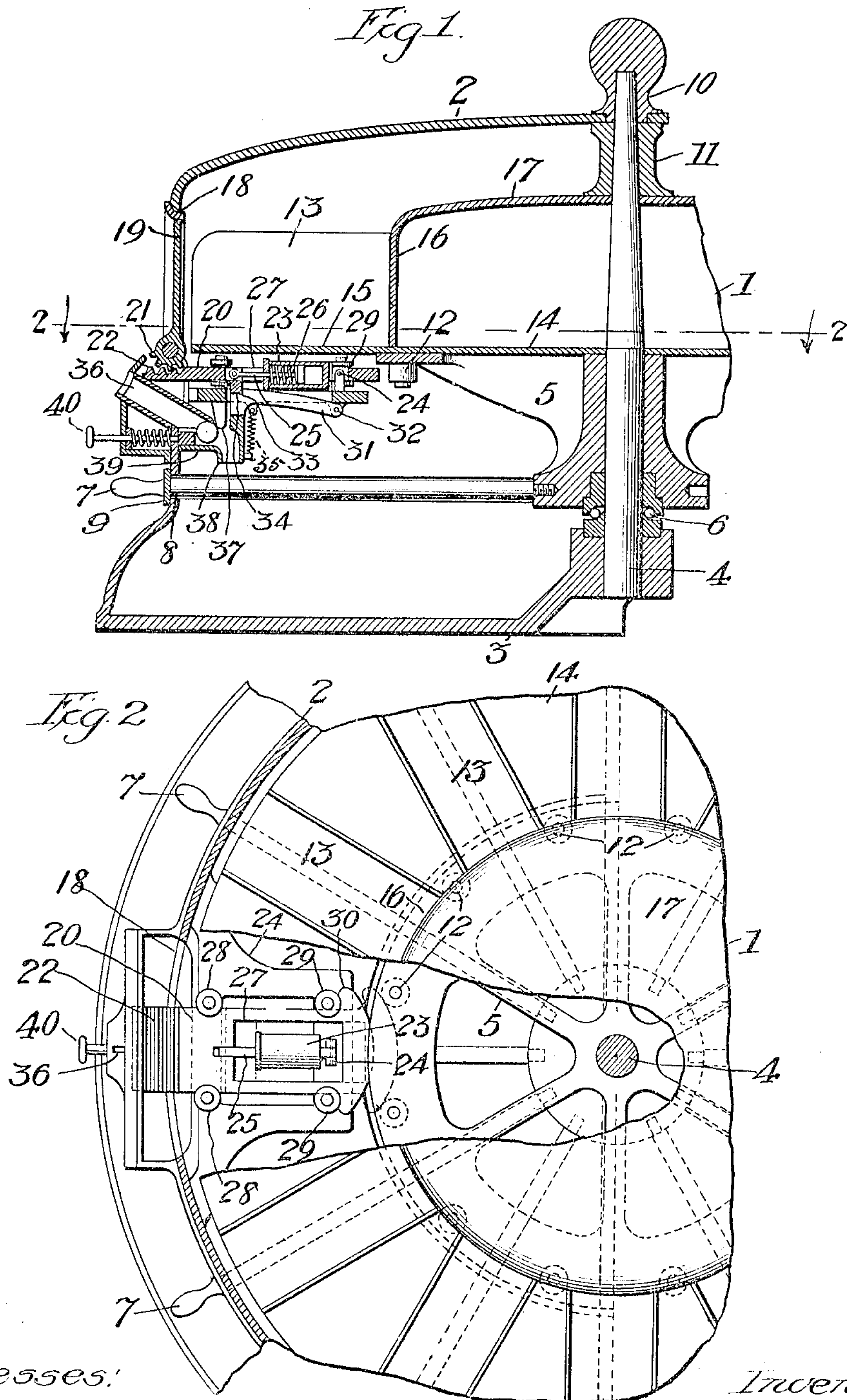


E. W. LINDGREN.
VENDING APPARATUS.

APPLICATION FILED NOV. 13, 1907. RENEWED JAN. 14, 1909.

913,663.

Patented Feb. 23, 1909.



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UNITED STATES PATENT OFFICE.

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VENDING APPARATUS.

No. 913,663.

Specification of Letters Patent.

Patented Feb. 23, 1909.

