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J. MAITLAND.

DEVICE FOR MEASURING HEIGHTS OF INDIVIDUALS.

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NO MODEL.

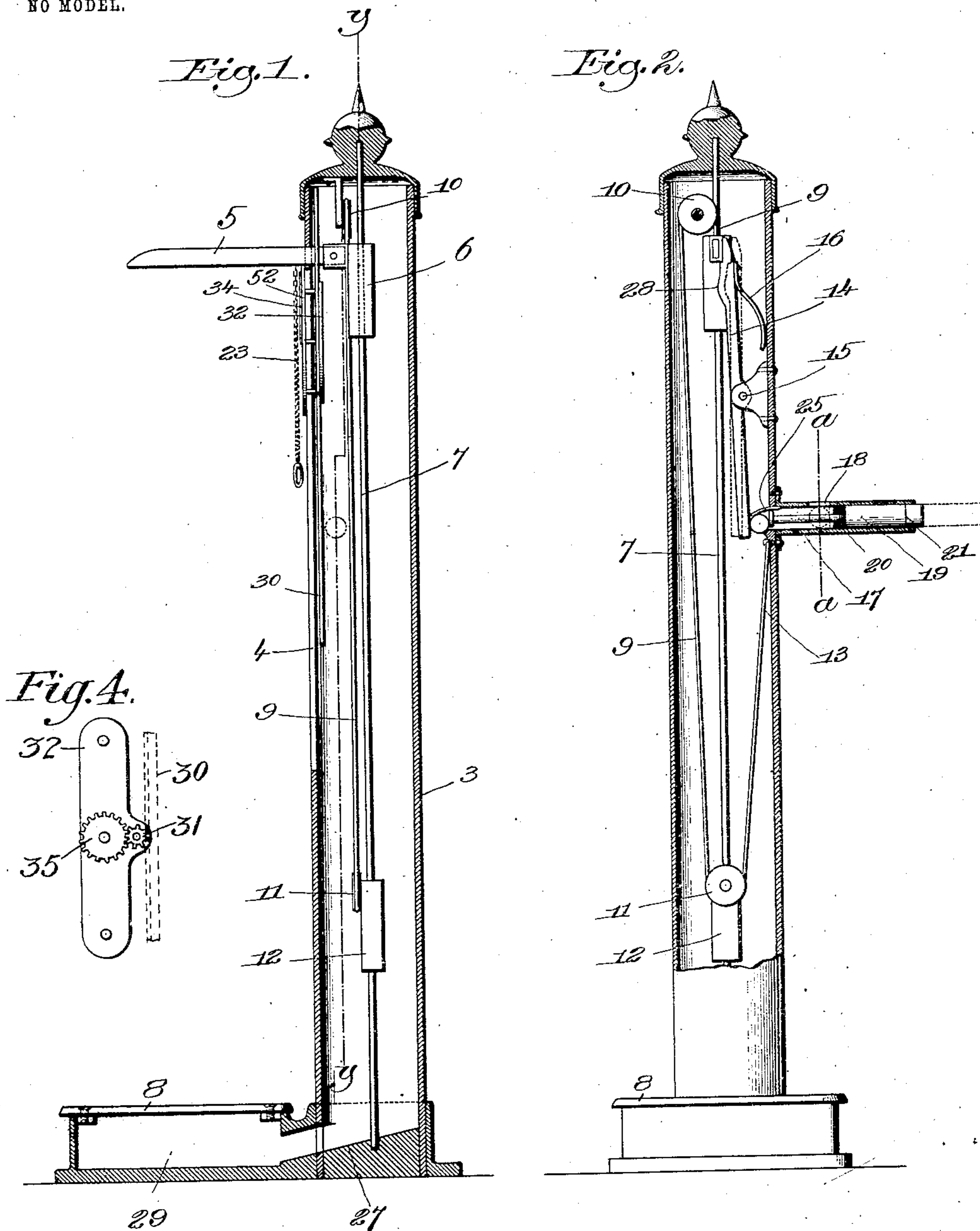


Fig. 3.

