To all whom it may concern:

Be it known that I, Angus F. Hanney, a citizen of the United States, and a resident of the city of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Laundry-Counting Devices, of which the following is a specification.

My invention relates to improvements in laundry counting devices, and has for its object the provision of an improved construction of this character which is of simple construction and highly efficient in use.

Other objects will appear hereinafter.

The invention consists in the combinations and arrangements of parts hereinafter described and claimed.

The invention will be best understood by reference to the accompanying drawings forming a part of this specification, and in which,

Fig. 1 is a side view of a device embodying the invention,

Fig. 2 is a front view of the same,

Fig. 3 is a section taken on line 3—3 of Fig. 1,

Fig. 4 is a section taken on line 4—4 of Fig. 3,

Fig. 5 is a section taken on line 5—5 of Fig. 6,

Fig. 6 is a section taken on line 6—6 of Fig. 3,

Fig. 7 is a view similar to Fig. 3 but showing the parts in position for resetting the register,

Fig. 8 is a section taken on line 8—8 of Fig. 7,

Fig. 9 is a section taken on line 9—9 of Fig. 5, and

Fig. 10 is a view similar to Fig. 1 but showing a modified form of construction.

The form of construction illustrated in Figs. 1 to 9 of the drawings comprises a supporting bracket 11 arranged to be secured as indicated on a supporting rail 12.

A guide bar 13 is removable attached to the bracket 11 and a swinging support 14 is arranged in conjunction with said guide bar, the latching lever 15 being arranged to release the bar 13 and the support 14 to permit removal of the bar 13 and downward swinging of the support 14. The outer end of the bar 13 is provided with a cam surface 16 arranged to co-operate with marking members or tags 17 detachably secured to laundry articles and released therefrom by the action of the cam surface 16. The portion of the mechanism already described is a well known arrangement for the purpose invented by myself and forms no part of the present invention except in so far as the guide bar 13 thereof co-operates with the mechanism and parts to be presently described.

Mounted on top of the supporting rail 12 is a supporting housing 18 having a supporting rod 19 extending outwardly therefrom adjacent and parallel to the bar 13. A swinging finger 20 carried by the rocker 21 is mounted to swing freely on a transverse stud shaft 22 secured to the end of the rod 19 and projecting over the bar 13 as shown, the lower end of the finger 20 being bifurcated to straddle the bar 13 and thus be swung when the laundry markers 17 are placed on or removed from the guide bar 13. The rocker 21 carries a rocker arm 23 connected by a link 24 with an arm 25 on a sleeve 26 freely slideable on a spring held plunger 27 mounted in the housing 18. A stop collar 28 is arranged to limit the movement of the sleeve 26 on said plunger in one direction and a stop collar 29 limits the movement of the plunger itself in the opposite direction, the sleeve 26 being free however to move idly on plunger 27. The plunger 27 is mounted in a guide bearing 30 on the housing 18 and carries a laterally extending arm 31 rigidly secured thereto within the housing 18. A compression spring 32 is imprisoned on the plunger 27 by the arm 31, said spring serving to hold the plunger normally with the collar 29 resting against the bearing 30 as best shown in Fig. 4. The arm 31 has a forked end 31' engaging an annular recess 32' in the flange 33' of a sleeve 34' which is loosely mounted on a pivot stud 35' secured in the casing 18 in parallel relat-
tion to the plunger 27. A dog 33 is pivotally mounted to swing freely on the sleeve 34, being operatively held thereon by the flange 35 and a stop collar 36. The dog 33 is provided with a tooth 34 arranged and adapted to engage the teeth 35 on the periphery of a toothed wheel 36 mounted on a dial shaft 37 carrying a numbered dial 38 co-operating with an indicator finger 39 on the front of housing 18. The dog 33 is provided with a laterally extending weight ed arm 40 resting on a cam member 41 in housing 18, said cam member being arranged and shaped to permit the tooth 34 to engage between two of the teeth 35 and then rock the dog 33 laterally upon longitudinal movement of the plunger 27, the weighted arm 40 normally holding the dog 33 in operative contact with the cam 41. By this arrangement upon each outward movement of the plunger 27 the dog tooth 34 will be drawn into engagement with the teeth of the wheel 36 and said wheel caused to rotate the angular space of one of the numbers on the dial 38, of course carrying the dial with it. In this way as each of the markers 17 is forced onto the guide bar 13 the finger 20 will be swung to operate the dog 33 to step the dial 38 the angular space of one of the numbers on the faces thereof, whereby the number of markers inserted on the bar 13 will be accurately counted and will appear on the dial 38. Each marker carries a laundry article so that the dial 38 will thus accurately show the number of laundry articles on the bar 13.

