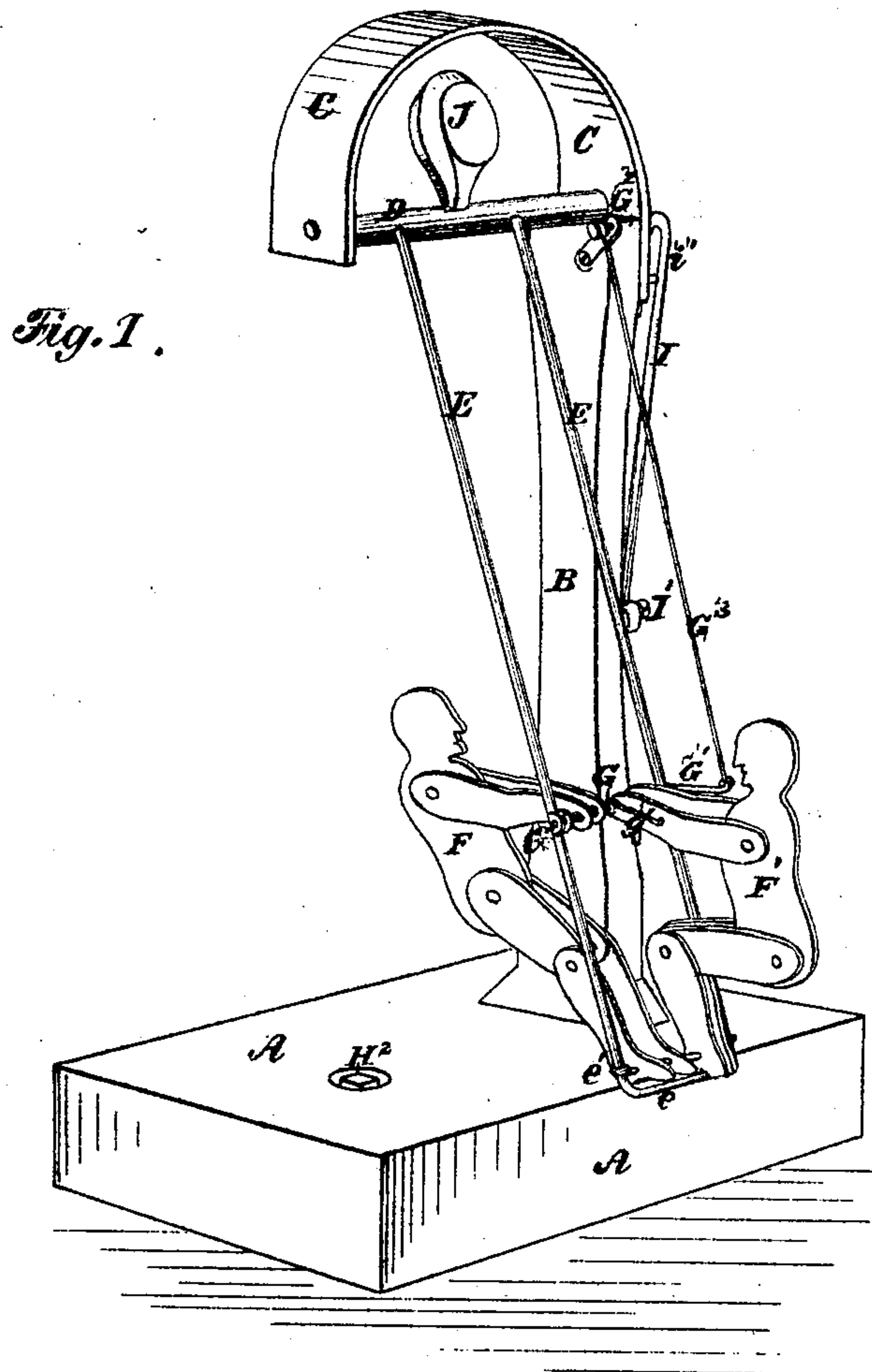


N. S. WARNER.

Improvement in Toys.

