

(No Model.)

L. FRIED.
Toy-Watches and Clocks.

No. 227,516.

Patented May 11, 1880.

Fig. 1.

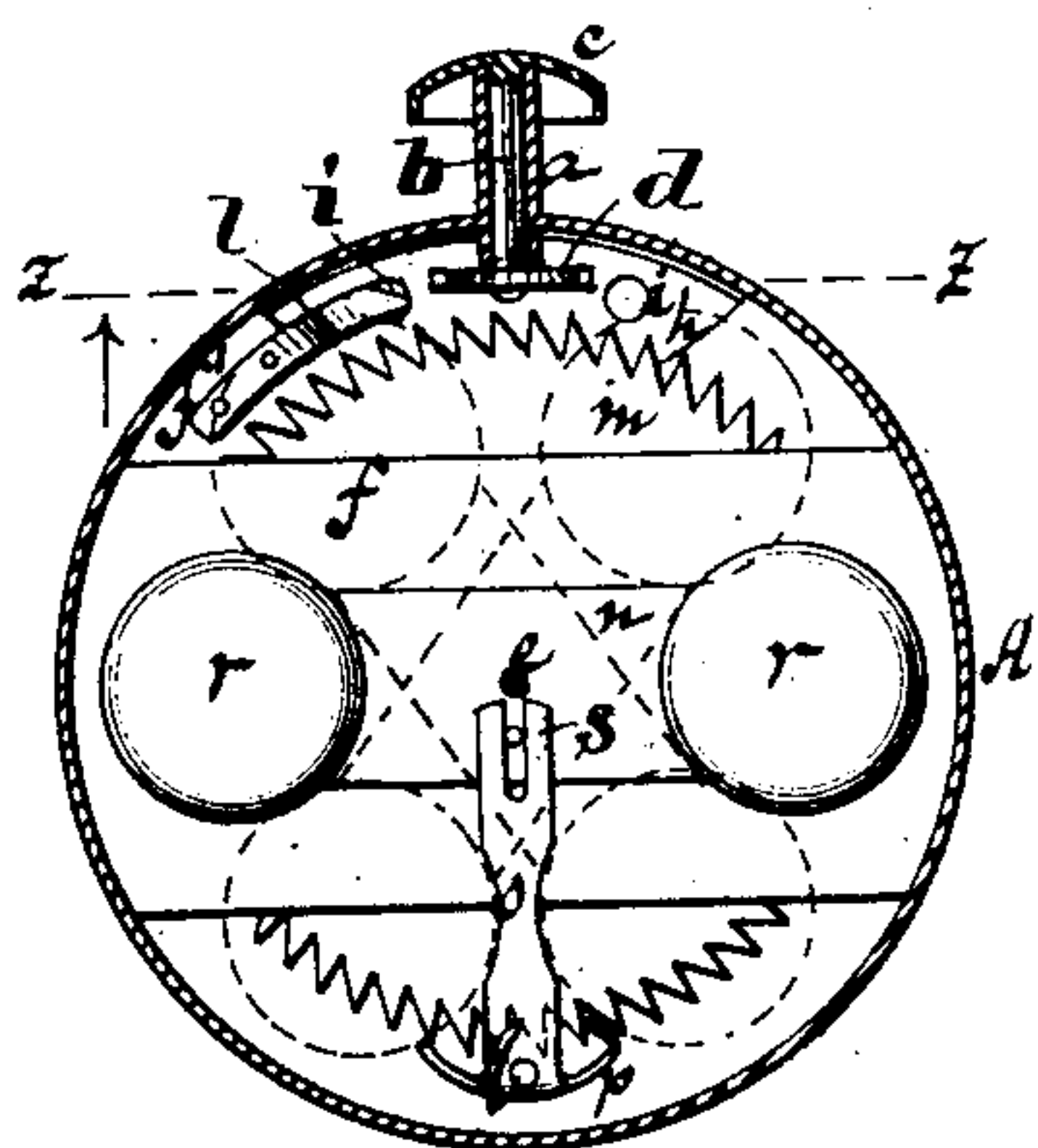


Fig. 2.

