E. E. DUNGAN.

CLOCK.

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912,833.

Patented Feb. 16, 1909.

Fig. 1.

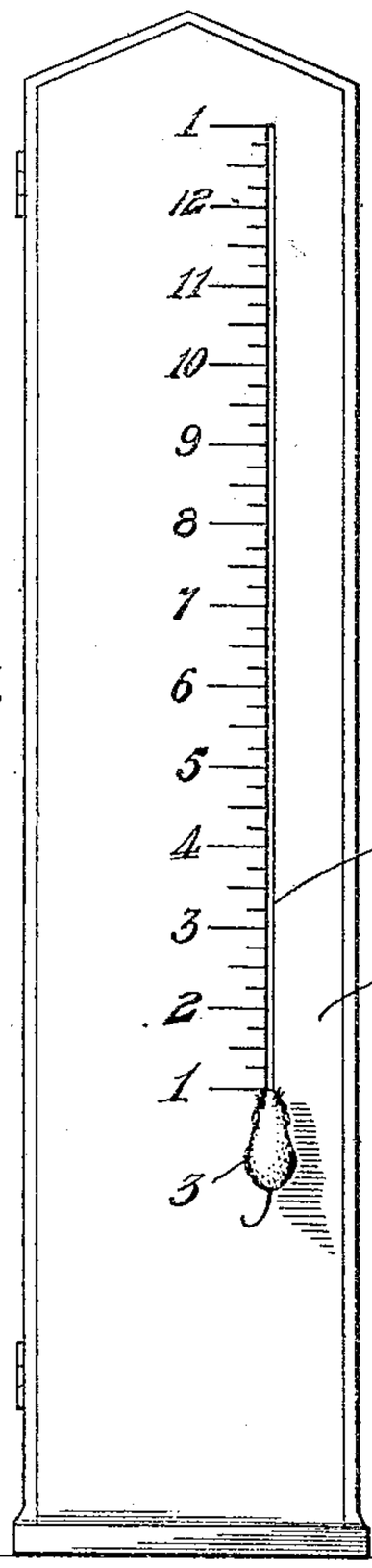
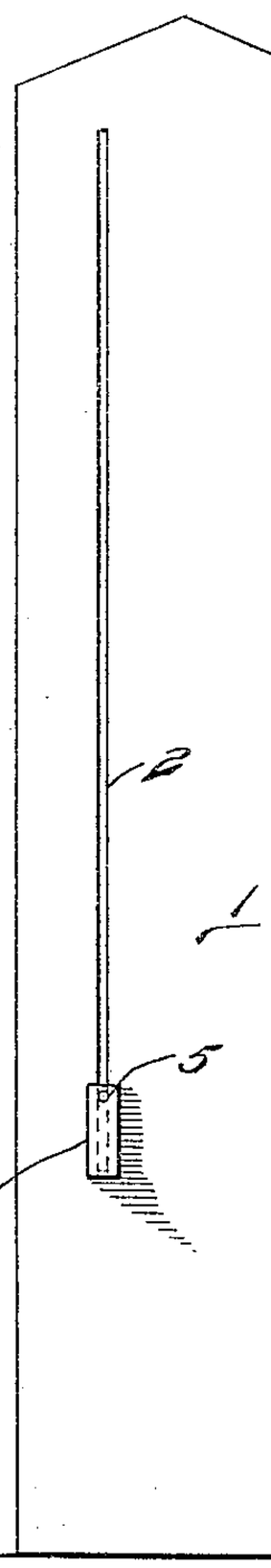


Fig. 2.



