T. CONNELLY & J. F. BICKELL.

Automatic Swings.

No. 197,097. Patented Nov. 13, 1877.

Fig. 1.

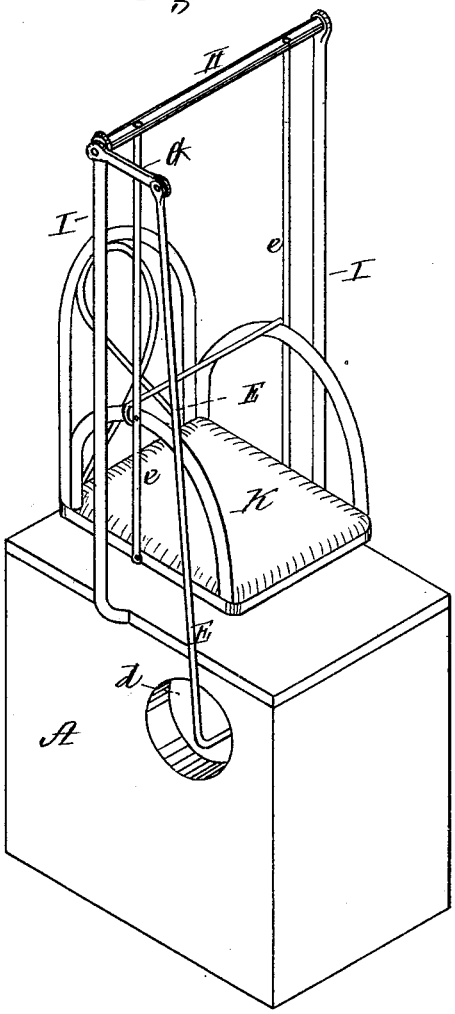
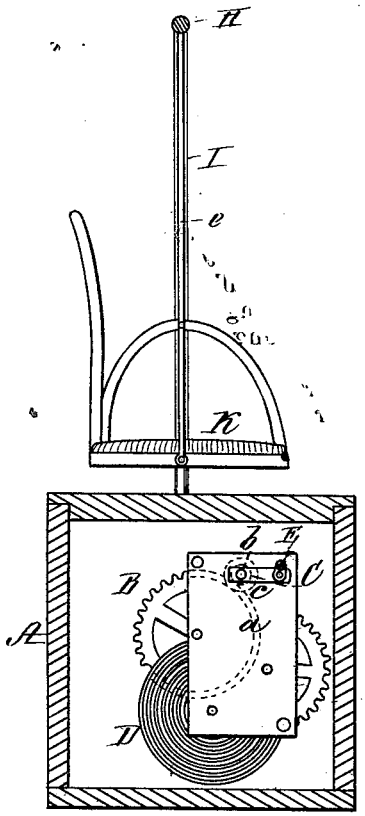


Fig. 2.



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UNITED STATES PATENT OFFICE.

THOMAS CONNELLY AND JAMES F. BICKELL, OF CHELSEA, MASSACHUSETTS.

IMPROVEMENT IN AUTOMATIC SWINGS.

Specification forming part of Letters Patent No. **197,097**, dated November 13, 1877; application filed July 28, 1877.

To all whom it may concern:

Be it known that we, THOMAS CONNELLY and JAMES F. BICKELL, both of Chelsea, in the county of Suffolk and State of Massachusetts, have invented an Automatic Swing, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a perspective view of an automatic swing constructed in accordance with our invention. Fig. 2 is a side elevation of the same.

To provide a swing which may be actuated by a power within itself, and without the exertion of a person to push or pull the same, and to be occupied by a living individual or by an inanimate toy or figure, is the object of our present invention; which consists in a pair of suspension-rods leading from the seat up to a rocker-shaft having its bearings in two uprights or standards, in combination with a rocker-arm, connecting-rod, and a crank secured to the arbor or shaft of one of the wheels or pinions of a train of clock-work actuated by a spring wound up by a key, the swing being vibrated back and forth until the spring becomes unwound.

To enable others skilled in the art to understand and use our invention, we will proceed to describe the manner in which we have carried it out.

In the said drawings, A represents a box or case, to one side of the interior of which is secured a frame, *a*, in which are located the several wheels B, pinions C, and mainspring D of a train of clock-work. The shaft *b* of the upper pinion projects outside its frame, and has affixed thereto a crank, *c*, to the outer end of which is secured the lower end of a connecting-rod, E, which is bent nearly at right angles, and passes out horizontally through a circular opening, *d*, formed in the box or case A. The upper end of the connecting-rod is secured to the outer end of a rocker-arm, G, projecting at right angles out from one end of a horizontal rocker-shaft, H, which has its bearings in two uprights or standards, I, rising from the top of the box or case. Extending down from this rocker-shaft are two parallel rods, *e e*, to the lower ends of which is secured the chair or seat K, to be occupied by the person desiring to swing. The arbor or shaft to which the mainspring is attached projects through one side of the box A, and is turned to wind up the spring by means of an ordinary key, like that employed in winding up a clock.

If desired, both ends of the rocker-shaft may be connected with one of the shafts of the train, in which case duplicate rocker-arms G G, connecting-rods E E, and cranks *c c* would be employed.

By employing one or more springs, D, of adequate strength, a swing may be erected capable of moving one or more persons, and it is evident that our invention may be applied to swinging toys or figures, if desired.

What we claim as our invention, and desire to secure by Letters Patent, is—

The chair or seat K, with its rods *e e*, in combination with the rocker-shaft H, rocker-arm G, connecting-rod E, crank *c*, and the wheels and mainspring of a train of clock-work, arranged and operating substantially in the manner and for the purpose set forth.

Witness our hands this 25th day of July, A. D. 1877.

THOMAS CONNELLY.
JAMES F. BICKELL.

In presence of—
N. W. STEARNS,
W. J. CAMBRIDGE.