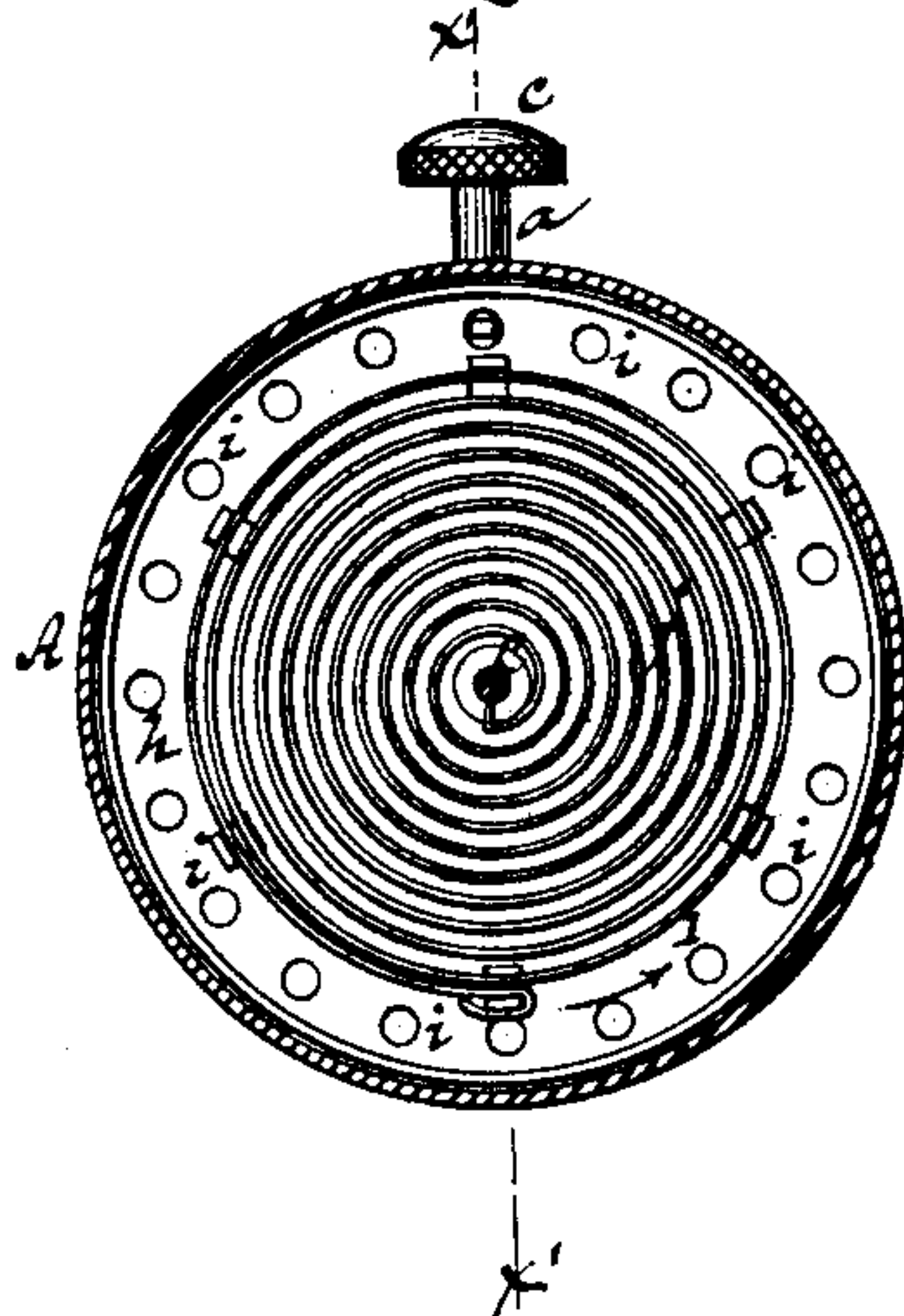


Fig. 3.

