

A. L. NEVELS.
CLOTHES CLEANING MACHINE.
APPLICATION FILED JAN. 27, 1909.

1,048,573.

Patented Dec. 31, 1912.

2 SHEETS-SHEET 1.

Fig. 1.

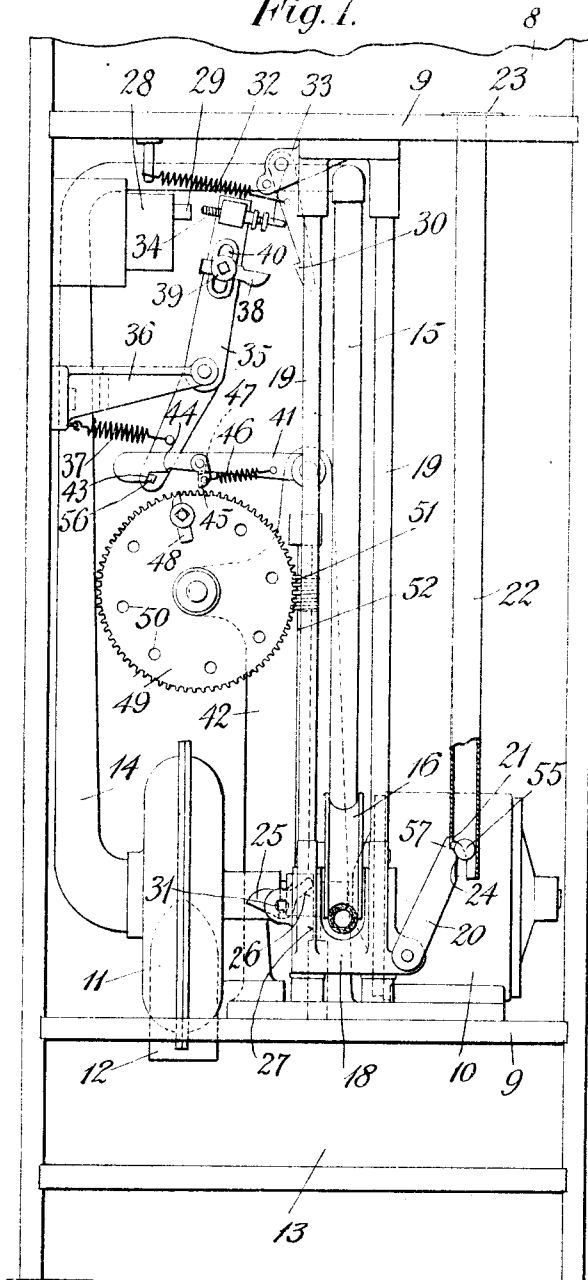
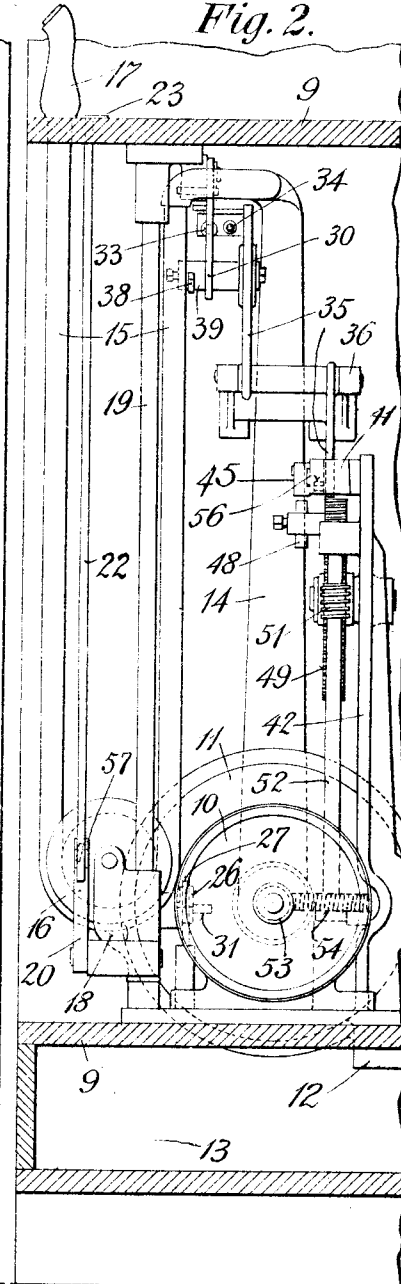


Fig. 2.