Original application filed June 8, 1904, Serial No. 211,667. Divided and this application filed November 13, 1907,
Serial No. 401,960. Renewed January 14, 1909. Serial No. 472,371.

To all whom it may concern:

Be it known that I, ERICK WALDEMAR LINDGREN, a subject of the King of Sweden, residing at Hagalund, near Stockholm, Sweden, and whose post-office address is Jarfvagatan 6, Hagalund, near Stockholm, Sweden, have invented certain new and useful Improvements in Vending Apparatus; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in vending machines of that class wherein a movable carrier is provided for the goods to be vended and wherein a casing is provided to inclose the goods and the carrier, the said casing being provided with means whereby the goods of the carrier are rendered accessible to the purchaser.

The device of my invention herewith disclosed is designed for use in connection with coin controlled apparatus and in my application filed June 8, 1904 Serial Number 211,667 a form of apparatus is shown which may be used in connection with the device herewith disclosed.

The invention will be more particularly described in connection with the accompanying drawing and will be fully pointed out and ascertained in and by the appended claims.

In the drawing:—Figure 1 is a sectional view of a portion of an apparatus embodying the main features of my invention. Fig. 2 is a sectional view on line 2—2 of Fig. 1 with parts broken away.

Like numerals of reference designate similar parts throughout the drawing.

As shown my invention comprises a movable carrier designated as a whole by 1 and which is inclosed in a casing 2 although it will be understood that the casing is not an essential feature of the invention as any equivalent means for normally preventing access to the goods by the purchaser would be serviceable. The casing illustrated is provided with a base 3 in which is journaled, and desirably fixed, a stud 4 which projects upwardly in the casing and forms a mounting for the carrier 1. This structure is found to be most convenient in cases where the apparatus as illustrated is of cir-

cular form but this form it will be understood is not essential to a full realization of the invention. The carrier includes a supporting frame 5, which is conveniently in the form of a spider, and which is desirably rotatively mounted on the stud 4. In order to facilitate rotative movement of the carrier a ball-bearing 6, of any suitable construction, may be interposed between the base 3 and the frame 5. Means are provided which are accessible from the exterior of the casing for enabling the purchaser to rotate the carrier and as shown such means consists of a plurality of radially disposed handles 7 which are secured in any convenient manner at their inner ends to the frame 5 and which project outwardly from the casing through a slot 8 formed therein. In order to maintain the slot 8 closed and prevent access to the casing a band of sheet iron 9, slightly wider than the slot 8, may be mounted on the handles 7 outside the casing. The casing at its upper end or top portion may be provided with a bearing member 10 adapted to receive the stud 4 and between the upper wall of the casing and the carrier there may be interposed a spacing member 11 in order to keep the carrier upon the bearing 6. Said carrier is provided with slide actuating devices preferably in the form of rollers 12 which are conveniently located on the lower portion of the frame 5 as clearly shown in Fig. 1 and whose function will hereinafter more fully appear.

A plurality of receivers 13 are provided and are supported by the carrier and are adapted to contain the goods to be vended. As shown a support 14, preferably in the form of a disk, is mounted upon the frame 5 and extends outwardly therefrom to a point adjacent the vertical wall of the casing and said disk conveniently forms the bottom wall 15 of the receivers 13. The lateral walls of the receivers 13 are indicated at 15 and extend from the outer periphery of the disk 14 inwardly to the inner walls 16 leaving the receivers 13 open at their outer ends and upper portions. The inner walls 16 of the several receivers are conveniently formed by a dome member 17 which conveniently extends to the inner ends of the partitions or walls 15 and upwardly into engagement with the spacing member 11.

The casing 2 is provided with an opening 18 located at a point adjacent the receivers 13 and in such a manner that as the carrier is rotated and the several receivers are successively advanced to the opening the goods to be vended will be accessible to the purchaser. A closure or door 19 is provided to normally prevent access to the goods in the receivers by closing said opening and the means whereby said door is opened to permit access to the vendible goods will now be described in detail.

A movable member, preferably in the form of a reciprocating slide 20, is operatively associated with the door 19 in a manner to open and close the same when actuated and as shown the operative connection is formed by providing teeth 21 upon the door 19 and a rack 22 upon the slide 20. The inner end of the slide 20 is desirably located in a plane coincident with the rollers 12 and is conveniently provided with a rounded surface adapted to be engaged by said rollers so that when the door 19 is open and the slide occupies a retractive position as indicated by dotted lines the rollers 12 will automatically engage and return the slide to the position shown in full lines and close the door 19 when the carrier is advanced to bring a new receiver adjacent the opening 18.

