Dec. 18, 1928. 1,695,593

K. LANDENBERGER

SAVINGS CLOCK

Filed Jan. 4, 1928

Fig. 1

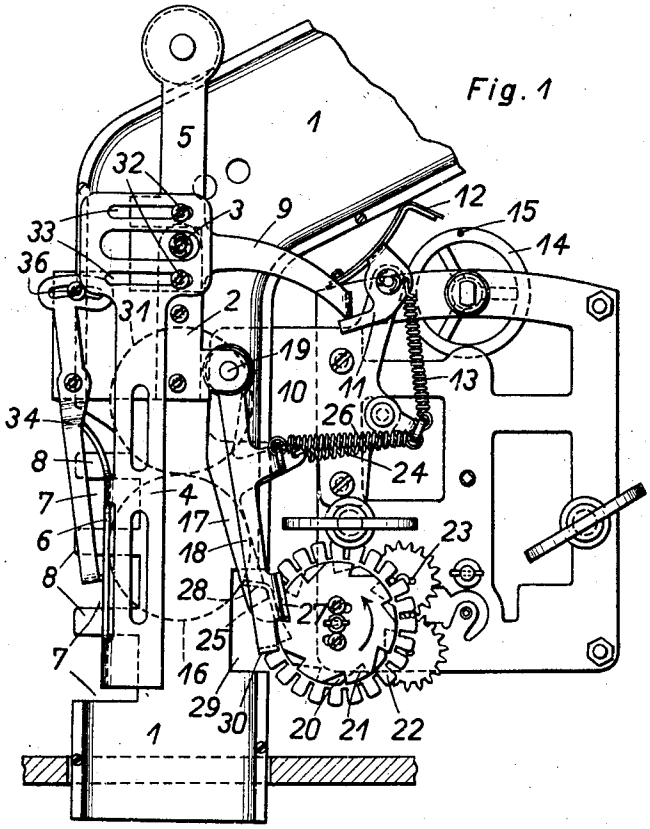



Fig. 2

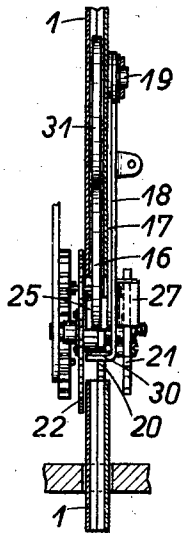



Fig. 4

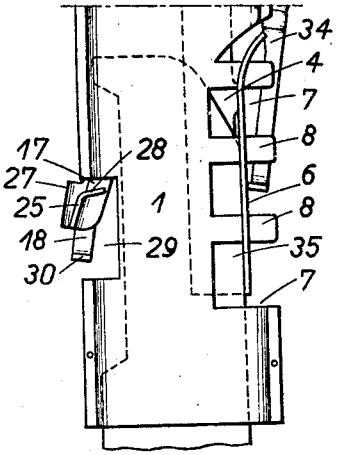
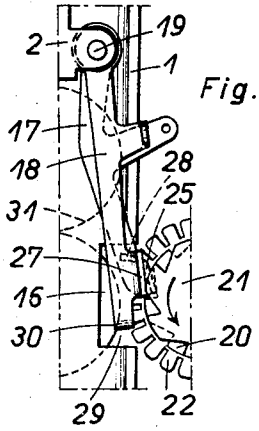



Fig. 3




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# UNITED STATES PATENT OFFICE.

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## SAVINGS CLOCK.

Application filed January 4, 1928, Serial No. 244,453, and in Germany October 5, 1927.

My invention relates to savings clocks of that type in which the inserted coin is intercepted by two members which project in a lateral recess of the coin channel and which allow the coin to slide down slowly, wherein the latter, so long as it remains in the channel, holds a lever acting upon the locking mechanism of the clock movement in the releasing position and, as soon as it falls out, allows this lever to enter the locking position, if a second coin be not inserted. In a known clock of this type one of the said two members is formed by a slowly rotating disc having angular recesses and arms formed thereby, and the other member is formed by a spring operated lever which is at first held by one of the arms on said disc in position to intercept a coin in the coin channel, but after said disc has rotated a certain distance is moved by its spring into one of the recesses on said disc to permit the coin to be released and to be intercepted by one of the arms on said disc, and on further rotation of said disc is moved back by the next succeeding arm into intercepting position.

Now, according to my invention, the said two intercepting members are both formed by spring operated levers which project a certain distance one above the other into said lateral recess of the coin channel and are alternatively moved into intercepting position by two toothed discs rotating with each other and displaced to each other at a certain angle. In this construction the first intercepting lever (as well as the second) has already finished its movement into intercepting position when the coin strikes upon it, whilst in the known construction the lever is obliged to move somewhat further and to lift the coin somewhat, wherein it easily happens that the latter becomes clamped.

In the accompanying drawings Fig. 1 shows the mechanism of a savings clock constructed according to my invention with the locking lever in the releasing position in front view, Fig. 2 shows the coin channel with the intercepting device in side view, Fig. 3 shows a part of the coin channel with the intercepting device in another position of the latter in front view, and Fig. 4 shows parts of the coin channel and of the locking lever in back view.

To the front wall of the coin channel 1 there is fixed a plate 2 on which is pivotally mounted at 3 the locking lever 4, 5. The rearwardly bent part 6 of the lever arm 4 projects into four lateral recesses 7 disposed one above another in the two walls of the channel 1 and is provided with three pairs of slots, through which project the three pairs of tongues 8 separating the recesses 7 from each other. The laterally projecting part 9 of the lever arm 5 acts upon the locking device of the clock movement. This device is formed by an oscillating member 11 having a resilient hook 12 and being mounted upon the plate 10 supporting the channel 1.