No. 128,516.

Patented July 2, 1872.



Witnesses:-

W. H. Rowe,

Baltis & Long.

Inventor:-

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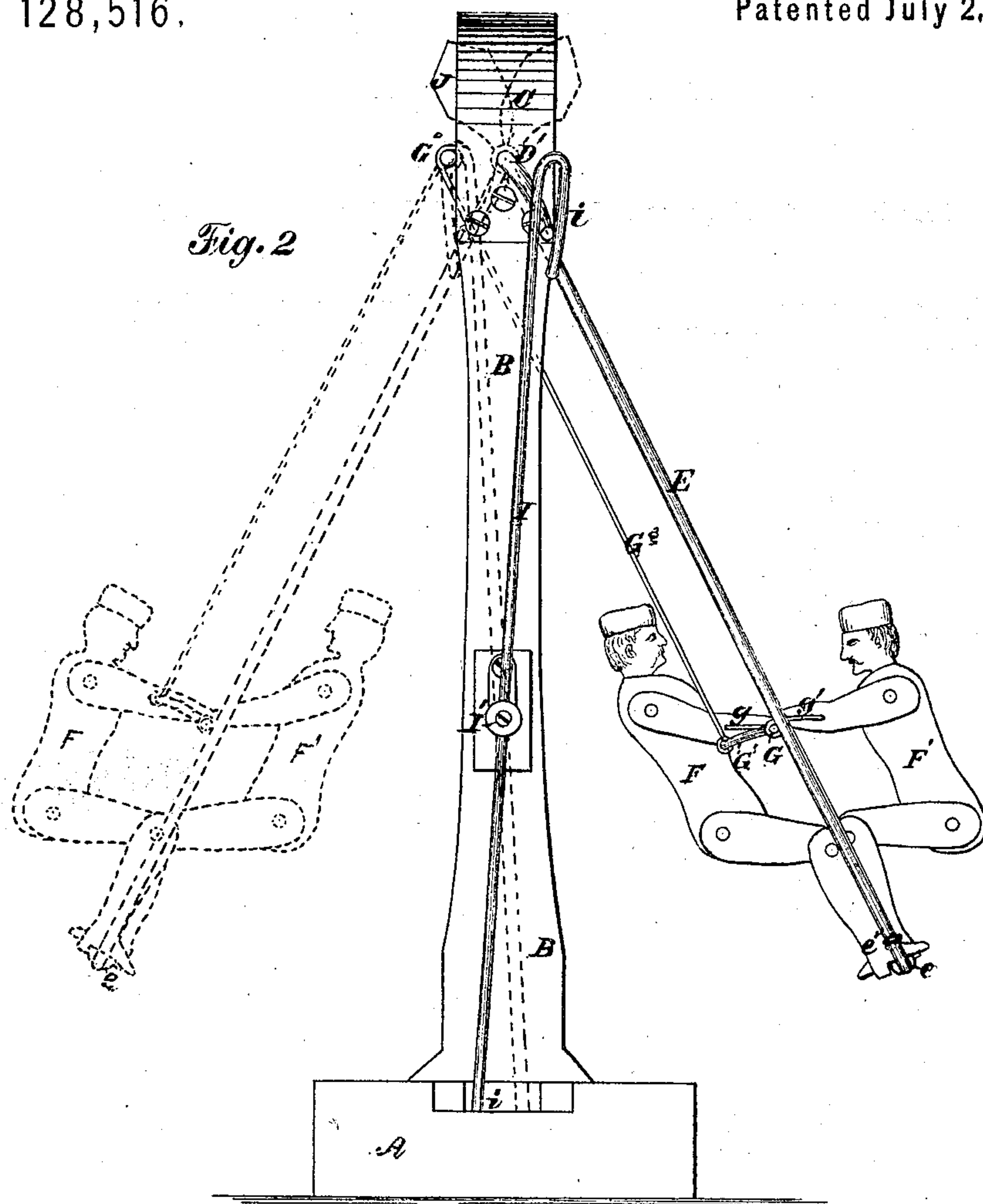
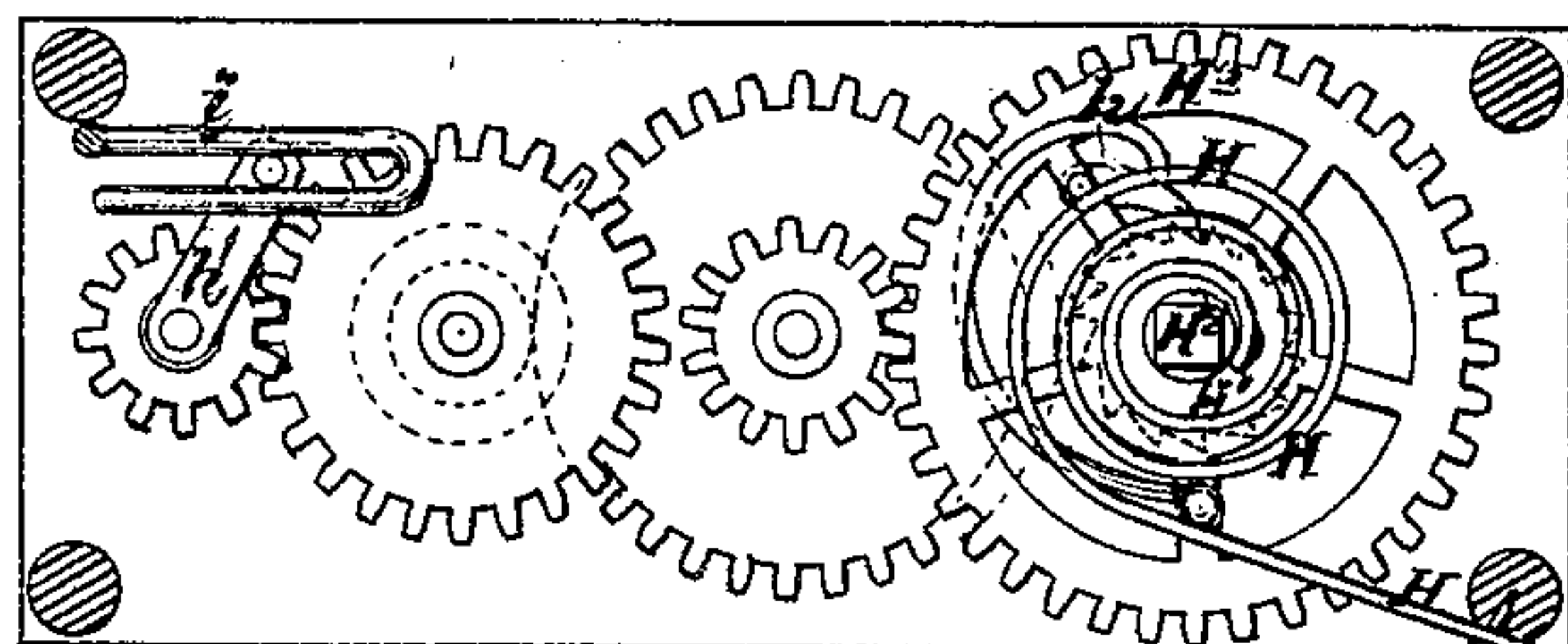


