M. J. WALTHER.

VENDING MACHINE.

APPLICATION FILED SEPT. 15, 1909.

961,051.

Patented June 7, 1910.

4 SHEETS—SHEET 1.

Fig. 1.

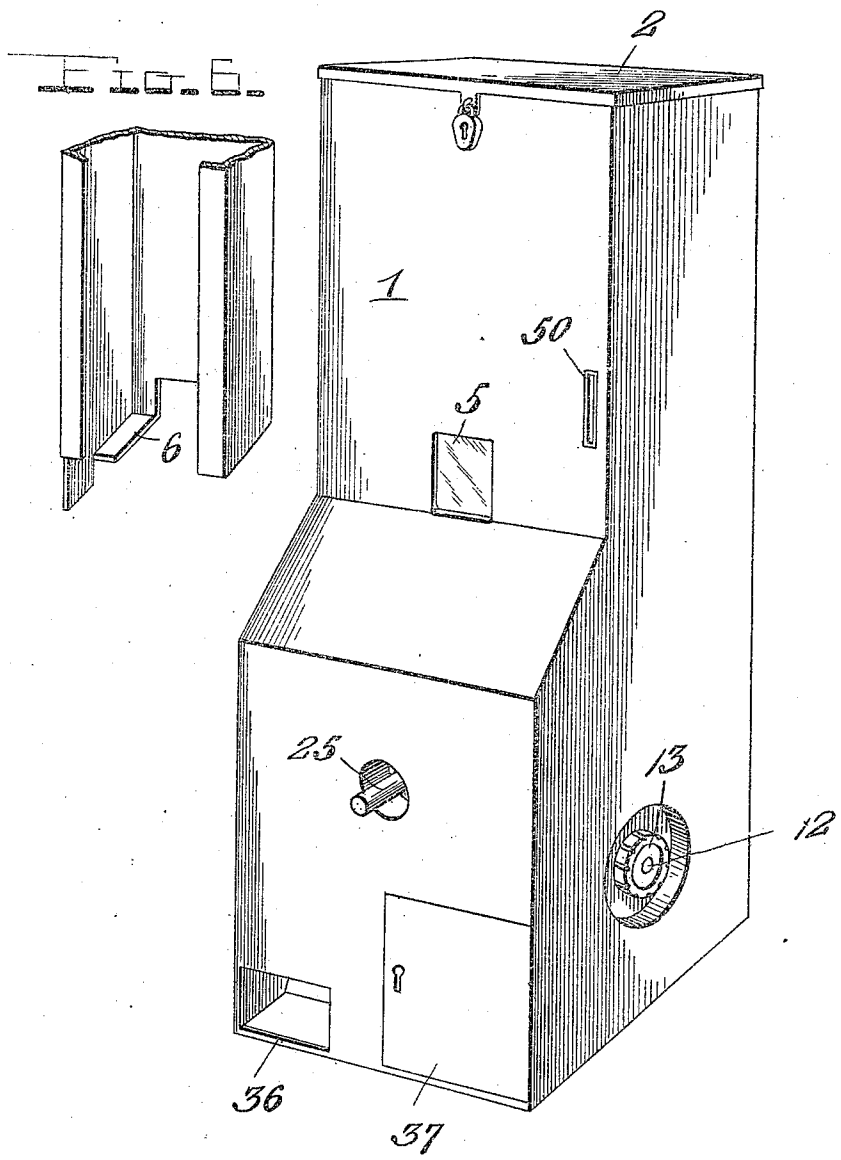

Fig. 6.

Witnesses

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4 SHEETS—SHEET 2.

FIG. 2.

