J. R. MOORE.

CLOCK ATTACHMENT.

APPLICATION FILED JAN. 11, 1915.

**1,142,604.** Patented June 8, 1915.

Fig. 1.

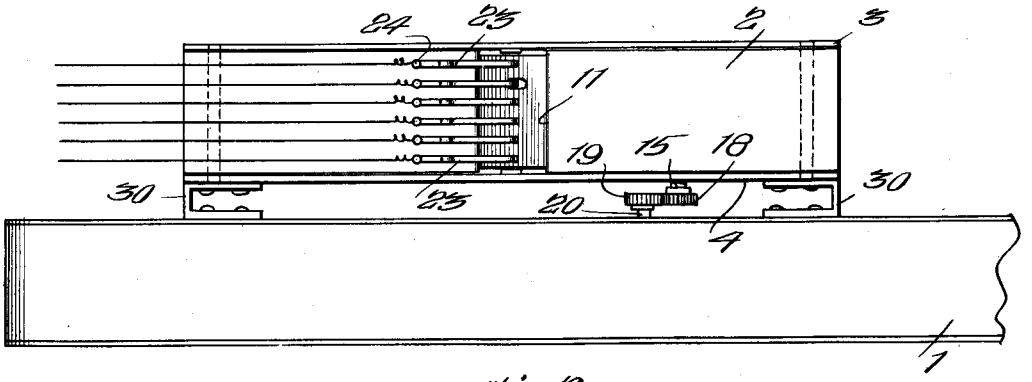



Fig. 2.

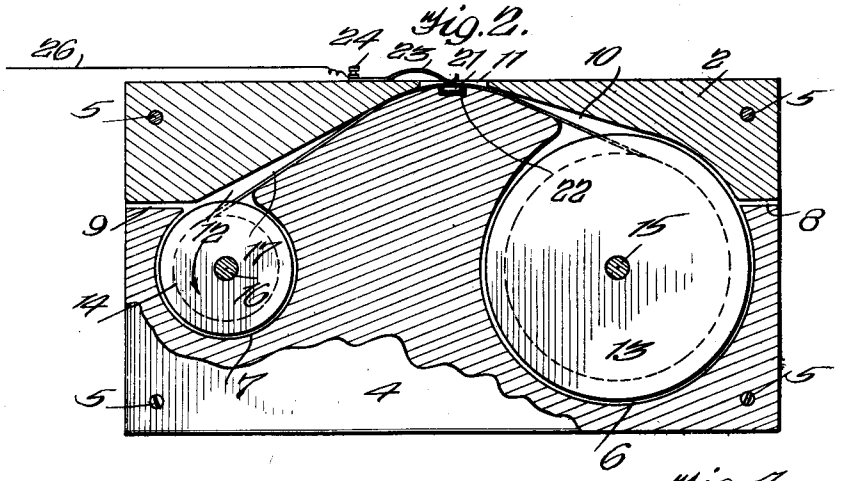



Fig. 3.

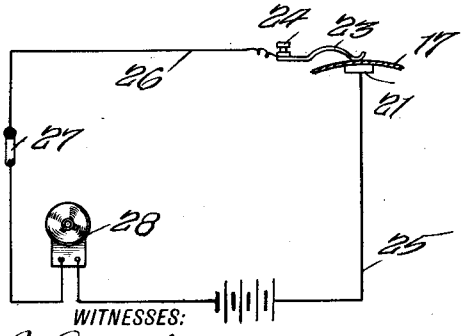
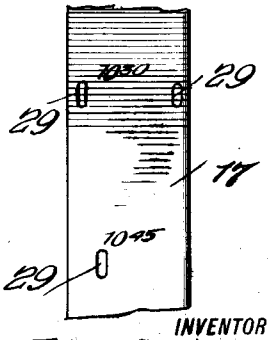



Fig. 4.




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# UNITED STATES PATENT OFFICE.

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## CLOCK ATTACHMENT.

1,142,604. Specification of Letters Patent. Patented June 8, 1915.

Application filed January 11, 1915. Serial No. 1,544.

*To all whom it may concern:*

Be it known that I, JOHN R. MOORE, a citizen of the United States, and a resident of Winona, in the county of Smith and State of Texas, have invented a new and useful Improvement in Clock Attachments, of which the following is a specification.

My invention is an improvement in clock attachments, and has for its object to provide an attachment of the character specified, especially adapted for use with alarm clocks for operating a series of alarms or signals arranged in different rooms of a building or in other separated stations for simultaneously sounding the alarms or for operating the signals at predetermined times.

In the drawings:—Figure 1 is a top plan view of the attachment, Fig. 2 is a side view with parts broken away, Fig. 3 is a diagrammatic view of the circuit, and Fig. 4 is a plan view of a portion of the strip for making the electrical connection.

The present embodiment of the invention is shown in connection with a clock indicated generally at 1, and the attachment comprises a casing in the form of a central block 2, having side plates 3 and 4, respectively, which are connected to the block at the opposite sides thereof by means of screws 5. The block is provided with two transverse recesses 6 and 7, of circular cross section, and the recesses are connected to the adjacent ends of the blocks by means of passages 8 and 9, respectively.

