

E. E. DUNGAN & C. M. KLUMP.

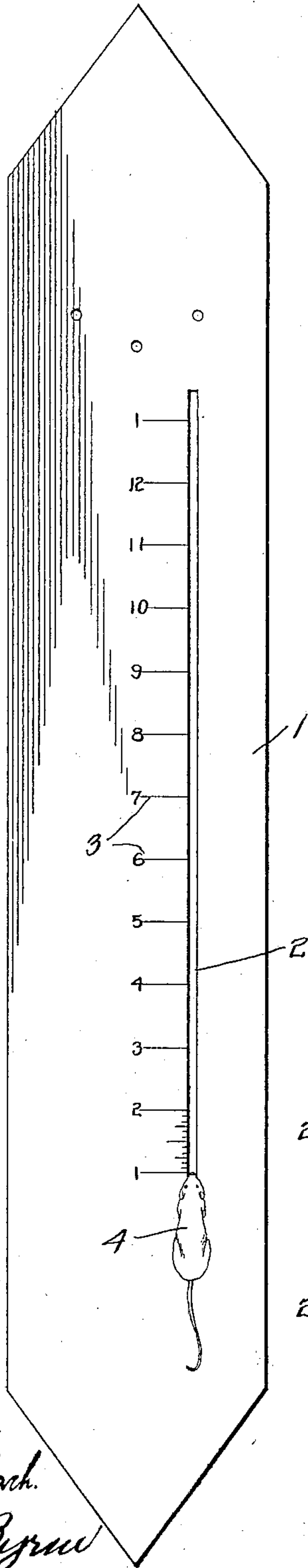
CLOCK.

APPLICATION FILED AUG. 17, 1909.

964,005.

Patented July 12, 1910.

Fig. 1.



Witnesses  
C. H. Reichenbach.

H. H. Bryan

Fig. 2.

