

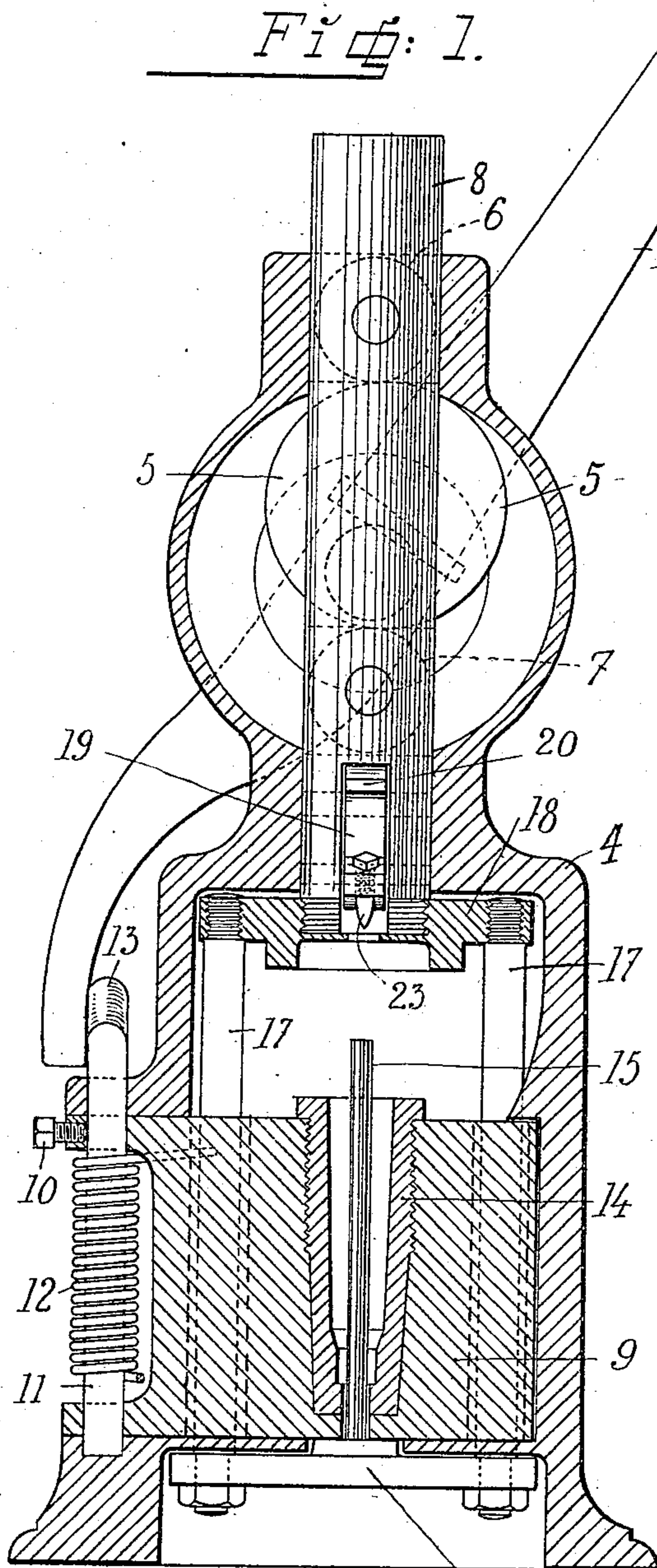
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PATENTED FEB. 25, 1908.