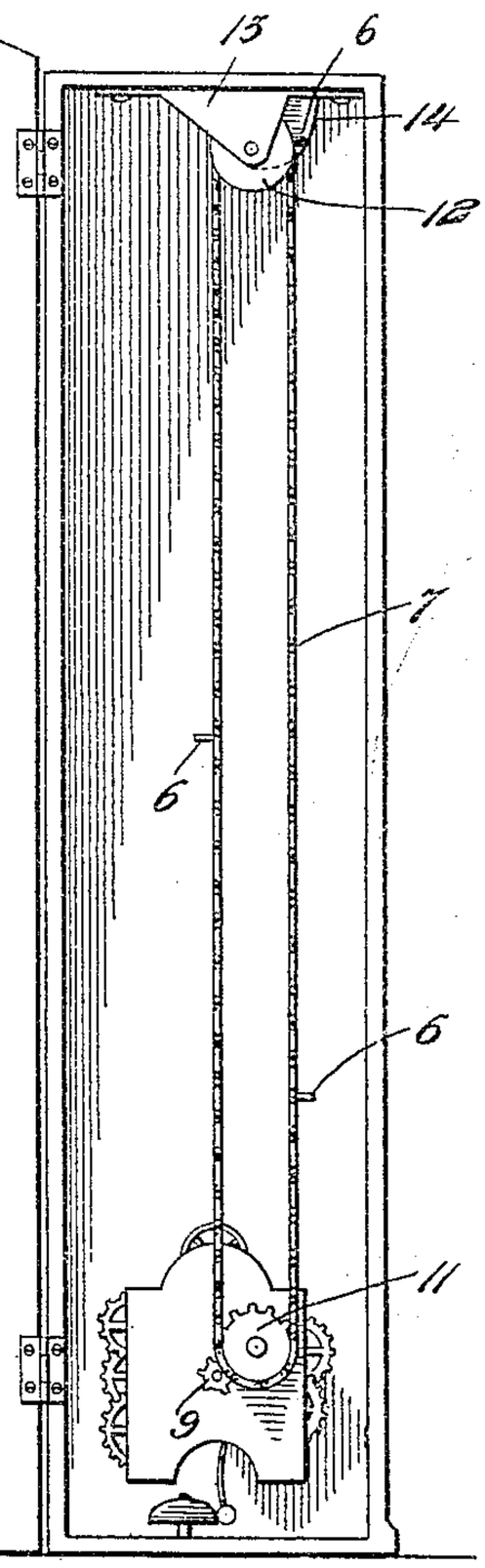
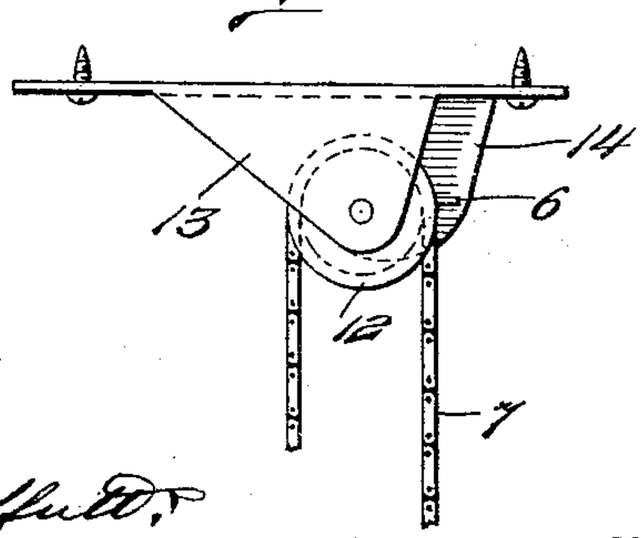
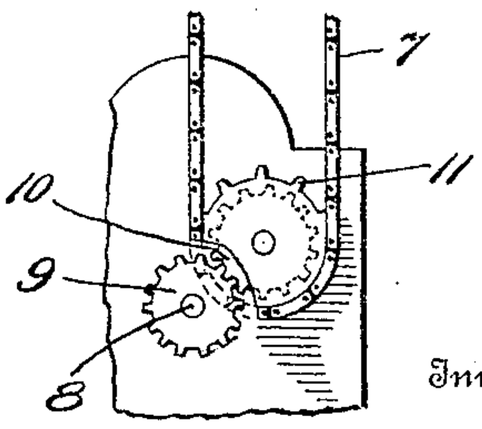


Fig. 4.

Fig. 3.





Witnesses

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CLOCK.

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Application filed October 29, 1908. Serial No. 460,092.

To all whom it may concern:

Be it known that I, ELMER E. DUNGAN, a citizen of the United States, residing at Fort Washington, in the county of Montgomery and State of Pennsylvania, have invented certain new and useful Improvements in Clocks, of which the following is a specification.

This invention relates to clocks.

The object of the invention is to provide a clock wherein a figure or pointer is carried over the face of a vertical scale indicating hours and divisions thereof, and wherein when a predetermined hour is reached the figure or pointer will automatically be returned to a starting point.

Further the object is to provide a clock having a vertical dial, a figure or pointer carried over the face of the clock to indicate by its position hours and divisions thereof, a clock movement for actuating the pointer or figure, and means for connecting the clock mechanism and the figure or pointer of such form as to avoid shock to or interference with the accuracy of the clock mechanism.

With these objects in view the invention consists of the novel generic and specific features of construction and arrangement of parts substantially as hereinafter described and claimed.

