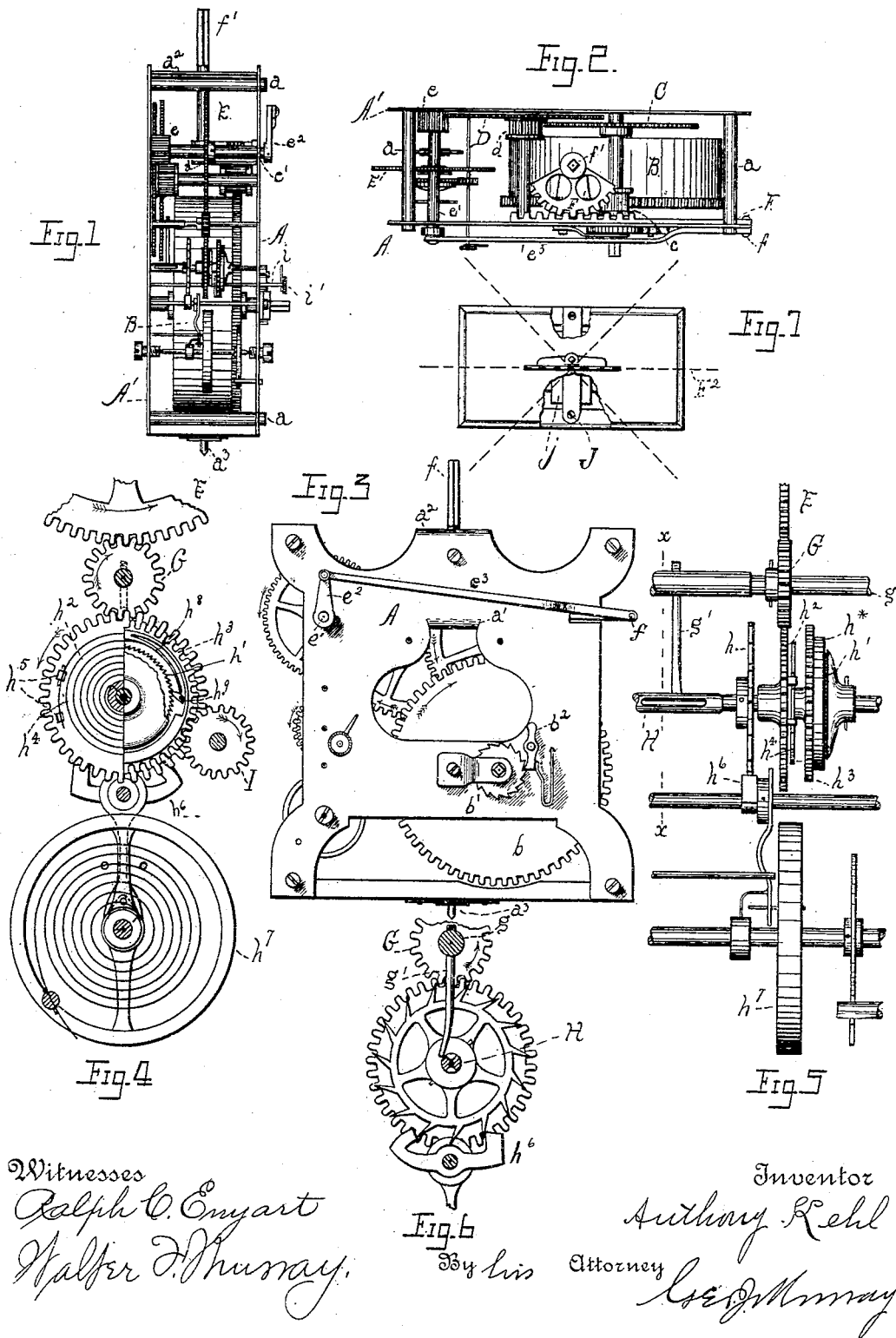


(No Model.)

A. KEHL.
CLOCK MOVEMENT.

No. 494,145.

Patented Mar. 28, 1893.



UNITED STATES PATENT OFFICE.

ANTHONY KEHL, OF CONNERSVILLE, INDIANA, ASSIGNOR TO ROOTS & HEINEMANN, OF SAME PLACE.

CLOCK-MOVEMENT.

SPECIFICATION forming part of Letters Patent No. 494,145, dated March 28, 1893.