D. LARSSON.
APPARATUS FOR REMOVING THE PERCUSSION CAPS FROM
DISCHARGED SHELLS.

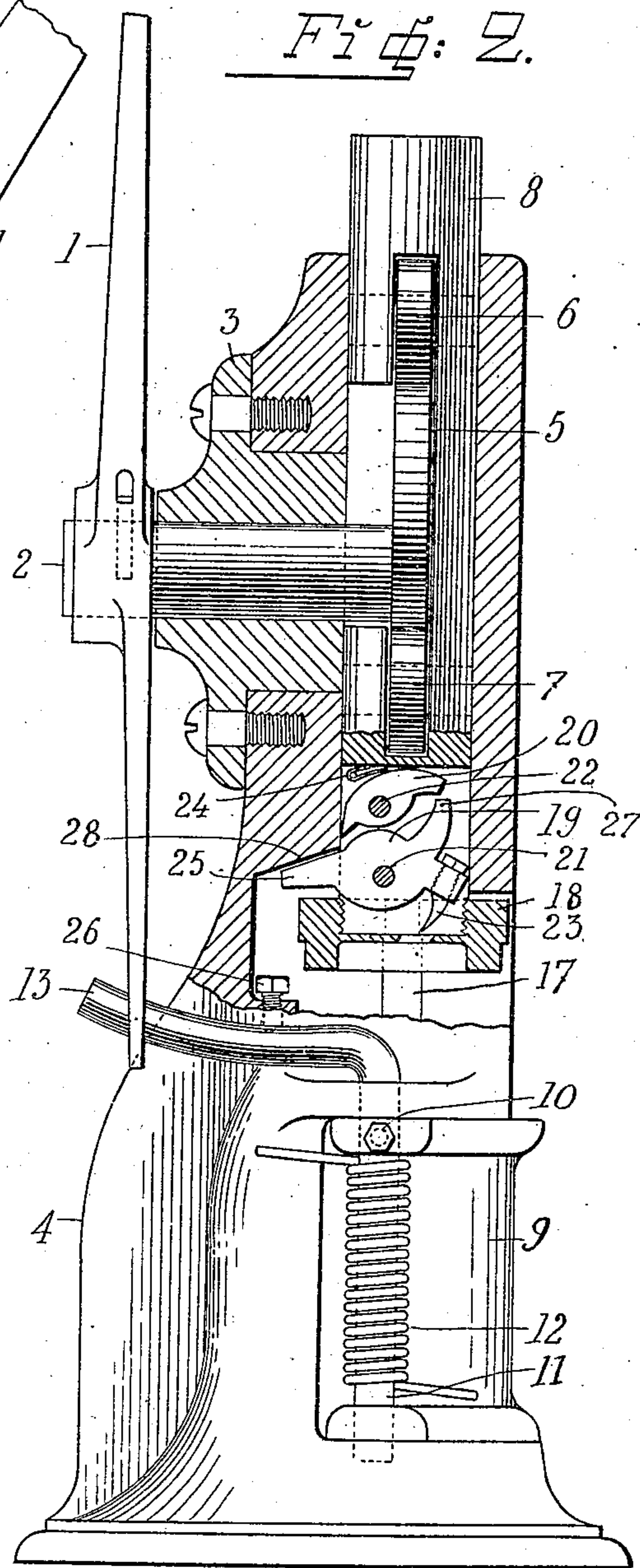
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Fig. 1.



Witnesses
Ewaldson
Karl Runeskog

Fig. 2.



Inventor
Daniel Larsson
by Olofson
His Atty

UNITED STATES PATENT OFFICE.

DANIEL LARSSON, OF SMEDJEBACKEN, SWEDEN, ASSIGNOR TO AKTIEBOLAGET B. A. HJORTH & CO., OF STOCKHOLM, SWEDEN.

APPARATUS FOR REMOVING THE PERCUSSION-CAPS FROM DISCHARGED SHELLS.

No. 880,147.

Specification of Letters Patent.

Patented Feb. 25, 1908.

Application filed February 6, 1906. Serial No. 299,796.

To all whom it may concern:

Be it known that I, DANIEL LARSSON, a subject of the King of Sweden, and resident of Smedjebacken, Sweden, have invented a new and useful Improvement in Apparatus for Removing the Percussion-Caps from Discharged Shells, of which the following is a specification, reference being had to the drawing accompanying and forming a part thereof.

This invention relates to improvements in such apparatus for removing the percussion caps from discharged shells as are provided with a reciprocating piston operated by a lever, or the like, and having an extractor for removing the percussion caps from the bottom of the shells.

The object of the invention is to make the function of such apparatus more reliable than heretofore, and it consists, chiefly, in the combination with an apparatus of the said kind of a lever, or the like, pivoted to the one end of the up and down movable piston, a pin or the like, secured to the said lever and adapted to grip the percussion caps, and a locking device which, when the said lever has been turned for gripping the percussion cap, locks the said lever and thereby prevents the pin from releasing the percussion cap while the piston is moved upwards.

In the accompanying drawing I have illustrated one embodiment of my invention applied to an apparatus which simultaneously with the removing of the percussion caps compresses the mouth of the shells.

Figure 1 shows a vertical section of the apparatus, and Fig. 2 shows partly a section of the same at right angles to the section shown in the Fig. 1, and partly in elevation.

Referring to the drawing, the apparatus in well known manner is provided with an operating lever 1, secured to an axle 2, which is journaled in a bearing 3 secured to the frame 4 and which also supports a cam-disk 5, engaging two rollers 6 and 7 journaled in a slot of a piston 8, which as usual is reciprocating in the frame 4. In the lower part of the latter is provided a block 9 which by means of a set-screw 10, or the like, is rigidly secured to a vertical axle 11, surrounded by a spring 12 tending to turn the block 9 towards the frame. The said vertical axle 11 is provided with a laterally projecting arm 13, adapted to be engaged by the lower end of the lever 1 when the

upper end of the latter is turned to the left in Fig. 1, whereby the block 9 can be turned out. In the block 9 is inserted a usual compressing-sleeve 14 through which extends a rod 15 resting loosely on a cross-piece 16 which is supported by bolts 17 the upper ends of which are screwed into or secured in any other manner to a ring 18 secured to the lower end of the reciprocating piston 8. For removing the percussion caps the piston 8 is at the lower end and in a recess therein provided with a lever 19, or the like, and a pawl 20, the said lever and pawl being turnable on pins 21 and 22 respectively. At the one end of the said lever 19 is secured a pin 23. The pawl 20 is actuated by a spring 24 and is adapted in the manner explained herebelow to lock the said lever 19.