Means, which is preferably yielding in action, is provided to normally open the door and as shown said means consists of a spring holder, desirably in the form of a cylinder 23, which is pivotally secured to a suitable stationary part indicated at 24 and a connecting member 25 secured to the slide and between the enlarged end of which and said cylinder is interposed a spring 26. Conveniently said slide 20 is cut away as at 27 to afford a compact disposition of the parts. The slide 20 is desirably guided in its movement by suitable means such as rollers 28 and 29 disposed in pairs on opposite sides of the slide and spaced apart lengthwise thereof. In order to take up the shock of the closing movement of the slide when the same is actuated by the rollers 12 the slide is provided with extensions 30 which act as stops to limit forward movement of the slide.

From the foregoing it will be seen that the mechanism herein before described would normally tend to and would maintain the door 19 open except at such times as the rollers 12 are engaged to reciprocate the slide outwardly and therefore the vendible goods would normally be accessible to the purchaser. In order to prevent this normal disposition of the parts locking mechanism is provided which normally locks the parts in such a manner as to close the door except when a token or coin is deposited whereupon the parts are released by the

locking mechanism and the devices herein before described act to open the door. Any suitable coin controlled apparatus may be utilized to operate the locking mechanism but in order to make the adaptation clear I have shown the form of coin controlled apparatus disclosed in my application herein before identified and the same will be described in detail although it will be understood that the invention is not dependent upon this particular form of coin controlled apparatus.

The locking mechanism herein shown consists of a lever 31 which is pivotally secured at 32 to a suitable stationary part such as 24. The outer end of said lever is recessed or shouldered at 33 and is adapted to engage a projection 34 formed on the slide 20. A spring 35 serves to normally hold the lever in a position to engage the recess 33 with said shoulder 34. It will be seen that when the slide 20 is released from the position shown in Fig. 1 by depression of the lever 31 the spring 26 will immediately reciprocate the slide 20 inwardly thereby opening the door 19 and forcing the inner end of the slide 20 against the rollers 12. It will be seen that if the carrier has not been moved to a position whereby the receiver 13 adjacent the opening 18 is not accurately aligned therewith the engagement of the inner end of the slide 20 with the rollers 12 and between the same will serve to center the receiver with the opening before the door is fully opened and therefore the novel arrangement of the parts serves as a centering means for the carrier. After the door 19 has been opened and the purchaser has obtained the vendible article from the receiver the door will remain open until the next purchaser desires to make his purchase and upon noting the empty receiver, the said next purchaser will grasp one of the handles 7 and rotate the carrier to bring or advance the next receiver 13 to a point adjacent the opening 18. This movement of the carrier will effect the herein before described engagement of one of the rollers 12 with the slide 20 thereby reciprocating the same outwardly and closing the door 19. This outward movement of the slide will advance the projection 34 past the shoulder 33 whereupon the spring 35 will raise the lever 31 to the position shown in Fig. 1 thereby locking the door 19 in a closed position and preventing further removal of the vendible goods until a token or coin is deposited.

The coin controlled mechanism associated with the locking lever 31 will now be described in detail. A coin chute is shown at 36 for the reception of the token or coin employed and at its delivery end a fixed projection 37 is provided which serves to normally prevent the coin from leaving the

chute. An extension 38, of the coin chute is mounted upon the lever 31 and is provided with a lower wall 39 upon which the token or coin is adapted to strike, and between which and the projection 37 the coin is normally prevented from passing. A spring controlled plunger 40 is provided and is so disposed that its inner end is adapted to engage the coin or token when said plunger is forced inwardly. Upon such inward movement of the plunger the inner end thereof will force the coin beneath the projection 37 thereby depressing the extension 39 against the action of spring 35 and releasing the lever 31 from engagement with the slide 20.

I claim:

1. A vending machine comprising in combination, a casing provided with an opening and a door therefor, a carrier movably mounted in said casing and provided with a plurality of receivers for the goods to be vended adapted to be successively advanced into registry with said opening, a slide operatively connected with said closure a stationary spring holder, a spring therefor, a connecting member secured to said slide and operatively associated with said spring and holder, a spring actuated locking member adapted to engage said slide and lock said door in a closed position, and a plurality of rollers for said carrier adapted for engagement with said slide and serving when the door is open and the carrier is being advanced to engage said slide and automatically close said door.