The invention is illustrated in the accompanying drawing in which:—

Figure 1 is a front elevation of a clock constructed in accordance with my invention. Fig. 2 is a view of the interior of the clock case showing the mechanism in position therein, and showing the inner face of the clock front; Fig. 3 is a detail view of the means for supporting the upper end of the endless chain by which the pointer is moved, and showing the means for disengaging the figure or pointer from the chain; Fig. 4 is a detail view showing the connection between the clock mechanism and the endless chain which is actuated by it.

In this drawing 1 represents the front of the clock case which is preferably attached to the body of the case by hinges permitting the front to be swung outward to expose the interior of the case and give access to the mechanism of the device. Arranged on the face of the front is a vertical series of figures or marks beginning at the number 1 at the bottom, running consecutively to the number 12 and terminating with the numeral 1 at the top. The spaces between the characters are divided by marks indicating any desired divisions of hours. In the present illustration the spaces are shown as divided into spaces indicating halves and quarters of hours. Adjacent to the series of figures is a slot 2 through which extends a projection from a figure or pointer 3 which is designed to be moved to be brought opposite a character or mark indicating the time by mechanism as described hereinafter. A washer 4 attached to the projection from the figure or pointer bears on the inner face of the door and serves to retain the figure or marker in place. A projection 5 extends from the figure or pointer through the slot 2 into the path of movement of pins 6 extending from an endless belt or chain 7 which is given motion from a clock mechanism located in the lower portion of the frame.

The clock mechanism, which may be of any desired character has fixed to its minute arbor 8 a gear 9 which meshes with the teeth of a gear 10 mounted on the frame of the clock movement. The gear 10 is rigidly connected to means for giving movement to the endless belt or chain 7. In the form of device herein shown a chain is employed and therefore a sprocket 11 is attached to the gear 10. The diameters of the gears 9 and 10 and the sprocket 11 are such that when the chain is driven by the clock mechanism the chain is driven at such a speed as to cause one of the projections thereon to traverse the space between two of the characters of the scale on the front of the frame in a period of one hour's time. The chain or belt 7 is supported at its upper end by an idle sprocket wheel or pulley 12 which is attached to the upper portion of the interior of the clock by a bracket 13 in a position in line with the sprocket 11. The bracket has one face 14 thereof projecting beyond the face of the sprocket or pulley 12 in order that when the projection 5 from the figure or pointer is brought into contact with the portion 14 of the bracket the projection will be freed from the pin of the chain by which it was raised and the figure or pointer will be allowed to drop by gravity to the bottom of the slot in the front of the case.

In the operation of the clock the chain is initially set to bring one of the pins 6 opposite to the character on the scale on the front of the case indicating the correct time at the moment of setting and the figure or pointer is then so placed that the projection 5 will

rest upon the upper surface of the pin when the front of the case is closed. As the chain is moved by the clock mechanism the figure or pointer is correspondingly moved with the result that the figure by its position always correctly indicates the time.

The numeral 1 at the top of the scale is so located relatively to the face 14 of the bracket that when the figure or pointer indicates the time as one o'clock, the figure or pointer will instantly be released and will fall by gravity and assume a position opposite the figure 1 at the lower end of the scale. Thus an attractive and accurate time piece, particularly adapted when a mouse is used as a pointer, as in the present illustration, for teaching children to read the time is provided. Inasmuch, as the means for releasing the pointer is not connected with the clock mechanism and as the dropping of the figure or pointer has no effect on the mechanism, the accurate movement of the latter is not impaired.

The chain is provided with a plurality of pins 6 placed at equal distances from each other, the space between adjacent pins being the same as that between the character indicating one o'clock at the top of the scale and that at the bottom indicating the same time. Therefore, when the figure or pointer falls its projection immediately contacts with a pin 6 opposite the mark indicating one o'clock and is moved upward by this pin as before. In this way the correct indication of the time at all times by the position of the figure or pointer is assured.

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

1. In a clock a vertical scale indicating hours and divisions thereof, a figure or pointer adapted to move along such scale, an endless belt or chain having pins capable of engaging the figure or pointer, a clock mechanism for imparting movement to the belt or chain, and a projection in the path of movement of the figure or pointer whereby the latter is released at predetermined times and allowed to fall by gravity, substantially as described.

2. In a clock, a vertical scale, a slot adjacent to the scale, a figure or pointer having a projection through the slot, an endless chain having projecting pins, a clock mechanism, an idle pulley for supporting the endless chain and a bracket on which the idle pulley is mounted, the bracket being provided with a projection adapted to engage that on the figure or pointer and to disengage it from the endless chain, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

ELMER E. DUNGAN.

Witnesses:
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