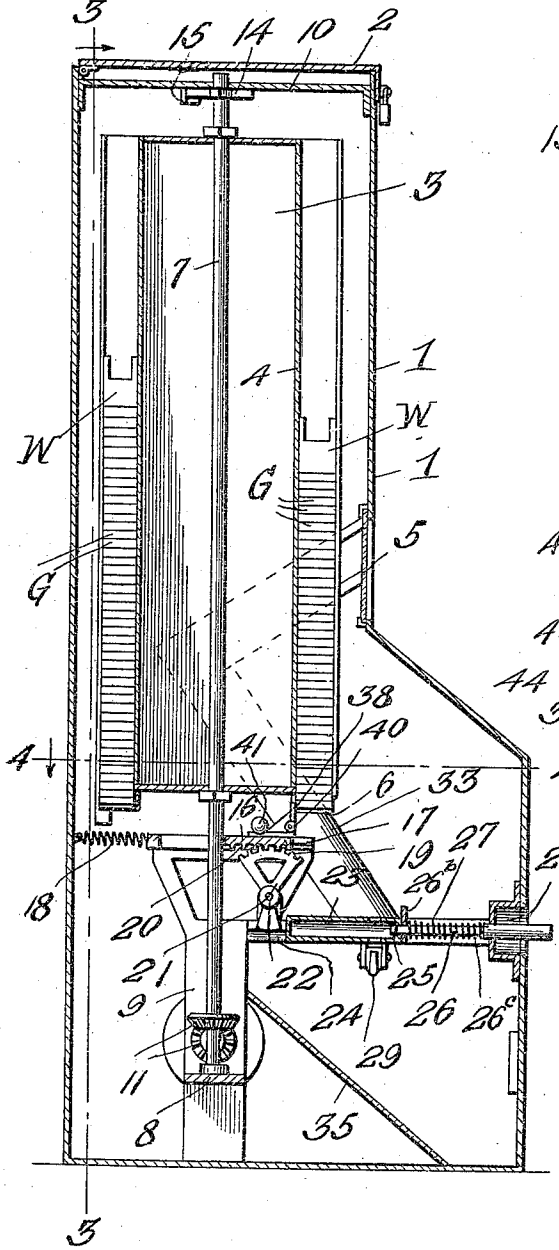
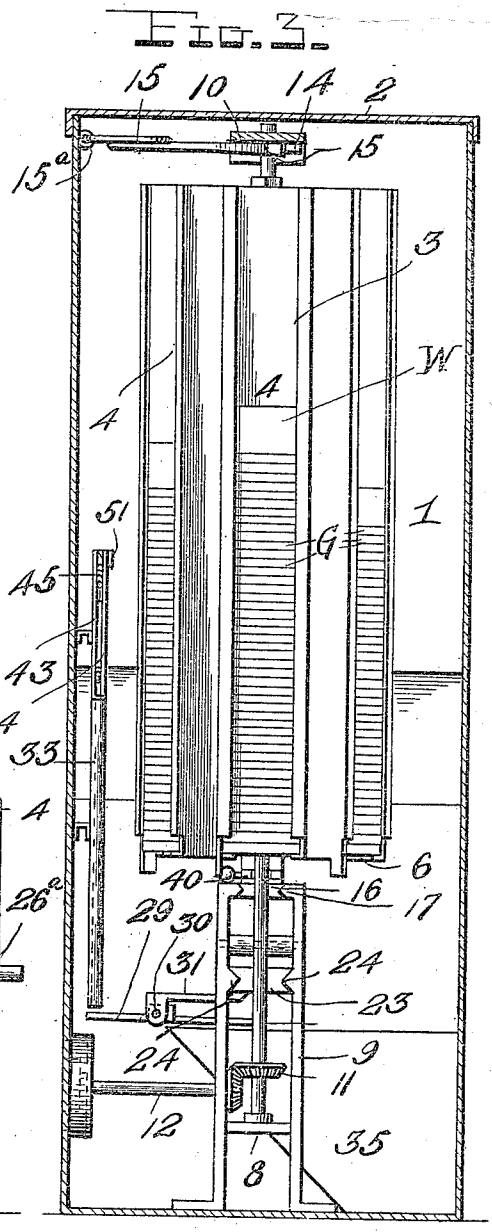


FIG. 3.