Application filed July 15, 1892. Serial No. 440,119. (No model.)

To all whom it may concern:

Be it known that I, ANTHONY KEHL, a citizen of the United States, and a resident of Connorsville, in the county of Fayette and State of Indiana, have invented certain new and useful Improvements in Clock Attachments, of which the following is a specification.

The principal object of my invention is to provide an attachment for clocks which, driven by the ordinary barrel and train, will intermittently actuate mechanism for displaying advertising cards, signs or other objects for attracting attention.

The invention consists in the peculiar combinations and arrangements hereinafter fully described in connection with the accompanying drawings, and particularly pointed out in the claims.

Referring to the drawings in which like parts are indicated by similar reference letters wherever they occur throughout the various views: Figure 1 is an edge elevation of a movement embodying my invention, removed from the case. Fig. 2 is a top or plan view of the same. Fig. 3 is a front elevation. Fig. 4 is a detail view in front elevation, upon a greatly enlarged scale, of the devices which intermittently release the clock train, regulate the periods within which it is released, and wind up the spring which actuates the escapements: parts being broken away to expose the parts back of them. Fig. 5 is an edge elevation of the view shown in Fig. 4. Fig. 6 is a detail view in rear elevation of the escapements the arbors being shown in section and the view is taken through line *x. x.* of Fig. 5. Fig. 7 is a diagram showing the different positions the display card or sign assumes when the movement is in operation. The top of the case in this view is removed to show the cushion which prevents jarring when a long or heavy display card is carried by the spindle.

The drawings represent my motor as adapted to display the well known tripple, or slatted signs, which have one name or sign formed upon the background, and a different one upon each side of the slats, which are arranged vertically at right angles to the back, so that one design, name, or word, is read when the sign is squarely in front of the spec-

tator, and a different one when it is turned at an angle in either direction.

The operative mechanism is placed between two brass plates *A. A'*, which are suitably braced parallel with each other by stay bolts *a*, at each edge, and at the bottom by a wooden base piece; the sides have also inturned lugs or portions *a'. a².* which furnish bearings for the spindle or arbor which carries the sign, card, or other device for attracting attention.

The spring barrel *B*, first or great wheel *b*, the winding arbor, ratchet and click *b'. b².* the second or center wheel *C*, its pinion *c*, the third wheel *D*, its pinion *d*, are the same as usually employed in clock work and need not be specifically described.

The wheel *D*, meshes with a pinion *e*, secured upon an arbor *e'*, upon which arbor is secured a wheel *E*. This occupies the position of the escapement wheel in ordinary train or clock work. The arbor *e'* extends through the front plate *A*, and has secured upon its extended end a crank arm *e²*. A connecting rod *e³* couples the crank pin of the arm *e²*, and a pin *f*, in the end of the sliding rack bar *F*, which is fitted to slide in guides upon the inside of the plate *A*. The teeth of the rack *F*, mesh with a toothed sector *F'*, which is secured upon the vertical arbor *f'*, which arbor has its bearings in the inturned parts *a'. a².* of the front and back plates *A. A'*. The upper end of the arbor *f'* is formed angular to receive the clip or lug piece which carries the sign or card *F²*. Now it will be seen that when the crank arm *e²* stands vertically in either its upper or lower positions, the sign set upon the arbor *f'* will stand parallel to the back and front plates *A'. A.* and that when the crank stands horizontally the sign will be at an angle of forty-five degrees to the front plate to one side or the other, depending upon whether the arm is at the outer, or inner limit of its travel.

To produce the best effects the display card or sign is rapidly turned from one position to the other, and allowed to rest in each position for a fixed period. To accomplish this result, I provide an escapement which releases the wheel *E*. and allows it to make one fourth of a revolution before it is arrested, thus turn-

ing the sector F' , through an arc of forty-five degrees, and at the same time winding up a spring which actuates an independent movement, controlled by an escapement, which determines the time the wheel E. and its arbor shall remain at rest. The wheel E, meshes with a pinion G, secured upon an arbor g . In this arbor is fixed an arm g' , which extends down, and in its normal position bears against the periphery of the grooved arbor H. The grooves as seen clearly in Fig. 6 are upon diametrically opposite sides of the arbor, and are deep enough to allow the arm g' , to escape and the pinion G, to make an entire revolution by which time the arbor H, has turned far enough to arrest it, until the groove in its opposite side comes opposite the end of the arm g' . Upon the arbor H are secured the ordinary escape wheel h , and the ratchet wheel h' ; and journaled upon said arbor are the two toothed wheels h^2 , h^3 . The wheel h^2 meshes with the pinion G and the wheel h^3 with a pinion I, upon an arbor i , which extends through the front plate A. and has upon its end a knurl i' , for the purposes hereinafter described.