If there be no coin in the channel, the lever 4, 5 allows the oscillating member 11 to take under the action of a spring 13 such a position that the hook 12 projects into the path of a pin 15 fixed to the clock balance 14 and thus stops the latter together with the clock movement. If a coin 16 be inserted it slips between the lever part 6 and the oppositely disposed edge of the channel 1 and thereby brings the lever 4, 5 into the releasing position indicated in the drawing, in which the same holds the oscillating member 11 in such a position that the hook 12 allows the balance 14 to swing freely.

The device which intercepts the inserted coin 16 and holds it in the channel 1 for a certain space of time consists of two levers 17 and 18, which are mounted on the plate 2 at 19 one behind another and movable independently of each other, and of two equal ratchet discs 20 and 21, which are secured to a toothed wheel 22 a certain distance one behind another and displaced to each other at an angle corresponding to half the circular pitch of the ratchet gearing. The wheel 22 is rotated slowly by a pinion 23 of the clock movement in the direction indicated by the arrow. A spring 24 attached to a laterally projecting lug of the lever 17 continuously presses the latter with its rearwardly bent lug 25 upon the periphery of the disc 20, and a spring 26 attached to a laterally projecting lug of the lever 18 continuously presses the latter with its forwardly bent lug 27 upon the periphery of the disc 21.

When the parts are in the position indicated in Fig. 1, the lug 25 of the lever 17 rests on a tooth of the disc 20 and the laterally bent end 28 of this lever projects into a lateral recess 29 of the channel 1 to such an extent, that it intercepts the firstly inserted coin 16, whilst the lug 27 of the lever 18 rests in a tooth-gap of the disc 21 and the rearwardly bent end 30 of this lever projects a little only into the

said recess. But in the further rotation of the discs 20 and 21 the lug 27 of the lever 18 rises on the next succeeding tooth of the disc 21, whereby this lever is moved in such manner that its end 30 projects into the recess 29 to the same extent as the end 28 of the lever 17, whilst after a rotation of the discs through an angle corresponding to half the circular pitch the lever 17 falls under the action of the spring 24 with its lug 25 into the next succeeding tooth-gap of the disc 20, wherein the coin 16 falls down from the end 28 and is intercepted by the end 30; see Fig. 3. In further rotation of the discs 20 and 21 vice versa the lug 25 of the lever 17 rises on the next succeeding tooth of the disc 20, whereby this lever is moved in such manner that its end 28 projects into the recess 29 to a greater extent again, whilst after the discs have again rotated through an angle corresponding to half the pitch, the lever 18 falls under the action of the spring 26 with its lug 27 into the next succeeding tooth-gap of the disc 21, wherein the coin 16 falls down from the end 30 and out of the channel 1 and the second coin 31 is intercepted by the end 28. The parts are then again in the position indicated in Fig. 1. If there be no second coin in the channel 1, the locking lever 4, 5 swings back, as the first coin 16 falls out, and with it also the oscillating member 11, so that the hook 12 again stops the balance 14 together with the clock movement.

Whilst in known savings clocks a suitable channel for each set of coins of different size is needed and the locking lever as well as the intercepting device need to be adjusted to the respective coin size, in the present construction a single channel suffices for all coin sizes within certain limits, and in every case the locking lever only needs to be adjusted to the respective coin size, which is easily and readily performable. For this purpose the arm 4 of the locking lever is secured to the arm 5 by means of screws 32 which pass through parallel transverse slots 33 of the arm 4 into the arm 5 so that the former is adjustable transversely to the channel 1, and on the plate 2 there is provided an adjustable stop piece for the locking lever. This stop piece is formed by a lever 34, which, after the arm 4 has been adjusted to the diameter of the respective coin by means of a rule 35 (Fig. 4), the width of which is equal to this diameter, is locked by means of a screw 36 (Fig. 1) in such manner that its lower end lies close to the part 6 of the arm 4 and thus limits the movement of the lever 4, 5 in the releasing position. As the recess of the channel 1 for the part 6 of the arm 4 is divided by the tongues 6 into smaller parts 7, the coins are prevented from falling out through this recess.

What I claim as my invention and desire to secure by Letters Patent is:

1. In a savings clock, a coin channel, means for engaging the clock movement to prevent the clock from running, means actuated by the weight of a coin for moving said first mentioned means to permit the clock to run, two spring operated members for intercepting a coin in said channel, said members projecting a certain distance one above another into a lateral recess of said channel, and means actuated by the clock movement for moving said members into intercepting position alternatively.

2. In a savings clock, a coin channel, means for engaging the clock movement to prevent the clock from running, means actuated by the weight of a coin for moving said first mentioned means to permit the clock to run, two spring operated levers for intercepting a coin in said channel, said levers projecting a certain distance one above another into a lateral recess of said channel, and two toothed discs for moving said levers into intercepting position alternatively, said discs slowly rotating with each other and being displaced to each other at a certain angle.

3. In a savings clock, a coin channel, means for engaging the clock movement to prevent the clock from running, a lever actuated by the weight of a coin for moving said means to permit the clock to run, said lever having an arm which projects into a lateral recess of said channel and is secured to said lever so as to be adjustable transversely to said channel, and an adjustable stop for said lever arm.

4. In a savings clock, a coin channel, means for engaging the clock movement to prevent the clock from running, and a lever actuated by the weight of a coin for moving said means to permit the clock to run, said lever having an arm which projects into a lateral recess of of said channel and is secured to said lever so as to be adjustable transversely to said channel, said recess being divided by tongues projecting through slots provided in said lever arm.

In testimony whereof I affix my signature.

KURT LANDENBERGER.