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2 SHEETS-SHEET 2.

Fig. 3.

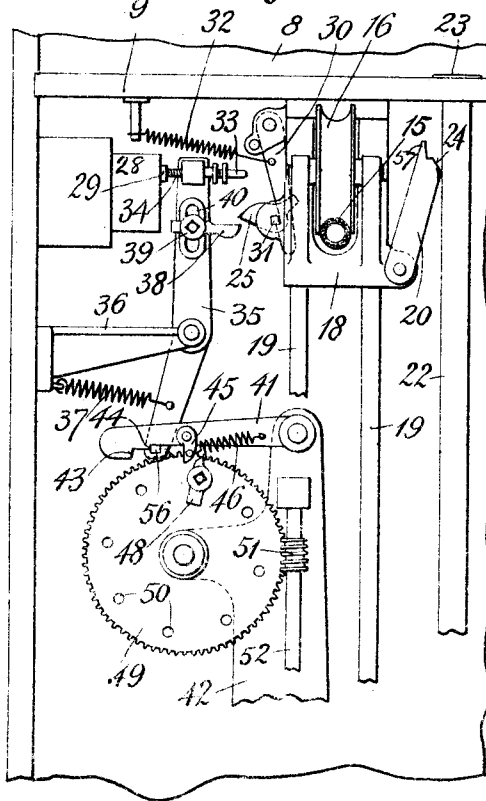


Fig. 4.

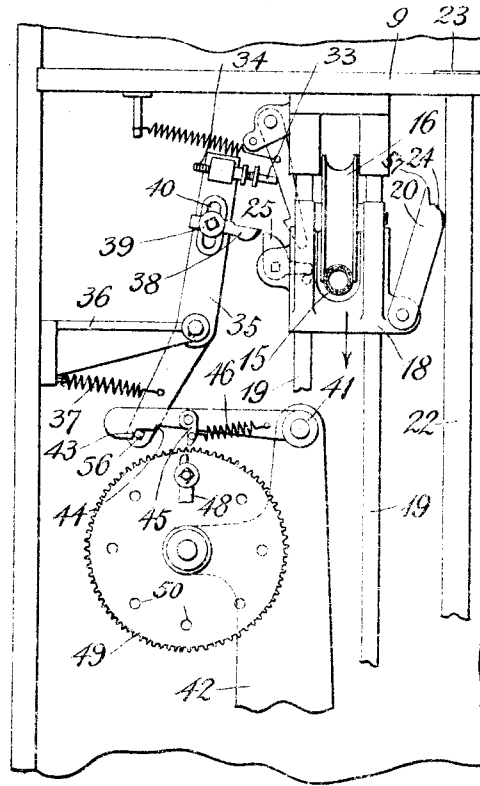
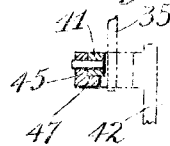


Fig. 5.



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UNITED STATES PATENT OFFICE.

ANTHONY L. NEVELS, OF HARTFORD, CONNECTICUT, ASSIGNOR, BY MESNE ASSIGNMENTS, TO WORCESTER NOVELTY COMPANY, OF WORCESTER, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

CLOTHES-CLEANING MACHINE.

1:048,573.

Specification of Letters Patent.

Patented Dec. 31, 1912.

Application filed January 27, 1909. Serial No. 474,625.

To all whom it may concern:

Be it known that I, ANTHONY L. NEVELS, a citizen of the United States, and a resident of Hartford, in the county of Hartford and State of Connecticut, have invented a new and Improved Clothes-Cleaning Machine, of which the following is a specification.

My invention relates more especially to the class of machines that are locked to prevent use but which may be unlocked upon the performance of certain requirements, after which unlocking the device may be used for the purpose required, and the object of the invention is to provide a device of this class having numerous novel features of advantage and utility.

One form of device in the use of which the above object among others may be attained is illustrated in the accompanying drawings, in which—

Figure 1 is a view in front elevation partially in section showing my improved apparatus. Fig. 2 is a view in side elevation partially in section of my improved cleaning machine, in these views the parts being shown in the position occupied when the machine is not in use. Fig. 3 is a view showing a portion of the mechanism and the position of the parts with the carrier held at the upper limit of its play, parts being omitted for sake of clearness. Fig. 4 is a like view but showing the carrier released and moved slightly from its uppermost position, certain parts being omitted for sake of clearness. Fig. 5 is a detail view in section through the trip lever and illustrating the construction of the dog borne thereon.