2. A vending machine comprising in combination, a casing provided with an opening and a door therefor, a carrier movably mounted in said casing and provided with a plurality of receivers for the goods to be vended adapted to be successively advanced into registry with said opening, a slide operatively connected with said door, a stationary spring holder, a spring therefor, a connecting member secured to said slide and operatively associated with said spring and holder, a spring actuated locking member adapted to engage said slide and lock said door in a closed position, and a plurality of rollers for said carrier adapted for engagement with said slide and serving when the door is open and the carrier is being advanced to engage said slide and close said door, the arrangement of said rollers being such that the slide is engaged at opposite points thereby serving to center the advanced receiver with respect to the opening.

3. A vending machine comprising in combination, a casing provided with an opening and a door therefor, a carrier movably mounted and provided with a plurality of receivers for the goods to be vended adapted to be successively advanced into registry with said opening, a slide operatively con-

nected with said door, yieldingly acting means normally serving to retract said slide and open said door, a spring actuated locking member adapted to engage said slide and lock said door in a closed position, and a plurality of rollers for carrier and adapted for engagement with said slide to close said door when the carrier is being advanced.

4. A vending machine comprising in combination, a casing provided with an opening and a door therefor, a movably mounted carrier provided with a plurality of receivers for the goods to be vended adapted to be successively advanced into registry with said opening, a slide operatively connected with said door, yieldingly acting means normally serving to retract said slide to open said door, a spring actuated locking member adapted to engage said slide and lock said door in a closed position, and means supported by said carrier and adapted for engagement with said slide to close said door when the carrier is being advanced.

5. A vending machine comprising in combination, a casing provided with an opening and a door therefor, a movably mounted carrier provided with a plurality of receivers for the goods to be vended adapted to be successively advanced into registry with said opening, a slide operatively connected with said door, means normally serving to operate said slide to open said door, a locking member adapted to engage said slide and lock said door in a closed position, and means supported by said carrier adapted for engagement with said slide to close said door when the carrier is being advanced.

6. A vending machine comprising in combination, a casing provided with an opening and a door therefor, a movably mounted carrier provided with a plurality of receivers for the goods to be vended adapted to be advanced into registry with said opening, means normally serving to open said door, locking mechanism adapted to lock said door in a closed position, and devices serving when the carrier is advanced to close said door.

7. A vending machine comprising in combination, a circular casing provided with an opening and a door therefor, a rotatively mounted circular carrier provided with a plurality of receivers for the goods to be vended adapted to be advanced into registry with said opening, means normally serving to open said door, locking mechanism adapted to lock said door in a closed position, and devices serving when the carrier is advanced to close said door and permit the locking mechanism to lock the same.

8. A vending machine comprising in combination, a casing provided with an opening, a movably mounted carrier for the goods to

be vended adapted to be advanced to bring portions of the goods carried thereby opposite said opening, a door for said opening adapted to be opened, devices serving when said carrier is advanced to close said door, and automatic locking mechanism for locking said door when the same is closed by said carrier.

9. A vending machine comprising in combination, a casing provided with an opening, a door for said opening adapted to be opened, a movable carrier for the goods to be vended adapted to be advanced to bring portions of the goods carried thereby opposite said opening, means normally serving to open said door, and instrumentalities associated with said door and carrier and serving when said door is open to center said carrier in a prescribed position with respect to said opening.

10. A vending machine comprising in combination, a casing provided with an opening, a door for said opening adapted to be opened, a carrier adapted to be advanced to bring portions of the goods carried there-

by opposite said opening, means normally tending to open said door, and instrumentalities associated with said door and carrier and serving to close said door when said carrier is advanced.

11. A vending machine comprising in combination, a casing provided with an opening, a door for said opening adapted to be opened, a carrier for the goods adapted to be advanced to bring portions of the goods carried thereby opposite said opening, instrumentalities associated with said door and carrier and serving when said carrier is advanced to center the same in a prescribed relation with respect to said opening and serving when said carrier is further advanced to close said door, and automatic locking mechanism serving to lock said door when closed by said carrier.

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

ERICK WALDEMAR LINDGREN.

Witnesses:

HJALMAR ZETTERSTRÖM,
FRITZ HALLIVE.