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# UNITED STATES PATENT OFFICE.

JOHN MAITLAND, OF SWAMPSCOTT, MASSACHUSETTS.

## DEVICE FOR MEASURING HEIGHTS OF INDIVIDUALS.

SPECIFICATION forming part of Letters Patent No. 750,870, dated February 2, 1904.

Application filed June 25, 1903. Serial No. 162,993. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN MAITLAND, a citizen of the United States, residing at Swampscott, in the county of Essex and State of Massachusetts, have invented an Improvement in Devices for Measuring Heights of Individuals, of which the following description, in connection with the accompanying drawings, is a specification, like numerals on the drawings representing like parts.

This invention has for its object to provide a novel device by which individuals may readily and accurately measure their height.

It comprises a suitable slotted standard having a vertical adjustable coin-controlled measuring-arm extending outwardly through said slot and means to indicate at various positions of said arm the distance which said arm is above the surface on which the individual stands while being measured. The arm is counterweighted and stands normally at the upper end of the slot or at its maximum distance above the surface on which the individual being measured stands, and the measuring is done by drawing the arm downwardly until it strikes the head of the person whose height is to be obtained.

The measuring-arm is normally locked in its elevated position and can only be released by the insertion of a coin in the coin-slot.

Referring to the drawings, Figure 1 is a vertical section through the device at right angles to Fig. 2. Fig. 2 is a vertical section on the line *yy*, Fig. 1. Fig. 3 is a section on the line *aa*, Fig. 2. Fig. 4 is a detail of the indicating mechanism.

3 designates a suitable standard which is hollow and which has at one side the slot 4, through which projects the measuring-arm 5. Said arm is illustrated as being supported by a runner or shoe 6, which runs up and down on a guide 7, inclosed in the casing or standard 3.

The base of the standard or casing 3 has the surface or platform 8, on which the person stands while being measured.

The arm 5 is counterweighted and normally stands at the upper end of the slot 4, as seen in Figs. 1 and 2. As herein illustrated, said arm has secured thereto a strap or flexible

connection 9, which runs over the direction-pulley 10 at the upper end of the casing and thence under a pulley 11, from which is supported a counterweight 12. The end 13 of the flexible connection is secured to any suitable fixed point.

The counterweight 12 is sufficiently heavy to maintain the arm 5 at the upper end of the slot and to return said arm to this position after it has been lowered into contact with the head of the person being measured. The arm is normally locked in its elevated position by means of a spring-latch lever 14, situated on the interior of the casing and shown as pivotally mounted upon the lugs 15. Said latch-lever is normally held in operative position by some suitable means, as the spring 16, but is constructed to be swung into inoperative position, so as to release the arm 5, by the insertion of a coin or other toll.

17 designates a coin-chute, into which the coin is inserted through an opening 18.

19 designates a suitable plunger normally held out of the way of the coin being inserted through the opening 18 by means of a spring 20. After the coin has been dropped through the opening 18, so as to rest within the chute 17, the plunger 19 is pushed forwardly by means of its head 21 and the coin forced through the chute. The chute is so placed that as the coin reaches the inner end thereof it engages the lower end of the latch-lever 14 and is forced by the plunger against the lever, and swings the latter sufficiently to release the arm 5. The latch-lever therefore is released by means of the plunger through the interposition of the coin. When the latch has thus been released, the person standing on the platform 8 may draw the arm 5 downwardly by means of a chain 23 or other pull device until the arm rests against the top of his head. The height at which the arm then stands above the platform 8 indicates the height of the person.