Witnesses

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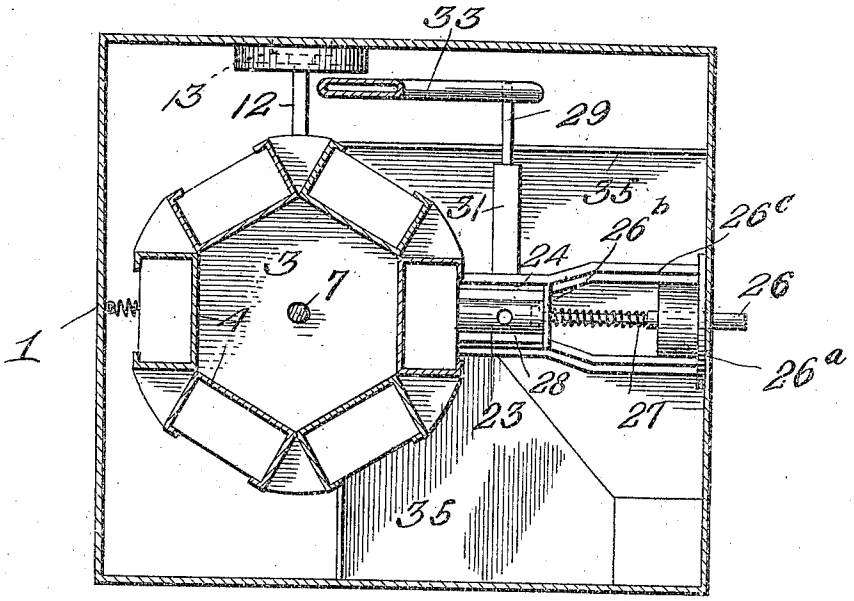
4 SHEETS—SHEET 3.

Fig. 4.



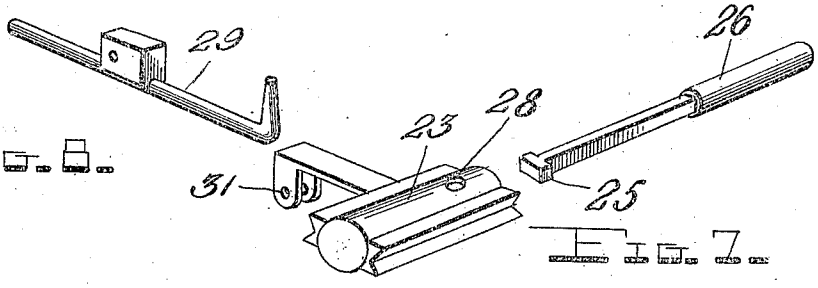


Fig. 6.

Fig. 7.

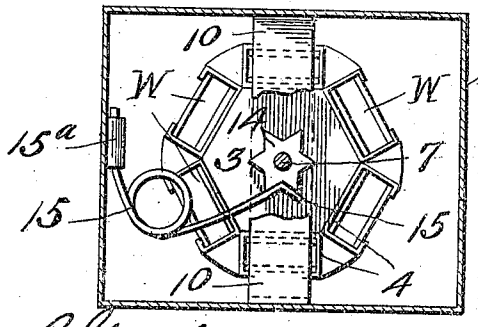


Fig. 5.

Witnesses

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4 SHEETS—SHEET 4.

Fig. 9.

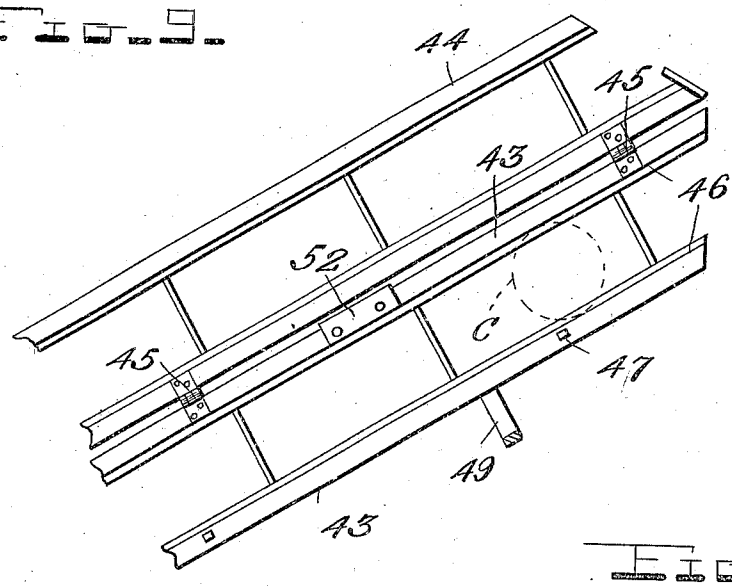


Fig. 12.