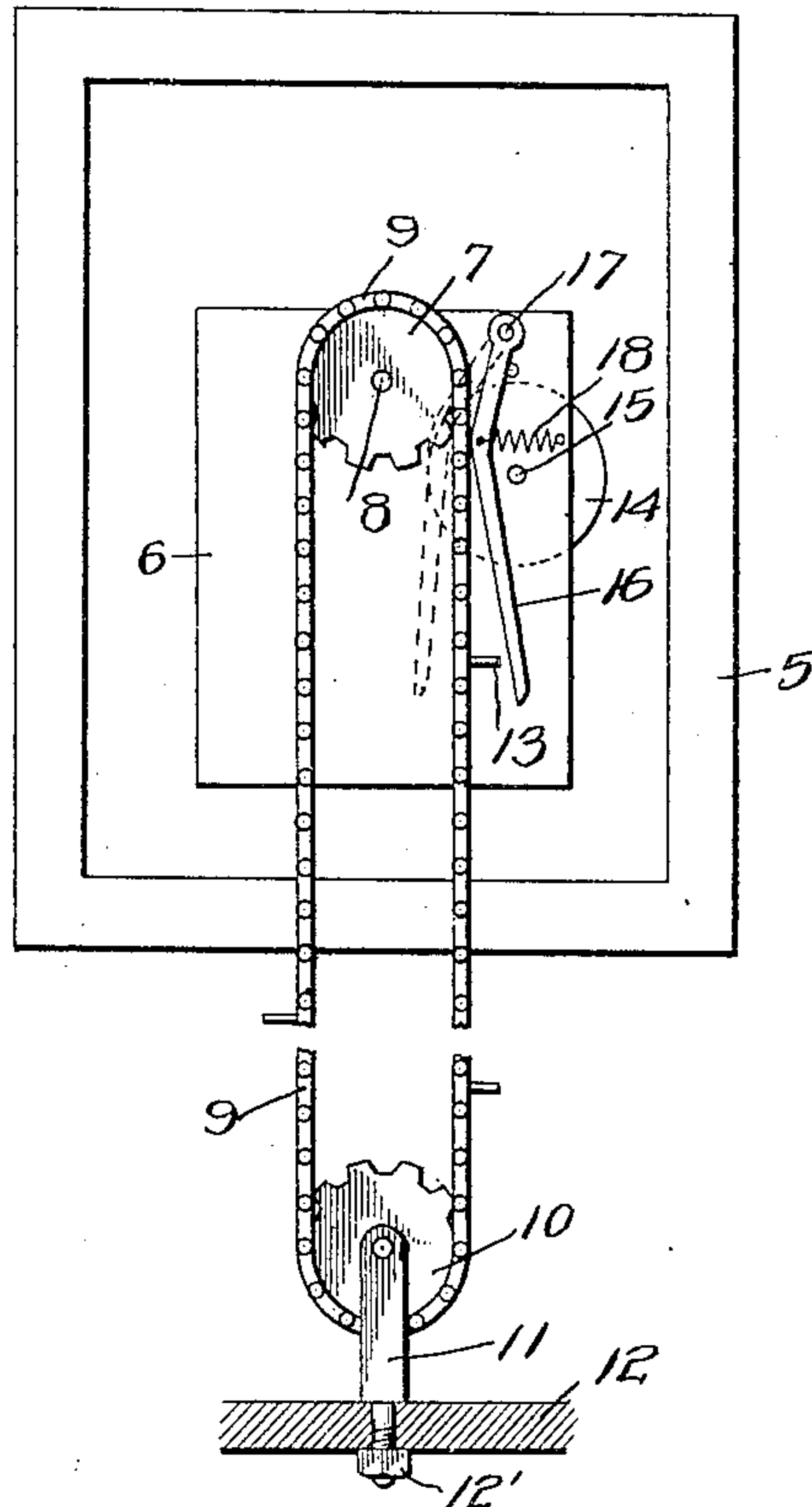
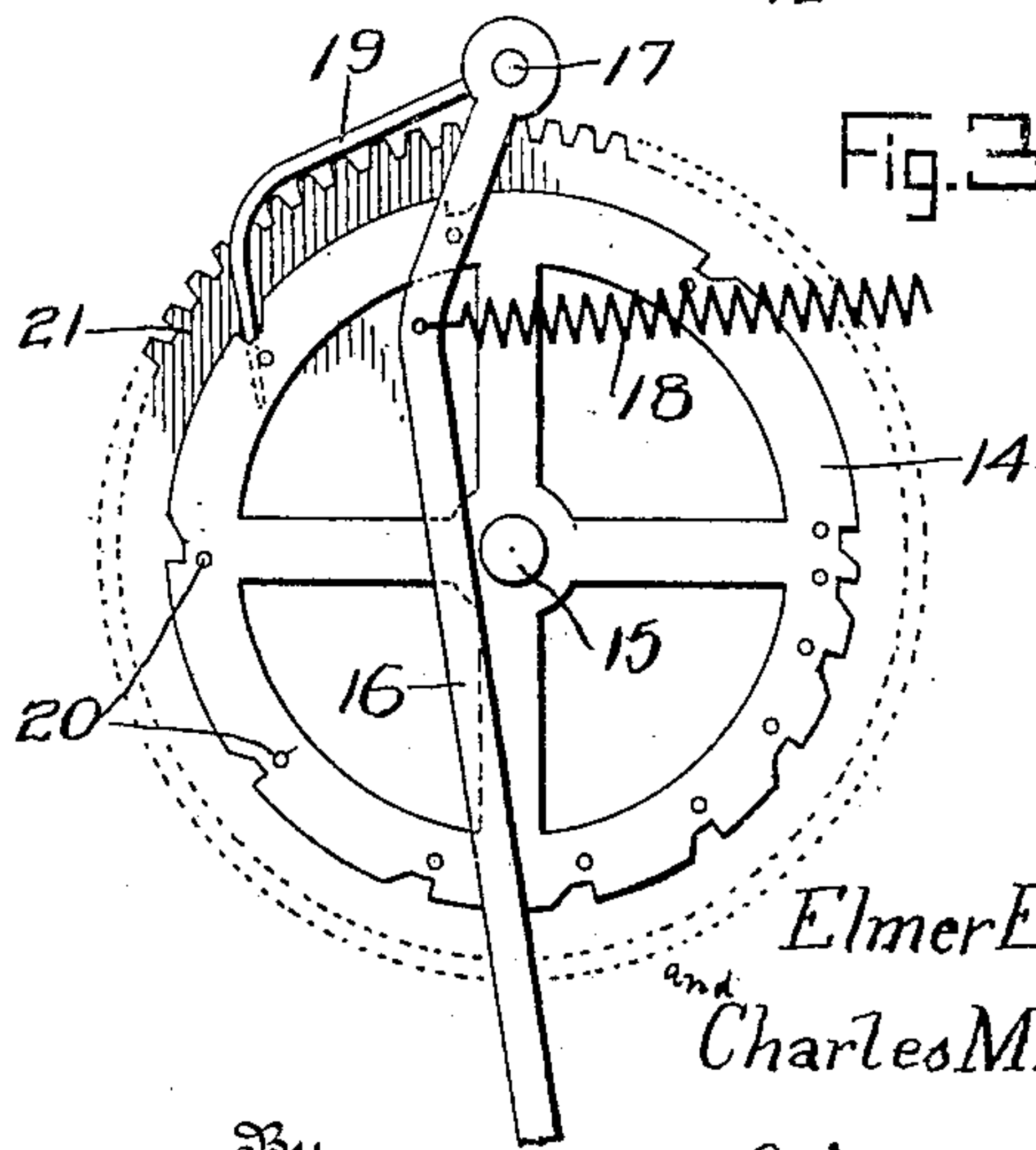


