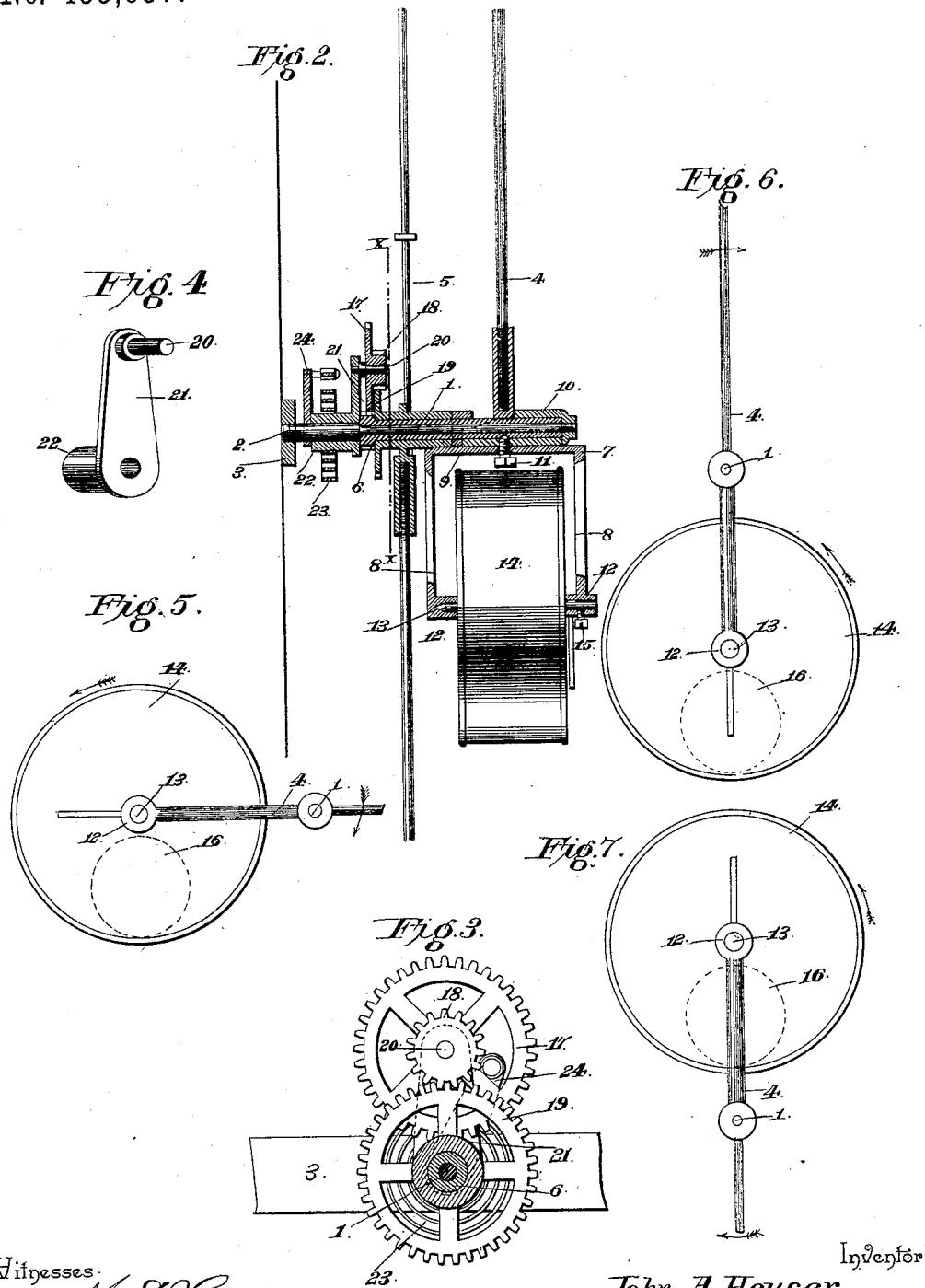
By his Attorneys,

C. A. Snow & Co.

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UNITED STATES PATENT OFFICE.

JOHN A. HEUSER, OF PULASKI CITY, VIRGINIA.

CLOCK.

SPECIFICATION forming part of Letters Patent No. 453,637, dated June 9, 1891.

Application filed October 21, 1890. Serial No. 368,818. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. HEUSER, a citizen of the United States, residing at Pulaski City, in the county of Pulaski and State of Virginia, have invented a new and useful Clock, of which the following is a specification.

The invention has relation to improvements in clocks.