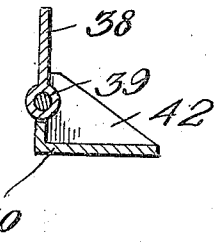


Fig. 10.

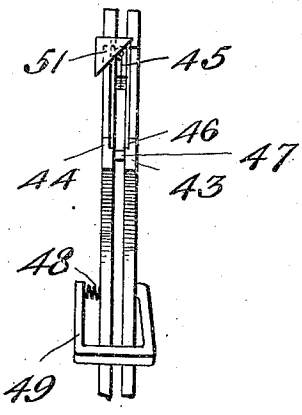


Fig. 11.

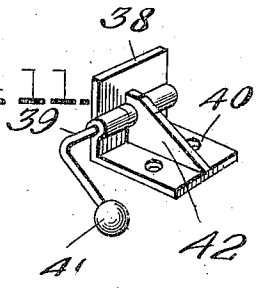
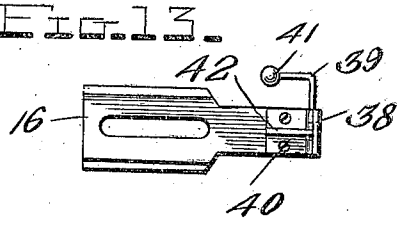


Fig. 13.



Witnesses

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UNITED STATES PATENT OFFICE.

MATHIAS J. WALTHER, OF CLEVELAND, OHIO.

VENDING-MACHINE.

961,051. Specification of Letters Patent. Patented June 7, 1910.

Application filed September 15, 1909. Serial No. 517,882.

To all whom it may concern:

Be it known that I, MATHIAS J. WALTHER, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Vending-Machines, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to improvements in machines for vending chewing gum or other merchandise.

The objects of the invention are to provide a simple, practical and efficient machine of this character, to provide an improved means whereby a single ejecting mechanism may be employed for vending a plurality of different kinds of goods or merchandise; to provide an improved ejecting mechanism and to provide an improved coin-detector mechanism.

With the above and other objects in view, the invention consists of the novel construction, combination and arrangement of parts, hereinafter fully described and claimed, and illustrated in the accompanying drawings in which—

Figure 1 is a perspective view of my improved vending machine. Fig. 2 is a vertical to rear sectional view. Figs. 3 and 4 are vertical and horizontal sections taken on the planes indicated by the lines 3—3 and 4—4 respectively in Fig. 2. Fig. 5 is a detail horizontal section showing the means for retaining the goods holder in adjusted position. Fig. 6 is a detail perspective view of the lower end of one of the goods compartments or sections of the holder. Fig. 7 is a perspective view of the plunger and push rod. Fig. 8 is a similar view of the dog. Fig. 9 is a detail view of the upper portion of the coin chutes showing its movable sections swung open. Fig. 10 is an end view of the coin chutes with its parts or sections in closed position. Fig. 11 is a detail perspective view of the movable ejector finger. Fig. 12 is a detail sectional view through the same, and Fig. 13 is a plan view of the ejector slide.

Referring more particularly to the drawings, 1 denotes a suitable casing formed, preferably, with an enlarged lower portion and an open top closed by a hinged or otherwise suitably mounted cover 2 which may be provided with a suitable locking means. Arranged within the upper portion of the casing is a revolubly mounted goods or merchandise holder 3. Said holder consists of top and bottom members united by an annular series of upright sections 4, each of which forms a compartment for the packages of chewing gum or other merchandise to be vended.

It will be understood any number of the sections 4 may be provided according to the number of different kinds of merchandise it is desired to vend by the machine, and by mounting the holder so that it can be revolved any one of said sections may be brought in operative relation with respect to an ejector mechanism hereinafter described, and opposite a glass covered side opening 5 arranged in the front of the casing. Each of said sections 4 has an open front portion to expose the packages of goods or merchandise indicated at G, and which may be fed downwardly by sliding weights W, and at the bottom of each of said sections 4 is provided inwardly projecting side flanges 6 adapted to support the column of goods or merchandise.