Fig. 3.



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# UNITED STATES PATENT OFFICE.

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CLOCK.

964,005.

Specification of Letters Patent. Patented July 12, 1910.

Application filed August 17, 1909. Serial No. 513,259.

*To all whom it may concern:*

Be it known that we, ELMER E. DUNGAN and CHARLES M. KLUMP, citizens of the United States, residing at No. 1208 Chestnut street, Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Clocks, of which the following is a specification.

The present invention relates to clocks of the vertical dial type, or those more generally known as dickory, dickory, dock clocks, and has for its purpose to provide an accurate time keeping piece of that character embodying additional improvements over our patent of like structure bearing No. 912,833, under date of February 16, 1909.

The improvements in the present instance relate to the structure of the body of the clock; the manner of disposing the clock mechanism thereon; and the means for releasing the traveling indicator; and in so assembling and relating these parts that the complete article costs considerably less to manufacture and is more compact and neat in its appearance as a finished product.

A further purpose of the present invention is in providing the releasing mechanism with means whereby the same goes through its complete operative movement on each striking of any hour thereby insuring the positive return to the starting point of the indicator, or traveling pointer, every time it reaches the top of the scale and the clock begins the strike of any hour.

With the above objects in view our invention is described in further detail in the following specification, and the points of novelty thereof set forth in the appended claims.

In the accompanying drawing which shows the invention in its preferred embodiment: Figure 1 is a front elevation of the clock. Fig. 2 is a rear elevation thereof with parts removed and in section, and Fig. 3 is a detail view of the indicator releasing means and mechanism for actuating the same.

Referring to the several figures more in detail and with like characters of reference indicating corresponding parts in the different views shown, the numeral 1 designates the front piece or vertical dial which is provided with a slot or way for the indicator or figure, which in the present instance is a miniature model of a mouse. Along one side of the slot 2 are arranged the characters

3 which indicate the several hour periods of the day. The features so far described are precisely the same as those disclosed in the other patent above referred to and need not therefore be described in further detail here.

On the rear upper side of the dial 1 is suitably supported a frame or casing 5 adapted to contain the clock mechanism indicated by the numeral 6. The usual minute wheel is here designated by 7 and is fixed to the arbor 8, and as in the other instance said wheel 7 is provided with and propels a chain 9 which is endless. The lower loop of the chain 9 turns upon a pinion 10 that is journaled within a fork bearing 11, and said fork is in turn held in fixed position to a laterally extending member 12 by means of a nut 12'. Arranged along the chain 9 at the proper intervals are three carriers or pins 13 whose function is to lift the indicator 4 in a manner that will be obvious.