The apparatus described above is used and works as follows: The upper arm of the operating lever 1 is at first turned to the left from the position shown in Fig. 1, whereby the block will be turned out so that a shell can be inserted into the compressing-sleeve and around the rod 15. When the lever is thereupon turned in the opposite direction, the block 9 will by the action of the spring 12 turn inwards so as to bring the shell in the compressing-sleeve into position below the piston 8. At the same time the piston 8 together with the cross-piece 16 and the rod 15 is lowered. In the continued downward movement of the piston the rear arm 25 of the lever 19 will strike a stop-screw 26 or the like, whereby the other arm of the said lever will be turned downwards. The pin 23 now enters into the percussion cap in an inclined direction at the same time as the piston forces the shell downwards in the compressing-sleeve. When the pin 23 has entered the percussion cap the pawl 20 will by the action of the spring 24 be turned down so as to engage a projection 27 of the lever 19 thereby locking the latter, so that the pin 23 when the piston is thereupon raised, will reliably remove the percussion-cap from the shell. When the piston has been raised a certain distance the rear end of the pawl 20 will strike a shoulder 28 of the frame 4 and unlock the lever 20 whereupon also the latter will strike the said shoulder 28 and be turned so as to release the percussion cap.

Obviously I do not limit myself to the construction shown in the drawing, in as much as the same may be modified in details with-

out deviating from the principle of the invention. For instance, the piston 8 being described above as reciprocating up and down may be reciprocating in any other direction. The locking device may be of any suitable construction, and so on.

Having now described my invention what I claim is:

1. The combination with an apparatus for removing the percussion caps from discharged cartridge shells having a reciprocating piston, and an operating member for moving the said piston, of a lever pivoted to the latter, a pin carried by the said lever and adapted to grip the percussion caps, a stop adapted to make contact with the said lever and turn it into operative position during the last part of the movement of the piston toward the shell, a spring-actuated member pivoted to the piston and adapted to lock the lever in position, when the pin thereon has entered the cap of the shell, and parts adapted to successively make contact with the locking member and with the uncapping lever during the movement of the piston away from the cartridge shell so as to first unlock the lever and then turn it into inoperative position, substantially as and for the purpose set forth.

2. The combination with an apparatus for removing the percussion caps from discharged cartridge shells having a reciprocating piston, and an operating member for moving the said piston, of a lever pivotally mounted in a recess at the operating end of the piston, a pawl pivotally mounted in the said recess above the said lever, a pin secured to the said lever and adapted to grip the percussion caps, a stop adapted to make contact with the said lever and turn it into operative position during the last part of the movement of the piston toward the shell, a spring acting upon the pawl to turn it into locking engagement with the uncapping lever, when the pin thereon has entered the cup of the shell, and a shoulder adapted to successively make contact with the locking member and with the uncapping lever during the movement of the piston away from the

cartridge shell so as to first unlock the lever and then turn it into inoperative position, substantially as and for the purpose set forth.

3. An apparatus for removing the percussion caps from discharged cartridge shells comprising in combination a frame, a piston adapted to be reciprocated in the said frame, an operating lever for moving the said piston, a spring-actuated block pivotally mounted in the frame and carrying a compressing-sleeve for the cartridge, said sleeve being situated in the prolongation of the axis of the piston, when the block is retained, by its spring, into operative position, a bottom situated beneath the block and carried by the end of the piston adjacent to the said block, a rod resting on the said bottom and extending through the block and the compressing-sleeve situated therein, means actuated by the operating lever for turning the block into its shell-receiving position, when the said lever is turned in the one direction, a lever pivotally mounted in a recess at the operating end of the piston, a pawl pivotally mounted in the said recess above the said lever, a pin secured to the said lever and adapted to grip the percussion caps, a stop adapted to make contact with the said lever and turn it into operative position during the last part of the movement of the piston toward the shell, a spring acting upon the pawl to turn it into locking engagement with the uncapping lever, when the pin thereon has entered the cup of the shell, and a shoulder adapted to successively make contact with the locking member and with the uncapping lever during the movement of the piston away from the cartridge shell so as to first unlock the lever and then turn it into inoperative position, substantially as and for the purpose set forth.

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

DANIEL LARSSON.

Witnesses:

JOHN DELMAR,
KARL RUNESKOG.