The holder 3 is removably mounted on a vertical pivot 7 having its lower end arranged in a bearing 8 on a suitable bracket or support in the bottom of the casing, and its upper end is mounted in a cross bar 10 at the open top of the casing. To permit the holder to be revolved to bring any section into operative position, meshing beveled gears 11 are provided on the vertical pivot or shaft 7 and a horizontal shaft 12, one end of which extends through one side wall of the casing, and is provided with a hand wheel 13. The holder 3 is retained in adjusted position by the tension device shown in Fig. 5 and which consists of a star wheel or disk 14 fixed to the upper portion of the pivot 7 and having in its periphery one notch for each of the sections 4. A spring dog or pawl 15 which is pivotally mounted in a ferrule 15ª coacts with the notched wheel 14 to hold it against casual rotary movement but at the same time permits said wheel to be freely turned in either direction.

The ejector mechanism comprises an ejector slide 16 arranged for horizontal sliding movement in a forward and rearward direction by having its grooved side edges engaged with guides 17 provided on the up-

per portion of the bearing or supporting bracket 9. The rear slotted end of the slide 16 receives the pivot 7 and has connected to it a coil spring 18 which serves to retract said slide. The latter is projected by means of a segmental gear 19 which meshes with a longitudinal series of rack teeth 20 formed on the bottom of the forward portion of the slide 16. The segmental gear 19 is formed on one end of a lever 21 pivoted intermediate its ends at 22 and having its lower end arranged in the path of a plunger 23. The latter has its side edges grooved to receive V-shaped guide ribs 24 on the bracket 9. The central portion of said plunger is hollow to receive the shouldered inner end 25 of a push rod or pin 26, the outer end of which latter is disposed outside of the box or casing 1. Said push pin has its outer portion slidable in a dished plate 26^a, and its inner portion is square and slidably mounted in a transverse bearing plate 26^a arranged between spaced brace arms 26^c projecting forwardly from the bracket 9. A coil spring 27 surrounds the squared inner portion of the push rod and is confined between the plate 26^b and the shoulder on said rod. The hollow body portion of the plunger 23 is formed with a vertical opening 28 to receive the bent or angular end of a dog 29 pivoted intermediate its ends at 30 in a laterally projecting bracket arm 31 on the plunger 23. The angular end of the dog 29 is weighted and overbalanced as shown at 28, and its other end is adapted to be disposed beneath the lower open end of the coin chute 33.

The arrangement and construction of the parts just described are such that a coin passing down the chute will drop upon and depress the straight end of the dog and thereby throw its angular end upwardly into the opening 28 of the plunger 23 so that when the push rod 26 is moved inwardly its shouldered end 25 will engage the angular end of the dog, which latter serves to lock the plunger and the push rod together.

It will be noted that when the dog is in its normal position its bent end is beneath the plunger so that the latter will not be actuated by the push pin should said pin be forced inwardly without dropping a coin into the chute. When a coin actuates the dog to cause it to lock the plunger to the push rod, and said push rod is then forced inwardly, the plunger will move inwardly and will actuate the lever 21, and at the same time the dog will move with the plunger until its straight end passes from beneath the coin chute to allow the coin to drop into a suitable coin receptacle or upon the bottom of the casing. The coins may be removed from the latter through a suitably locked door 37 in the front wall of the casing.

35 denotes a chute arranged beneath the ejector mechanism to receive the goods or merchandise and adapted to discharge them at an opening 36 in the front wall of the casing.

The ejector slide 16 carries a movable ejector finger 38 which passes through the open bottom of the foremost section 4 of the goods holder and engages and ejects the lowermost package in said section. This finger 38 is in the form of an upright plate fixed to a pivot 39 in an angular bracket 40 secured to the top and front end of the ejector slide. The pivot 39 has at one end a weighted arm 41 for maintaining said finger in upright position against a stop 42 provided on the bracket 40. Owing to this construction it will be seen that when the ejector slide is moved forwardly the finger 38 will engage the lowermost package of gum or other goods or merchandise in the foremost section 4 of the holder and eject the same, and that then the ejector slide is retracted by the spring 18 the finger 38 will swing forwardly and pass under the goods or merchandise in said section, the weight 41 restoring the finger to its normal position.