A spiral watch spring 42 is secured to the shaft 37 and to the housing 18 and is arranged to hold a stop pin 43 on the hub of wheel 36 against a stop pin 44 on a washer 45, loose on shaft 37 and having a slot and pin connection 46 with the housing 18. When the washer 44 is in the position indicated in Fig. 9 the dial 38 is at the zero point as indicated in Fig. 2, and this is the normal starting position, the spring 42 yeaingly holding the dial in this position and automatically returning the dial to this position when released. It will be observed that the numbers on the dial 38 extend completely around the same and the lost motion permitted by the slot and pin connection 43 compensates for the thickness of the pins 43 and 44 and permits a complete rotation of the dial before the dial is again stopped by the contact of the pins 43 and 44 on their other sides. By this arrangement there is a constant tendency of the dial 38 to return to its zero point. A spring held pawl 45 is mounted on the housing 18 to engage the teeth 35 of the wheel 36 and normally prevent the return of the dial to zero position, said pawl however automatically yielding to permit advance movement of said dial under the operation of the dog 33 and the cam 41. A link 46 is pivotally connected at one end with the pawl 45 and extends diametrically across wheel 36 and is given a slot and pin connection 47 with a pawl 18 pivoted at 49 on the housing 18, said pawl 48 being thus held out of engagement with the teeth 35 when the pawl 45 is in engagement with teeth 35. A conical cam head 50 is secured to the end of a spring held plunger 51 slidably mounted in a bearing sleeve 52 on the housing 18 to reciprocate parallel to the plunger 27 and the axis of wheel 36. A compression spring 53 is imprisoned in the sleeve 52 and a stop collar or head 54 is secured to the plunger 51 to resist against the spring 53. An arm 55 is provided on the sleeve 26 and projects upwardly therefrom to engage the collar 54 during the idle movement of the sleeve 26 on plunger 27 as explained above. By this arrangement when the finger 20 is swung outwardly or to the left in the position illustrated in Fig. 1 as will be caused by the removal of one of the markers 17 from the bar 13, the sleeve 26 will be operated to force arm 56 into contact with collar 54 and thus operate the plunger 51. This causes the cam head 50 to operate pawl 48 throwing the same into engagement with the teeth 35 and throwing the dial 43 out of engagement with said teeth. The pawls 45 and 48 are so mounted and positioned relatively to each other that as the pawl 45 is thrown out of engagement the pawl 48 passes into a space between two of the teeth 35 which permits of the reverse movement of the wheel 36 the space of one tooth under the influence of spring 42, or, in other words, the mechanism constitutes an escapement mechanism permitting of step by step reverse movement of the wheel 36 and the dial 38 upon each operation of the plunger 41. Thus if the operator makes a mistake, which frequently happens in counting laundry work and a wrong marker 17 is placed upon the bar 13, the mistake can be corrected by simply removing said marker from the bar and the apparatus automatically subtracts or eliminates the previous registration thereof by the dial 38. Should the erroneously placed marker not be discovered until a number of proper markers have been also placed on it on the bar 13, nevertheless all of the markers may be removed singly from the bar 13 until the incorrect marker is thus removed, the apparatus automatically eliminating the corresponding registrations from the dial as explained above and as each marker is removed. Then when the erroneous marker is laid aside and the proper markers again placed on the supporting bar 13 proper registration will again take place.

A rocker arm 56 is rigidly secured to a rocker shaft 57 normally held in the position indicated in Fig. 8 by a spring 58 and
Shaft 3 at 1,573,162 an operating handle 59 is provided on said front of housing 18 as indicated in Figs. 1 and 2. The free end of rocker arm 56 carries a pin 60 engaging a slot 61 in the link 46 and whereby a limited amount of lost motion is permitted between the link 46 and the pin 60, said lost motion permitting of the normal operation of the teeth 35 and 48 without interference from the pin 60. However when the rocker arm 56 is rocked into the position shown in Fig. 7 both pins 45 and 48 will be held from engagement with the teeth 35 and permit automatic return and resetting of the dial 33 under the influence of the spring 42.