If the coin were free to move horizontally in the chute, it would follow that as soon as the person released the plunger 20 after having pushed it inwardly the spring 16 would tend to swing the latch into engagement with the lever, and in so doing would crowd the



coin back into the chute again. This would necessitate the person holding his hand against the end of the plunger, so as to maintain the latch-lever in its inoperative position until  
 5 after the measuring-arm 5 had been drawn downwardly. It is sometimes inconvenient to do this, and that the latch-lever may be maintained in its inoperative position until the person has had sufficient time to draw the  
 10 measuring-arm 5 downwardly I have provided means for retaining the coin in its forward position, or that which it is in when the lever 14 is moved out of engagement with the arm 5.

15 The means herein illustrated comprises a suitable friction-spring device 25, under which the coin passes as it reaches the end of the chute and which bears against the coin with sufficient friction to prevent it from  
 20 backward movement.

After the coin has been dropped into the opening 18 therefor the plunger may be pushed forward to swing the latch into its inoperative position, and then said plunger  
 25 may be released and the spring 25 will prevent the backward movement of the coin, and thus hold the latch in such inoperative position. As the arm 5 is drawn downwardly it engages the swell or cam portion 28 upon the  
 30 upper end of the latch-levers 14 and throws said lever still farther back into the dotted-line position, Fig. 2. Such movement of the latch-lever withdraws the support for the coin and allows it to drop from the chute to the  
 35 lower portion of the standard 3, where it rolls down the incline 27 into the compartment 29. It will thus be seen that I have provided a coin-controlled apparatus in which there is absolute control of the coin.

40 The indicating mechanism that I preferably employ to register the distance which the arm 5 is above the platform 8 at its various positions comprises a rack 30, secured to the inside of the casing, which meshes with gear 31, carried by a plate 32. This plate 32 is situated  
 45 on the inside of the casing and is rigid with a second plate 52, attached to the arm 5 and situated on the outside of the casing. Said plates have an arbor journaled therein, to the  
 50 end of which is attached a pointer 34. The arbor has on its inner end a gear 35, meshing with the gear 31. With this construction as the arm 5 is drawn downwardly the downward movement of the plate 32 causes the gear 31  
 55 to roll over the rack 30, and thus give rotation to the arbor.

The face of the plate 52 is graduated and

in such a way that at any adjusted position the arm 5 of the pointer will indicate the distance which said arm stands above the surface 8. 60

It will be understood that various changes may be made in the constructional details of the device without departing in any way from the invention as expressed in the appended claims. 65

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

1. In a device of the class described, a standard, a vertically-movable measuring-arm supported thereby, a lock to hold said arm inoperative, a coin-chute, means to positively move  
 70 said coin in said chute and thus release the lock, and means to retain the coin in the chute and in position to hold the lock released until  
 75 after the measuring-arm begins its movement.

2. In a device of the class described, a standard, a vertically-movable measuring-arm supported thereby, a lock to hold said arm inoperative, a coin-chute, means to positively move  
 80 said coin in said chute and thus release the lock, means to retain the coin in the chute and in position to hold the lock released until  
 85 after the measuring-arm has begun its downward movement, and means whereby the downward movement of the measuring-arm operates to release the coin.

3. In a device of the class described, a hollow slotted standard, a vertically-movable arm projecting outwardly from said slot, a  
 90 latch normally holding said arm elevated, a coin-chute, a plunger for forcing the coin in the chute against the latch to throw the latter into inoperative position, and means whereby the coin is released from the chute by the downward  
 95 movement of the arm.

4. In a device of the class described, a hollow slotted standard, a vertical measuring-arm projecting outwardly from said slot, a  
 100 pivoted latch normally holding said arm elevated, a coin-chute, means for forcing the coin in the chute against the latch thereby to throw the latter out of engagement with the arm, said latch having a swell which is adapted to be engaged by the arm as the latter begins its  
 105 downward movement, whereby the latch is removed entirely from the path of the coin.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN MAITLAND.

Witnesses:

FLORENCE HOLT,  
 CHARLES B. RICKER.