The coin chute 33 has its lower portion inclined downwardly and forwardly, while its upper portion is inclined downwardly and rearwardly from the front wall of the casing, as shown in Fig. 2. This upper portion of the chute is composed of a stationary section 43, and a swinging section 44, which latter is hinged to the upper portion of the section 43, as shown at 45. The sections 43, 44, are each composed of connected bars grooved as at 46 to receive a coin indicated in dotted lines at C, and the lowermost bars of the two sections are held in spaced relation by stop lugs 47, as shown in Figs. 9 and 10. The swinging or movable section 44 is pressed against the stationary section 43 by a coil spring 48 arranged between the lower bar of the movable section, and a U-shaped bracket 49 fixed to the corresponding bar of the stationary section, as shown in Fig. 10. The open upper end of the upper portion of the coin chute is disposed opposite a coin-receiving slot 50 in the front wall of the casing, and at said end of the movable section 44 is fixed an angular cam plate 51 which is adapted to be engaged by a coin inserted in the slot 50. The engagement of the coin with said cam plate 51 causes the movable section 44 of the chute to swing away from the stationary section and against the tension of the spring 48. 52 denotes a magnet arranged in the upper bar of the stationary section 43 and adapted to stop or arrest an iron disk inserted in the coin chute.

In operation, the hand wheel 13 must first be turned to bring the desired merchandise section of the holder into operative position with respect to the ejecting mechanism, such position being readily observed through the side opening 5. A coin is then inserted in

the slot 50 and when it reaches the lower end of the chute 33 it will project the dog 29 into engagement with the plunger so that the push rod 25 may actuate the same. When the plunger is moved, it engages and actuates the lever 22 and causes its segmental gear 19 to slide the ejector 16 in a forward direction so that the ejector finger 38 will discharge the lowermost package of gum or other merchandise into the chute 35, from which latter it may be removed through the opening 36. As the plunger 23 moves rearwardly it carries the dog 29 from beneath the chute 33 so that the dog may tilt to permit the coin to drop on to the bottom of the casing. When the coin leaves the dog the bent end of the latter which is heavier than its straight end, returns the dog to a normal position so that it releases the push rod. When said push rod is released the spring 27 restores it to a normal position, and the spring 18 returns the ejector slide 16 to its normal position, ready for the next operation. Should an iron disk or plate be inserted in the coin slot it will be attracted and held by the magnet 52 so that when the next coin is inserted in the slot 52 it will swing the movable section 44 of the chute outwardly to permit such iron disk to drop to the bottom of the casing without passing through the lower portion of the chute 33 and actuating the dog 29.

While the preferred embodiment of the invention has been shown and described in detail, it will be understood that I do not wish to be limited to the precise construction set forth, since various changes in the form, proportion and arrangement of parts, and in the details of construction, may be resorted to within the spirit and scope of the invention.

Having thus described the invention what is claimed is:

1. In a machine of the character described, the combination of a casing, a goods holder therein, a spring retracted ejector slide provided with a rack, a lever pivoted intermediate its ends and having a segmental gear to mesh with said rack, a spring retracted push rod having a plunger portion to engage and actuate said lever, means for locking said plunger, and a weighted ejector finger pivoted to said ejector slide for limited swinging movement.

2. In a machine of the character described, the combination of a goods supporting means, a spring retracted ejector slide provided with a rack, a lever pivoted intermediate its ends and having a segmental gear to mesh with said rack, a spring retracted push rod having a plunger portion to engage and actuate said lever, means for locking said plunger, and a self-righting ejector finger carried by the ejector slide and mounted for limited movement independent of the ejector slide.

3. In a machine of the character described, the combination of a casing, a spring retracted ejector slide provided with a rack, a weighted ejector finger pivotally mounted on said slide for limited swinging movement, a goods holder rotatably mounted in the casing and having an annular series of upright goods holding sections adapted to be brought into operative relation with respect to the ejector slide and its finger, means for actuating and controlling said goods holder, a lever fulcrumed intermediate its ends and having a segmental gear to mesh with said rack, a slidably mounted tubular plunger to engage and actuate the other end of said lever, said plunger having a transverse opening, a spring retracted push rod to slide in said tubular plunger, and means to enter said transverse opening in the tubular plunger and project into the path of said push rod.

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

MATHIAS J. WALTHER.

Witnesses:
EDNA M. MILLER,
FRED E. BRUM.