In the accompanying drawings the numeral 8 denotes the back and 9 the top and bottom parts of a casing containing the operative parts of the mechanism. A motor 10, of any desired construction, preferably electric, is located within the case and is arranged to drive an air current creating device 11, preferably and as herein shown, this being an exhauster. This exhauster is connected in any desired manner to be driven by the motor, as herein shown the shafts of both being located in line. The motor is employed not only to drive the exhauster but also to drive other mechanism located within the box or inclosure, this mechanism including a timing mechanism to be hereinafter described. The exhauster has

an outlet 12, in the specific construction herein shown this being a tube opening into a dirt or dust receptacle 13 which may be of any desired form and construction, and an inlet tube 14 is also connected with the exhauster, this inlet tube extending upward within the box and having a flexible tube 15 connected thereto. This flexible tube extends around a sheave 16 and terminates in a cleaning tool 17 located without the box.

A carrier 18 is mounted upon guides 19 along which it freely slides, said carrier supporting the sheave 16. This carrier has a latch 20 pivotally secured at one end to the carrier, the opposite end of the latch projecting in position to engage a stop 21, in the present instance the edge of an opening formed through a coin chute 22, the latter extending to the upper part of the box and terminating in a mouth-piece 23 on the outer surface of the box. The latch 20 extends into the coin chute (the latter preferably being cut away to receive it) to an extent to intercept a coin traveling along the chute, the coin resting against a cam formation 24 at the end of the latch. The latch is so located with reference to the stop 21 that the carrier may have a limited upward movement before the latch will encounter the stop, and the formation 24 is such and so located that as the carrier is moved upward from its position of rest, if a coin is located in the chute against the cam formation, the latter encountering said coin causes the latch to be swung outward so that it is not in line with the stop, and the carrier may therefore be moved upward. In its position of rest, however, and without a coin in the chute the latch serves to lock the carrier against movement, the latch being arranged to assume this locked position whenever the carrier is moved to its lowermost position. An actuating trip 25 is also pivotally mounted on the carrier, this trip having a tail 26 arranged to be engaged by a setting pin 27 stationary near the point occupied by the tail when in its lowermost position.

An electric switch 28 of ordinary form and construction, is located within the box, preferably near the upper end thereof, this switch by choice being of a construction to alternately make and break an electric circuit by successive inward movements of a

push button 29. The switch controls the supply of electric current to the motor 10 and thus its operation.

A catch 30 is pivotally mounted within the box to engage a lug 31 on the carrier to hold it at the upper limit of its play. A spring 32 holds the catch at one limit of its play and a catch actuating pin 33 is arranged to move the catch out of engagement with the lug 31. This catch actuating pin is adjustably mounted upon an actuating lever 35 which also bears a switch operating pin 34.

The actuating lever 35 is pivotally mounted within the box as on a bracket 36 and is held at one limit of its swinging movement as by means of a spring 37. A lever operating pin 38 is mounted upon this lever, this pin being longitudinally adjustable in a support 39 which in turn is adjustable longitudinally of the lever within a slot 40.

A trip lever 41 is pivotally mounted within the box as upon a standard 42, this trip lever having a shoulder 43 to retain the actuating lever in position assumed during inaction of the machine and a shoulder 44 to hold the lever in the position assumed during action of the machine; these positions may be termed the inactive and active positions, respectively.

A dog 45 is mounted upon the trip lever 41, this dog being retained at one limit of its play as by a dog actuating spring 46. The dog has a limited swinging movement upon the lever 41, which movement is limited by the shoulder 47 (see Fig. 5 of the drawings) coming in contact with the edge of the lever. This dog is arranged for engagement by a tooth 48 adjustably secured to an actuating disk 49. This actuating disk is mounted on the standard 42 and has a series of openings 50 within each of which the base for the tooth 48 may be secured, thus providing for the adjustable location of the tooth. The edge of the disk is formed as a worm-wheel meshing with a worm 51 on a shaft 52, which shaft is driven as by means of a worm 54 meshing with a worm-wheel 54 said worm being operated by the motor and preferably secured to the shaft thereof.