The clock mechanism used in the present instance employs the usual alarm actuating wheel 14 that is turned through the medium of the pinion 21 which is caused to be moved after the usual manner. At precisely those points where the wheel 14 is grooved or notched there are arranged pins 20 which have for their function to engage with and trip the finger 19 on each stroke of the hour. The finger 19 is fixed to a pintle 17 which also has secured thereon a releasing arm 16 whose design is substantially that shown in Figs. 2 and 3. The releasing arm 16 is provided with a tensioning spring 18 that has one of its ends secured to the frame 6 of the clock mechanism, and through the medium of this spring the arm 6 is normally directed into that position shown by the full lines in Fig. 2. By means of the several pins 20 which successively engage with the finger 19 said releasing arm 16 is caused to assume precisely that position shown by the dash lines in the same view. It will be understood that this latter position of the arm 16 is effected each time one of the pins 20 engages with the finger 19, and which as stated above occurs on the striking of every hour.

The operation of the present invention is substantially the following: The turning of the pinion 7 causes the chain 9 to travel in that direction wherein the pins 13 will engage with and lift the indicator 4, and as said indicator travels up the dial the various hours of the day are told thereby. On



reaching the uppermost end of the slot 2 the finger 19 is engaged by that pin 20 which corresponds to the notch in the wheel 14 that would cause the striking of the hour  
 5 "one o'clock". As the finger 19 is released from engagement with said pin the releasing arm 16 is caused to be thrown into that position shown in Fig. 2 when it causes the indicator 4 to disengage from its carrier 13 and  
 10 permits said indicator to fall by gravity to the bottom of the slot.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is:—

15 1. In a clock, a vertical scale indicating hours and divisions thereof, a figure or pointer adapted to move along such scale, an endless chain having pins adapted to engage said figure or pointer, a clock mechanism for imparting movement to the chain,  
 20 a releasing arm for said pointer, and a means operable through the clock mechanism adapted to actuate said arm whereby to release said pointer at predetermined  
 25 times and allow the same to fall by gravity, substantially as described.

2. In a clock, a vertical scale indicating hours and divisions thereof, a figure or pointer adapted to move along such scale,  
 30 an endless chain having pins adapted to engage said figure or pointer, a clock mechanism for imparting movement to the chain, a releasing arm for said pointer mounted upon a pintle and having a finger for actu-  
 35 ating the same, and a plurality of pins carried by a movable part of said clock mechanism adapted to engage said finger whereby to move the arm to cause the release of said  
 40 pointer at predetermined times and allow the same to fall by gravity, substantially as described.

3. In a clock, a vertical scale indicating hours and divisions thereof, a figure or

pointer adapted to move along such scale, an endless chain having pins adapted to  
 45 engage said figure or pointer, a clock mechanism for imparting movement to the chain, a releasing arm for said pointer mounted upon a pintle and having a spring normally  
 50 tensioning the same, said pintle having a finger fixed thereon whereby to actuate said releasing arm, a plurality of pins carried by a movable part of said clock mechanism and adapted to engage said finger each time  
 55 the pointer indicates the hour whereby to actuate the arm and cause the same to be moved under the tension of said spring, substantially as described.

4. In a clock, a vertical scale indicating hours and divisions thereof, a figure or  
 60 pointer adapted to move along such scale, movable means having projections adapted to engage said figure or pointer, a clock mechanism for imparting movement to said means, means for releasing said pointer, and  
 65 means operable through the clock mechanism to actuate said means to release the pointer at predetermined times and allow the same to fall by gravity.

5. In a clock, a vertical scale indicating  
 70 hours and divisions thereof, a figure or pointer adapted to move along such scale, an endless member having projecting pins, a clock mechanism for imparting movement to said endless member, a pivotally mounted  
 75 spring actuated member, and means controlled thereby for releasing said figure or pointer at predetermined times to allow the same to fall by gravity.

In testimony whereof we affix our signatures, in presence of two witnesses.

ELMER E. DUNGAN.  
 CHARLES M. KLUMP.

Witnesses:

ANDREW M. STOKES,  
 JOSEPH A. TANEY.