The object of the present invention is to simplify and improve the construction of clocks and enable large dial-clocks, such as cathedral clocks, to be run by small movements, and thereby greatly lessen the cost of large expensive clocks.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is a front elevation of a clock constructed in accordance with this invention. Fig. 2 is a sectional view, the dial-pivot and the movement-supporting frame being illustrated in elevation. Fig. 3 is a sectional view on the line *xx* in Fig. 2. Fig. 4 is a detail perspective view. Figs. 5, 6, and 7 are diagrammatic views illustrating the positions of the movement at different positions of the minute-hand.

Referring to the accompanying drawings, 1 designates the dial-pivot having its inner end 2 threaded and screwed into the center of the dial 3 and adapted to support a minute-hand 4 and an hour-hand 5, which are geared together in the usual manner to cause the hour-hand to rotate one-twelfth as fast as the minute-hand. The minute-hand 4 is secured to a cannon-pinion 6 and projects from one side of the cannon-pinion, which is mounted upon the pivot 1, and has connected with it a movement-supporting frame 7. The movement-supporting frame is constructed of suitable metal and is approximately rectangular and consists of parallel sides 8 and a cross-bar 9, connecting the inner ends of the sides 8, and rigidly secured to the cross-bar 9 is a sleeve 10, which is mounted on the cannon-pinion 6 and retained thereon by a set-screw 11, and the said dial-supporting frame is arranged diametrically opposite the minute-hand 4 and forms a continuation of the same,

and the outer ends of the sides 8 are provided with inwardly-extending journals 12, which are adapted to receive the center post 13 of a watch or clock movement 14, arranged within the frame 7 and rotating upon its center post, and one of the bearings 12 is provided with a set-screw 15 for securing the movement to the frame.

The movement 14 is provided with a weight 16, which in the present case is formed by the mainspring of the movement, and the said weight, when the hour-hand is horizontal and at quarter past or quarter of an hour, is equally balanced, as illustrated in Fig. 5 of the accompanying drawings. As the movement rotates on its center post the weight 16 is carried in the direction of the arrow, thereby bringing it nearer the pivot 1 and shifting the center of gravity and increasing the comparative weight of the minute-hand and causing the same to gradually move in the direction of the arrow until it assumes the vertical position illustrated in Fig. 7 of the accompanying drawings, when the weight is nearest the pivot. The weight then moves in the direction of the arrow until it assumes a position at a diametrically-opposite point from where it now is and the hand assumes the position illustrated in Fig. 6 of the drawings. It will thus be seen that a rotation of the movement, which occurs every hour, will cause a corresponding rotation of the minute-hand and a complete balance movement is produced. If the mainspring of a movement is not sufficient to make that side of the casing of the movement heavy enough, an additional weight can be employed, which will enable any movement similar to the one shown to operate the minute-hand 4, which is connected with the hour-hand and will cause the operation of the same in the usual manner.

The cannon-pinion 6 meshes with a cog-wheel 17, which has its pinion 18 gearing with the hour-wheel 19, to which the hour-hand 5 is secured, and which rotates upon the cannon-pinion 6. The cog-wheel is mounted upon a journal 20 of an arm 21, extending from a sleeve 22, which is loosely arranged on the inner end of the pivot 1, and the said sleeve 22 is secured to one end of a spiral spring 23, which has its other end attached to the outer end of a stationary arm 24, mounted on

the pivot, and the said spiral spring 23 keeps the hour-hand in proper position, and should the latter be moved the spring will cause it to assume its proper position relative to the minute-hand.

The movement is not geared with the hour or minute hands, and the latter are run entirely by the shifting of the weight 16, which merely has to overcome the friction of the hands 4 and 5 and their gearing, which friction is comparatively light, and by this construction large dials of ten feet or more can be run by small movements, thereby greatly lessening the cost of large and usually expensive clocks.

What I claim is—

1. In a clock, the combination of the pivot, the hands connected together in the usual manner, the movement-supporting frame provided with the sleeve 10 and the bearings 12, and the movement having its center post

journalled in said bearings, substantially as described.

2. In a clock, the combination of the pivot, the arm 24, rigidly secured thereto, the sleeve 22, loosely mounted on the pivot and provided with the arm 21, the spiral spring having one end secured to the sleeve and the other end secured to the stationary arm 24, the cog-wheel 17, mounted on the arm 21 and provided with the pinion 18, the cannon-pinion carrying the minute-hand and gearing with the cog-wheel, and the hour-wheel carrying the hour-hand and gearing with the pinion 18, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

JOHN A. HEUSER.

Witnesses:

JAS. L. KENT,
J. W. WILSON.