In the operation of the device a coin 55 of the proper denomination having been deposited within the coin chute 22, the cleaning tool 17 is grasped and pulled outward. By reason of the flexible tube 15 passing around the sheave 16 secured to the carrier, the latter is raised, the cam surface 24 contacting with the coin 55 causing the latch 20 to be thrown outward so that it will not engage with the stop 21. The tube 15 is extended sufficiently to move the carrier to the upper limit of its play, during which travel the actuating trip 25 encounters the lever operating pin 38, forcing the actuat-

ing lever 35 to one side and causing engagement of the switch operating pin 34 with the push button 29. This operation of the switch makes the electric circuit and starts the motor 10, which places the exhaustor 11 in operation, causing a suction at the mouth of the cleaning tool 17.

As the lever 35 is swung as described the lug 56 at its lower end is moved to engage the shoulder 44 on the trip lever 41, the latter being controlled by the influence of gravity, causing engagement of said dog and shoulder. This holds the lever in the position to which it has thus been moved.

A continuance of the upward movement of the carrier brings the lug 31 into engagement with the catch 30 so that the carrier is now held in this position.

The operation of the motor causes rotation of the shaft 52 and the actuating disk 49. The connection between this disk and the motor is such that the parts may be arranged to provide for different intervals between the release of the latch 20 from the stop 21 and its reengagement therewith. This enables the machine to be set so that it may be operated for different periods of time. For instance, if a second tooth 48 be placed in the opening 50 diametrically opposite the tooth shown in the drawings the operation of the machine will be for a period of time one-half the length of that at which it will operate with the parts arranged as shown in the drawings, and the other holes provide for the use of other teeth to provide for still different periods of time of operation, if such shall be desired. As the disk 49 rotates the tooth 48 comes in contact with the dog 45, swinging it on its pivot to one limit of its play and raising the trip lever 41, disengaging the lug 56 from the shoulder 44 and allowing the actuating lever 35 to be moved by the spring 37, in this movement the lug 56 engaging with the shoulder 43 and stopping the movement of the lever. As the lever is moved to this position the catch actuating pin 33 engages the catch 30 moving it from engagement with the lug 31 and allowing the carrier to drop. In the downward movement of the carrier the actuating trip 25 encountering the lever operating pin 38 causes said trip to be swung on its pivot and thus moved out of the path of said operating pin. The actuating trip remains in this position until the carrier has passed downward and the latch 20 is in position to lock the carrier against upward movement. After the parts have reached this position the tail 26 encounters the setting pin 27 and moves the trip to the position shown in Fig. 1. It will thus be seen that the carrier must be moved into a position where it is locked against upward movement before the catch 25 is placed in posi-

tion to again operate the parts and set the machine in motion.

When the tooth 48 engages the dog 45 and releases the parts the operation is so quick as to sometimes stop the machine before the dog and tooth have passed one beyond the other, in which case were the dog 45 immovable on its support the trip lever 41 could not be moved downward to engage the lug 56 and hold the actuating lever 35 in its active position. By allowing the dog 45 to have a limited swinging movement as the curved surfaces of the dog and tooth come together and the trip lever is forced upward sufficiently, the friction between the parts decreases until the actuating spring 46 is powerful enough to move the dog 45 out of registering position with the tooth 48.

In order to properly locate the end of the latch 20 in the coin chute so that it will operate only with the coin intended a tip 57 is provided to determine the position of the latch and the cam formation 24, which parts are so located and formed that a coin smaller in size than that intended to operate the machine will pass the latch and be delivered into the coin receptacle.

While the specific form of cleaning device shown and described herein is a suction device, with a tube through which air passes in the operation of the device, I do not limit myself to such form of cleaning tool and flexible connection, as other forms of cleaning device with other kinds of flexible connections for operating such cleaning devices may be employed and yet be within the limits of the invention, and while the connection of the flexible member with the carrier is by means of a sheave around which the flexible connection extends, this permitting withdrawal of the connection to an extent to permit use of the cleaning device, I do not limit my invention to such means of connection of the flexible member with the carrier, as other forms are contemplated by me as within the spirit and intent of the invention, nor do I otherwise limit myself to the construction of mechanism shown herein which satisfactorily accomplishes the desired result, as such construction and arrangement may be departed from to a greater or lesser extent without avoiding the invention.

I claim—

1. A casing, a tube for conveying a current of air, a cleaning tool secured to said tube, means within the casing for effecting flow of a current of air through said tube, movably-mounted means to retain the cleaning tool in inoperative position, connections between said means and the means for effecting flow of said air current to operate the latter, and a timing mechanism to control the time of operation of the current creating means.