The slot 47 also permits of sufficient lost motion between link 46 and pin 48 to prevent the pawl 48 from being thrown into engagement with the teeth 35 when the pawl 45 is thus raised from engagement with teeth 35. This provides a simple and convenient means for resetting the dial at the end of each counting operation. By this arrangement it will be observed that laundry articles bearing the markers 17 may be readily assembled upon the bar 13 and accurately counted, the number being indicated by the dial 33, inevitable errors in counting being readily corrected when necessary.

When the articles are thus assembled the latch lever 15 is operated to release bar 13 and the support 14 whereupon the counted laundry articles are dropped into a suitable receptacle and the bar 13 and counters 17 readily removed as desired.

In the modified form of construction illustrated in Fig. 10 a rocking lever 62 is pivoted to the rod 19 and connected by a link 63 with the arm 23 and by a link 64 with the arm 25. This arrangement reverses the operation of the dial as explained above, the dial operating to count the markers removed from the bar 13 instead of those being placed thereon. In some instances and under some circumstances such a counting arrangement will be found advantageous. Otherwise the construction and mechanism is identical with that already described.

While I have illustrated and described the preferred forms of construction for carrying my invention into effect, these are capable of variation and modification without departing from the spirit of the invention, 1. therefore, do not wish to be limited to the precise details of construction set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claims.

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

1. In combination with a wheel and a register controlled thereby, of a plunger and means adapted to actuate said wheel in one direction; a second plunger and means adapted to cause the operation of said wheel reversely; a guide; means operative by articles moving on said guide for actuating the first plunger; and means operative by articles moving reversely on said guide for actuating said second plunger, substantially as described.

2. In combination with a wheel and a register controlled thereby, of a pair of plungers; means controlled by one plunger for moving said wheel in one direction; means controlled by the other of the plungers for causing the reverse movement of said wheel; and means movable upon said first named plunger for actuating the second named plunger when said wheel is to be moved reversely, substantially as described.

3. In combination with a spring positioned wheel and a register controlled thereby, of two plungers; a dog under the control of one plunger and arranged to step said wheel against the action of its spring; a pair of pivoted link-connected pawls under the control of the other plunger and adapted to allow reverse stepping of said wheel; a guide; and means operable by movement of articles along said guide in one direction for operating one plunger, and by movement of articles along said guide in the opposite direction for operating the other of said plungers, substantially as described.

4. In combination with a wheel and a register controlled thereby, of a pair of plungers; means controlled by one plunger for moving said wheel in one direction; means controlled by the other of the plungers for causing reverse movement of said wheel; a guide; a rocker whose rocking movements are effected by the moving of articles to and fro upon said guide; a sleeve arranged on the first named plunger for actuating the same; an operative connection between said rocker and the sleeve; and means adapted to establish an operative connection between said sleeve and the second named plunger, substantially as described.

5. In combination with a wheel and a register controlled thereby, of two plungers; a sleeve arranged on the first plunger whereby to actuate both of the plungers; a dog and means adapted to step said wheel controlled by the first plunger; a pair of pivoted link-connected pawls to allow reverse stepping of the wheel controlled by the second of the plungers; a guide; means operable by movement of articles along said guide for operating said sleeve; and an arm on said sleeve for actuating the second plunger in one direction, substantially as described.

6. A device of the class described comprising a guide; a register associated therewith; a spring-urged wheel connected to control the operation of said register; a pair of pivoted link-connected pawls for controlling said spring-urged wheel; a swinging finger.
associated with said guide to be moved by articles moved along the guide; a plunger member connected to be reciprocated by the movement of the finger in one direction; a second plunger member connected to be reciprocated by the movement of the finger in the opposite direction; means operable by the reciprocation of the first plunger for actuating said wheel; and means operated by the reciprocation of the second plunger for operating said link-connected pawls, substantially as described.

In testimony whereof I have signed my name to this specification.

ANGUS F. HANNEY.