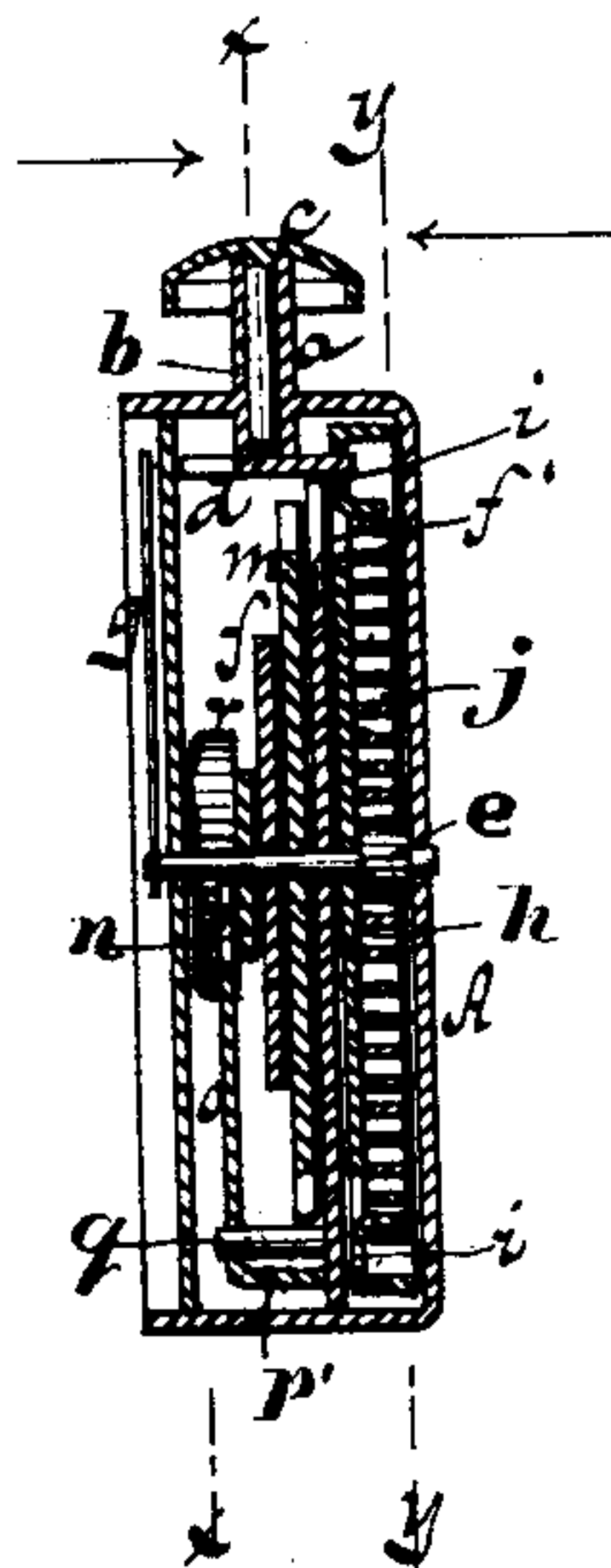
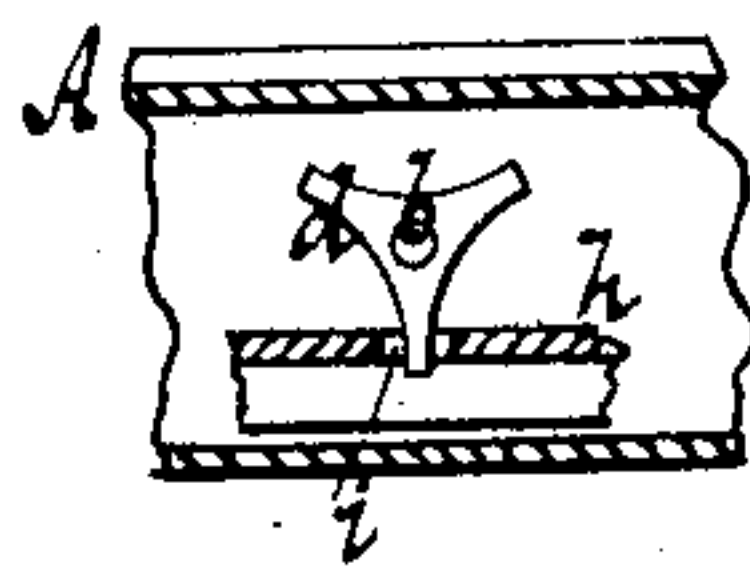


Fig. 4.



Witnesses
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UNITED STATES PATENT OFFICE.

LAZARUS FRIED, OF NEW YORK, N. Y.

TOY WATCH AND CLOCK.

SPECIFICATION forming part of Letters Patent No. 227,516, dated May 11, 1880.

Application filed March 27, 1880. (No model.)

To all whom it may concern:

Be it known that I, LAZARUS FRIED, a citizen of the United States, residing at the city of New York, in the county and State of New York, have invented new and useful Improvements in Toy Watches and Clocks, of which the following is a specification.