2. A casing, a tube for conveying a current of air, a cleaning tool secured to the tube, means within the casing for effecting flow of a current of air through said tube, mechanism to operate the means for effecting the flow of said air current, and a timing device to control the time of operation of the means for effecting flow of the current of air.

3. A casing, means located within the casing for creating a current of air, a flexible tube to conduct said air current, said tube projecting out of the casing and being capable of withdrawal therefrom, a cleaning tool secured to said tube, means in engagement with the tube within the casing to hold said tube and tool against withdrawal, and means for normally locking said tube engaging means against movement.

4. A casing, means located within the casing for creating a current of air, a tube to conduct said air current, one end of the tube projecting out of the casing, a cleaning tool connected to the projecting end of said tube, a rotating member engaged by the tube, and a locking member to prevent movement of the rotating member and hence to prevent withdrawal of the tube.

5. A casing, means located within the casing for creating a current of air, a carrier, a tube to conduct the air current, said tube projecting out of the casing, a sheave on the carrier, said sheave engaging the tube to prevent or permit its withdrawal, a cleaning tool secured to said tube, and means for normally locking the carrier against movement.

6. A casing, means located in the casing for creating a current of air, a flexible tube to conduct said air current and having one end located without the casing, said tube being capable of withdrawal therefrom, a cleaning tool connected to the outer end of said tube, a locking member to prevent withdrawal of the tube and movable to unlock it to permit its withdrawal, means for drawing the tube into the case, and a timing device connected to determine the time of operation of said drawing means.

7. A casing, means located in the casing for creating a current of air, a tube connected with said current creating means to conduct said air current, said tube projecting out of the casing and being capable of withdrawal therefrom, a cleaning device secured to said tube, means to prevent withdrawal of the tube from the casing, a device for actuating the current creating means, locking means arranged to control withdrawal of the tube, and means for starting the operation of said actuating means upon the withdrawal of said tube.

8. A casing, means located in the casing for creating a current of air, means for actuating the current creating means, a tube connected to said current creating means to

conduct said air current, said tube projecting out of the casing and being capable of withdrawal therefrom, a cleaning tool secured to said tube, means to prevent withdrawal of the tube from the casing, a tube locking member movable to permit withdrawal of the tube, mechanism for timing the period of flow of current in said tool, and mechanism for starting the operation of said actuating means and said timing means after withdrawal of the tube.

9. A casing, means located within the casing for creating a current of air, a tube to conduct said air current, said tube having a flexible portion forming a loop and having one end projecting out of the casing, a cleaning tool secured to the tube, means in engagement with the tube and arranged to allow its withdrawal from and its return within the casing, a lock for and connected with said returning means, a timing mechanism, and connections between the timing mechanism and tube returning means to control the time of operation of the latter.

10. A casing, means located within the casing for creating a current of air, guides within the casing, a carrier movable on the guides, a sheave mounted on the carrier, means to lock the carrier in one position, a tube passing around said sheave and having one end connected with the current creating means and its opposite end projecting out of the casing, said tube being held in the casing by the sheave when the carrier is locked, a cleaning tool secured to the free end of said tube, means for retaining the carrier in unlocked position, and a timing device arranged to release the carrier from said retaining means.

11. A casing, a cleaning device located without the casing, operating mechanism located within the casing, a flexible connection between said operating mechanism and cleaning device, and means within the cas-

ing for holding said cleaning device in inoperative position, said means being adapted for release to permit removal of the device from said inoperative position.

12. A casing, a cleaning device located without the casing, operating mechanism located within the casing, a flexible connection between the operating mechanism and said cleaning device, a carrier, a sheave carried thereby and engaged by said connection, and means for normally locking the carrier to hold the cleaning device against movement.

13. A casing, means for creating a current of air, a cleaning tool, a tube connecting the current creating means and the cleaning tool, means located within the casing for locking the tool in a non-usable position and adapted to be released to permit movement of the tool to a usable position, and a timing device for controlling the period of operation of said air current creating means.

14. A casing, means for creating a current of air, a cleaning tool, a tube connecting the current creating means and the cleaning tool, means located within the casing for normally retaining the tool against movement, said means being movable to permit the tool to be used, a timing device to control the period of operation of the tool when said means has been moved from its normal position, and mechanism for returning the tool and said means to normal position upon completion of said period.

15. A casing, means for creating a current of air, a movable cleaning tool operably-connected with the current creating means, and means within the casing for normally retaining the cleaning tool in fixed position to prevent cleaning use.

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Witnesses:

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