Fig. 3



Witnesses:-
W. H. Rowe,
Baltis & Long.

Inventor:-
N. S. Warner
by his atty
W. D. Baldwin

UNITED STATES PATENT OFFICE.

NATHAN S. WARNER, OF BRIDGEPORT, CONNECTICUT, ASSIGNOR TO
HIMSELF AND JOHN B. CUZNER, OF SAME PLACE.

IMPROVEMENT IN TOYS.

Specification forming part of Letters Patent No. 128,516, dated July 2, 1872..

To all whom it may concern:

Be it known that I, NATHAN S. WARNER, of Bridgeport, in the county of Fairfield and State of Connecticut, have invented an Improved Toy, of which the following is a specification:

The object of my invention is to make a miniature swing with images attached that will be caused to imitate the movement of swingers.

In the accompanying drawing, Figure 1 is a perspective view of my improved toy; Fig. 2, an elevation of the same looking from the rear to the front, and showing the swingers in one position by full lines and in another by dotted lines; and Fig. 3, a plan view upon an enlarged scale of the clock-work that operates the toy.

A box or frame, A, has an upright, B, secured to it, which is of suitable height to support the axis of the swing. A curved plate, C, is secured to the top of the upright, and serves as a bearing to the outer end of the rock-shaft D, which forms the axis of the swing. The swing E is in this instance formed of a single wire that is secured at its ends to the rock-shaft, and hangs downward from its points of suspension a sufficient distance to accommodate the swingers. The images F F' are made of any form to suit the fancy, and have jointed limbs to allow them to move in the swing. The feet of the images are secured to a foot-board, e, in the bottom of the swing, by a cross-piece, e', that also serves to brace and support the wire. A rod, G, passes across the swing at a suitable height to form a hand hold for the images, and is provided with a crank, G¹, at its end nearest the standard. Two other crank-arms, g g', are secured to the rod G about midway between the wires E E, and are attached to the arms of the images in such manner that they serve to give to them a natural movement when the rod G is rocked by the crank on its end. A stud, G², is secured to the upright near to and at a point eccentric to the rock-shaft, and a link, G³, connects this stud with the crank F', so that as the swing vibrates upon its axis the link will cause the rod G to rock in its bearings and move the images up and down in the swing as they vibrate,

and thus, as it will be seen, give to the images the natural movement of swingers. A coiled spring, H, and ratchet-wheel H¹ are secured to an arbor, H², that carries the master-wheel. The master-wheel H³ has a pawl, h, pivoted to it to engage with the ratchet-wheel, and a train of gear-wheels, as in ordinary clock mechanism, gives motion to a crank, h', which serves to vibrate the swing. This driving mechanism is, by preference, inclosed in the box or platform A, which completely protects it from dust and from injury. A lever, I, pivoted to a stud, I', on the upright B, has a loop, i, formed on its lower end at right angles to the length of the lever that passes around the crank-pin h', and from it receives a vibratory motion. The upper end of the lever is bent downward, forming a vertical loop, i, that passes around a crank, D', on the rock-shaft D, and through it serves to oscillate the rock-shaft. A bob, J, secured to and arranged above the rock-shaft serves to regulate and give impulse to the vibrations of the swing. By arranging the bob above the rock-shaft it will be out of the way of obstructions.

The operation and relation of parts to each other will be readily understood from the foregoing description.

The driving mechanism may be arranged on the standard near the rock-shaft instead of beneath the platform, and thus dispense with the connecting-lever; and other well-known forms of driving mechanism may be substituted for that shown, if desired.

Instead of using the link and crank-rod G, a cord or thread may be used to connect the arms or body of the image directly with the standard. The swing and moving images may be operated by hand with a string connected to the crank of the rock-shaft instead of using automatic mechanism, and various other modifications may be made without departing from the spirit of my invention.

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

1. A toy-swing automaton, consisting of an image secured to a swing and receiving a positive motion from its vibrations, substantially as set forth.

2. The combination of an image, the swing, and the clock-work to secure a positive auto-

matic movement of the swing, substantially as set forth.

3. The combination of the images, the swing and the link pivoted eccentrically to the axis of the swing to give a natural movement to the images, substantially as set forth.

4. The combination of the swing, the images, and the bob arranged above the axis of the

swing to accelerate and regulate the vibrations of the swing, substantially as described.

In testimony whereof I have hereunto subscribed my name.

N. S. WARNER.

Witnesses:

SAML. HITCHCOCK,
D. F. MURPHY.