This invention consists in the combination, in a toy watch, of a stem arranged in a socket in the side of the case, a spur-wheel mounted on this stem, a central arbor which carries the hand or hands, a disk which is loosely mounted on the central arbor and provided with perforations to engage with the spur-wheel on the stem, a spring fastened at one end to the central arbor and at its opposite end to the perforated disk, an escapement-wheel which is firmly mounted on the central arbor, a balance which turns loosely on the central arbor, and an anchor which is acted on by the balance and by the escapement-wheel, so that by turning the stem the spring is wound up and a very simple and compact movement for a toy watch is obtained; also, in the combination, with the escapement-wheel, the anchor, and the lever which extends from the anchor, of a balance which is held in position on its arbor by the anchor-lever, and of projections on said balance, which form stops to confine the oscillations of the balance within the desired limit.

In the accompanying drawings, Figure 1 represents a section in the plane xx , Fig. 3. Fig. 2 is a similar section in the plane yy , Fig. 3. Fig. 3 is a section in the plane $x'x'$, Fig. 2. Fig. 4 is a section in the plane zz , Fig. 1.

Similar letters indicate corresponding parts.

In the drawings, the letter A designates a case which is provided with a tubular socket, a , forming the bearing for a stem, b , on the outer end of which is secured a knob, c , while on its inner end is mounted a spur-wheel, d , so that said stem and spur-wheel can be conveniently rotated by means of the knob c .

In the example shown in the drawings the case A is made circular, and in its center is situated an arbor, e , which has its bearing at one end in the back plate of the case, and extends through two bridges, $f f'$, in the interior of said case to such a distance that on its outer end one or more hands, g , can be se-

cured. On the arbor e is placed a disk, h , which turns loosely thereon, and which is provided near its periphery with a series of perforations, i , Figs. 1, 2, and 4, which engage with the spur-wheel d , so that by turning the stem b a revolving motion is imparted to the disk h . Beneath this disk is situated a coiled spring, j , Figs. 2 and 3, which is fastened at its inner end to the arbor e and at its outer end to the disk h , so that when the disk is turned in the direction of arrow 1, Fig. 2, and the arbor e is held stationary, the spring is wound up. A spring-dog, l , Fig. 1, which engages with the perforations i in the disk h , prevents said disk from turning in the wrong direction. On the arbor e is firmly mounted an escapement-wheel, m , which is situated beneath the outer bridge, f , and on the outside of this bridge is situated a balance, n , which turns loosely on the arbor e , and is held down in the proper position by an arm or lever, o , which extends from an anchor, p . This anchor swings on pivot q , and its pallets engage with the teeth of the escapement-wheel. The balance is made in the form of a flat plate, on the opposite ends of which are secured heavy projections r , while from said plate rises a pin, s , which engages with a slot in the anchor-lever o . (See Fig. 1.)

The projections r are of such weight that the balance, when in motion, acquires the requisite momentum, and they also form stops whereby the oscillations of the balance are confined within the desired limits, since they strike the anchor or the anchor-lever whenever, from some cause, the balance oscillates violently, which is the case when the device is fully wound up, and when it is shaken or otherwise moved or thrown about, as happens with all toys.

By this arrangement I am enabled to produce a simple and durable toy watch; or, if the form of the case A is changed, a toy clock can be produced without departing from my invention.

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

1. The combination, in a toy watch, of a stem arranged to revolve in a socket in the sides of the case, a spur-wheel mounted on this stem, a central arbor which carries the

hand or hands, a disk which is loosely mounted
on this arbor and provided with perforations
to engage with the spur-wheel on the stem, a
spring fastened at one end to the central ar-
5 bor and at its opposite end to the perforated
disk, an escapement-wheel which is firmly
connected to the central arbor, a balance
which turns loosely on the central arbor, and
an anchor which is acted on by the balance
10 and by the escapement-wheel, substantially as
and for the purpose described.

2. The combination, with the escapement-
wheel, the anchor, and the lever which ex-

tends from the anchor, of a balance which is
held in position on its arbor by the anchor- 15
lever, and of projections on said balance which
form stops to confine the oscillations of the
balance within the desired limits, substantially
as set forth.

In testimony whereof I have hereunto set 20
my hand in the presence of two subscribing
witnesses.

LAZARUS FRIED.

Witnesses:

W. HAUFF,
JAS. L. NORRIS.