The wheels h^2 , h^3 are coupled together by a coiled spring h^4 , the outer end of the spring is secured in clips h^5 , which project from the side of the wheel h^2 , and the inner end is secured upon the hub of the wheel h^3 . Now it will be seen that when the arm g' , is released to allow the pinion G, to make an entire revolution the wheel h^2 , will be revolved and wind the spring h^4 around the hub of wheel h^3 . The force of the spring revolves the arbor H. The scape wheel h , is controlled by pallets h^6 and the balance wheel h^7 .

The escapement for controlling the speed of the arbor H, is of ordinary construction, in fact any of the well known escapements may be employed.

The tension of the spring h^4 which drives the arbor H, is regulated by the pinion I, for this purpose the wheel h^3 , is driven by a click movement instead of being secured upon the arbor H. The wheel h^3 has secured upon its outer face a ring h^8 which overlaps the ratchet wheel h' , a portion of this ring is cut out to form a spring h^8 , which holds the pawl h^9 in contact with the teeth of the ratchet wheel h , as clearly shown in Fig. 4.

By means of the pinion I, arbor i , and the knurl i' , the wheel may be turned and the spring h^4 wound around its hub, to give it sufficient tension to impart the desired impulse to the scape wheel h .

The movement as shown in Fig. 3 may be inclosed in a case of any approved design and may if desired be provided with the ordinary dial and hands for indicating time, in addition to operating my display attachments. To prevent jar and overcome the momentum of a long sign, I find it better to provide for a slight oscillating movement of the motor, for the purpose I prefer to mount it upon a pivot α^3 , which rests upon a suitable step in the

case and arrange a bridge J, across the top of the outer case to bear upon an elastic cushion j , which is placed between the bridge and the top cross piece α^2 , of the plate A'.

There are many features of my attachment applicable to time pieces generally and it is obvious that many mechanical changes may be made in the parts shown without varying the principle or mode of operation of my invention.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination with a time movement of the arbor e' , the pinion e secured thereon and meshing with the third wheel D, of said movement, the crank arm e^2 secured upon said arbor, the vertical arbor f' , the sector F' , secured thereon, the sliding rack F, geared with said sector, the connecting rod e^3 , coupling the crank arm and rack, and an escapement controlling arbor e' , substantially as shown and described.

2. The combination substantially as hereinbefore set forth of the time movement, the arbor e' driven thereby, the vertical arbor f' , and gearing actuated by arbor e' , to impart an intermittent reciprocating movement to said arbor, the wheel E, secured upon the arbor e' , the arbor g , carrying arm g' , and the pinion G, said pinion meshing with wheel E, the grooved arbor H against the periphery of which the said arm g' bears, and an independent spring movement to revolve said arbor H, and release the pinion G and wheel E.

3. The combination as hereinbefore set forth of the time movement, the arbor e' , and its attachments actuated thereby, the escapement for releasing said arbor consisting of the arbor g its fixed pinion G and arm g' , the fluted arbor H, the scape wheel h , and ratchet wheel h' , secured thereon, the wheel h^2 , and h^3 , journaled upon said arbor said wheel h^2 meshing with pinion G, the wheel h^3 coupled by a click with the ratchet h' , the spring h^4 , coupling the wheels h^2 , h^3 and the pallets and balance wheel to control the movements of said arbor, H, whereby the main train is intermittently released and the spring actuating the scape wheel h , is automatically wound.

4. In a clock movement of the character described, the escapement for controlling the main spring and its train, an independent escapement to control the escapement of the main train, and an intermediate mechanism for both escapements to wind the spring which actuates the second escapement, substantially as shown and described.

5. The combination of the main movement, an independent movement actuated thereby, and the arbor i , pinion I, knurl i' , to wind the spring of the independent movement combined and arranged substantially as hereinbefore set forth.

ANTHONY KEHL.

Witnesses:

J. M. McINTOSH,
K. P. JOHNSON.