A passage leads from the recess 6 to the recess 7, the said passage consisting of two portions 10, 11 and 12, the portions being continuous with each other and with the recesses or openings. The portion 11 of the passage is an opening at the top of the block between the plates, the said opening being of considerable width as indicated, and the portions 10 and 12 communicate with the ends of the portion 11.

Each of the portions 10 and 11 is tangential to the adjacent recess 6 or 7, as the case may be, and each portion is of greatest width adjacent to the recess, gradually decreasing in width toward the portion 11.

Reels 13 and 14 are arranged in the recesses 6 and 7, each reel being secured to a shaft, 15 for the reel 13 and 16 for the reel 14, and a paper strip 17 winds upon the reels at its ends. The reel 13 is the delivery or storage reel, while the reel 14 is the receiving reel.

The shaft 15 of the reel 13 extends through the plate 4 and beyond the same, and a pinion or spur gear 18 is secured to the extended end of the shaft outside of the casing 2—3—4. This pinion meshes with another pinion 19 on a shaft 20 of the clock, the said shaft being rotated continuously when the clock is running.

At the portion 11 of the passage 10—11—12, a contact plate 21 is arranged, the said plate being held in an insulating block 22 at the bottom of the recess, and between the side edges of the said recess. The contact plate or strip extends the full width of the block 1, that is, the full width of the passage 11, and the said strip is of conducting material.

A series of spring contact fingers 23 is arranged at one side of the portion 11 of the passage 10—11—12, the said fingers being six in number in the present instance. Each of the said fingers is secured to the adjacent side edge of the block 2, by means of a binding post 24, and the free end of each finger is designed to normally contact with the contact strip or plate 21.

It will be noticed that each of the fingers is arched upwardly intermediate its ends, and at the end adjacent to the contact strip the extremity of the finger is turned upwardly, so that a convex surface will engage the contact strip. The contact fingers and the strip 21 are interposed in an electrical circuit shown diagrammatically in Fig. 3.

In this circuit a lead wire 25 connects one pole of the battery with the contact strip 21. Another lead wire 26 is connected with the other pole of the battery at one end and at the other end with the binding post 24 of the contact fingers.

A cut-out switch 27 is interposed in the circuit and a signal 28, the said signal being in the present instance, an electrically operated bell.

The wire 26 may be branched if desired, the branches corresponding in number to the number of the contacting fingers and one branch being connected with each binding post, or the fingers may be connected or arranged in the circuit in any other desired manner, as for instance, in series or in parallel.

The paper strip 17 before mentioned, passes between the contact strip 21 and the adjacent ends of the contact fingers and the said strip, is provided with openings or perforations 29, arranged at predetermined intervals and in positions corresponding to the location of the contact fingers 23.

The slots or perforations 29 are arranged in a certain predetermined manner with respect to the strip and with respect to the remaining mechanism. The slots or perforations are so arranged that at predetermined times each will arrive at a contact finger, permitting the same to pass through the slot or perforation into contact with the strip 21, thus completing the circuit through the alarm or signal 28 and causing the same to operate. As for instance, should the attachment be desired for use in a school to announce the opening and closing time and the recreation periods the perforations or slots 29 will be arranged so that they will arrive at the position 21 at the predetermined time, as for instance at 9, 10:30, 11, 12, 12:30, 2:30, 3 and 4, or at any other periods depending upon the school arrangement.

At nine o'clock one of the perforations will be between a contact finger and the strip, and the finger will pass through the perforation or slot into engagement with the strip, thus completing the circuit which will pass from the battery through the bell or signal, the switch 27, to the binding post 24 through the contact finger and the contact strip and the lead wire 25 to battery.

Whenever an opening or perforation 29 reaches the contact strip 21 the alarm will sound, and it will be evident that these slots or openings 29 may be arranged wherever desired. The strip may be of a length to serve for one day or as many days as may be desired, and when it has passed from the reel 13 to the reel 14, it may be rewound on the reel 13, ready for another passage in the opposite direction.

It will be evident that as many signals may be operated as there are contact fingers, or by arranging the signals in the branch wires as many signals may be operated as may be desired. The attachment, that is, the casing 2—3—4 is connected to the rear of the clock by means of U-shaped brackets 30. The arms of the brackets 30 are connected with the plate 4 and with the rear plate of the clock 1 in any suitable manner. If desired this connection may be releasable. The passages or slots 8 and 9 are for the purpose of inserting or removing the strip.

It will be understood that any desired form of mechanism may be used to cause the reel 14 to wind up the tape as it is unreeled from the reel 13, as for instance, a spring or the like.

I claim:—

An attachment for clocks, comprising a casing consisting of a block having transverse approximately cylindrical recesses spaced apart from each other, and connected by a passage, said passage being tangential to the recesses at its ends and opening at the top of the casing intermediate its ends, a reel in each recess, a paper strip adapted to wind on the reels at its ends and to move through the passage from one reel to the other, covering plates detachably secured to the opposite sides of the block, a plate of conducting material arranged transversely of the casing in the bottom of the passage at the opening and insulated from the block, and resilient contact fingers connected with the block at the opening and adapted to engage the plate at their free ends, the fingers being arranged alongside each other in approximately parallel relation and spaced apart from each other, the paper strip having slots or perforations at predetermined intervals for permitting the free ends of the contact fingers to pass through the said slots or perforations and to engage the plate.

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