No. 631,911. Patented Aug. 29, 1899.

L. P. VALIQUET.

COIN OPERATED MECHANISM.

(Application filed Oct. 28, 1898.)

(No Model.) 4 Sheets—Sheet 1.

Fig. 1.

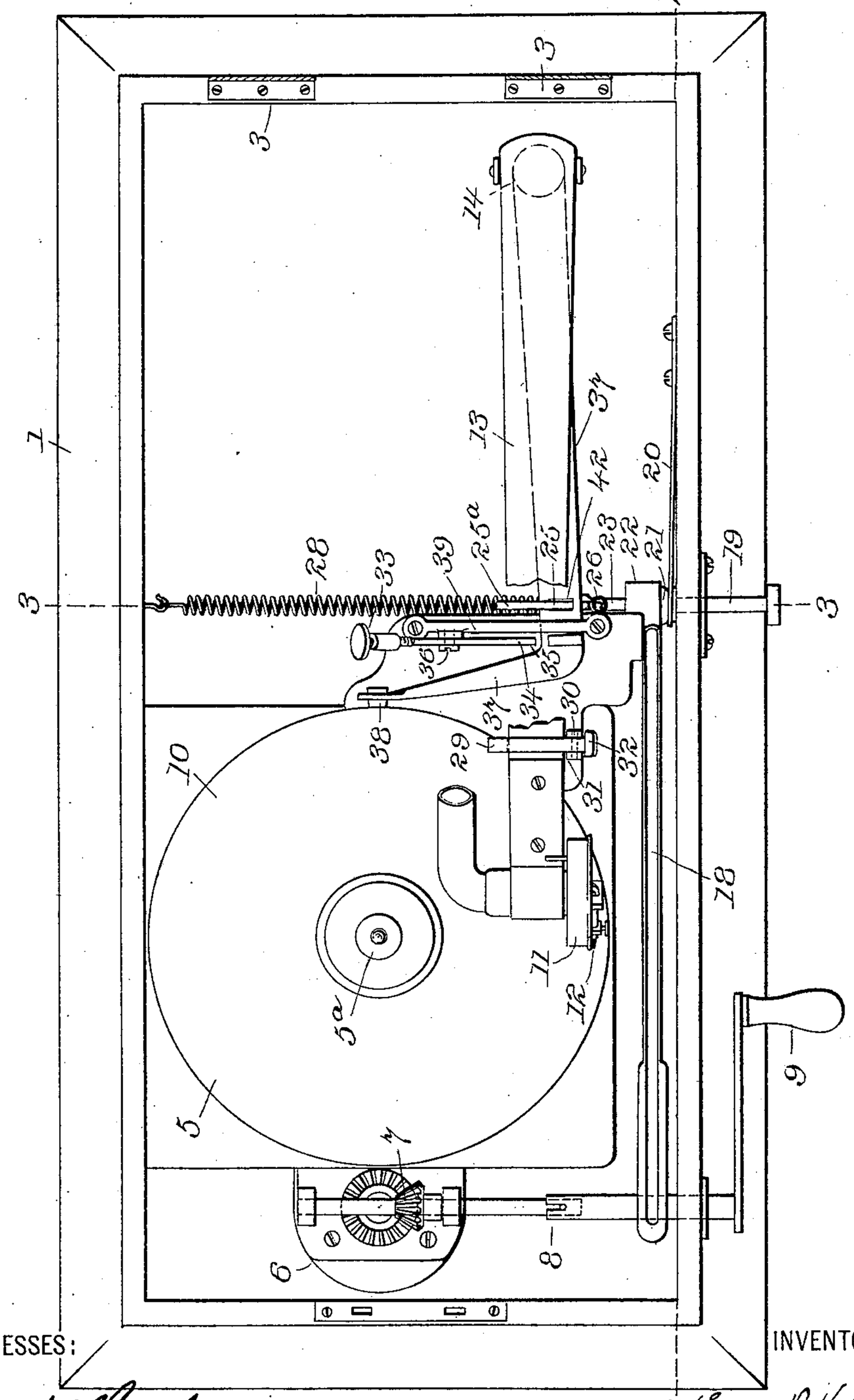

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Fig. 2.

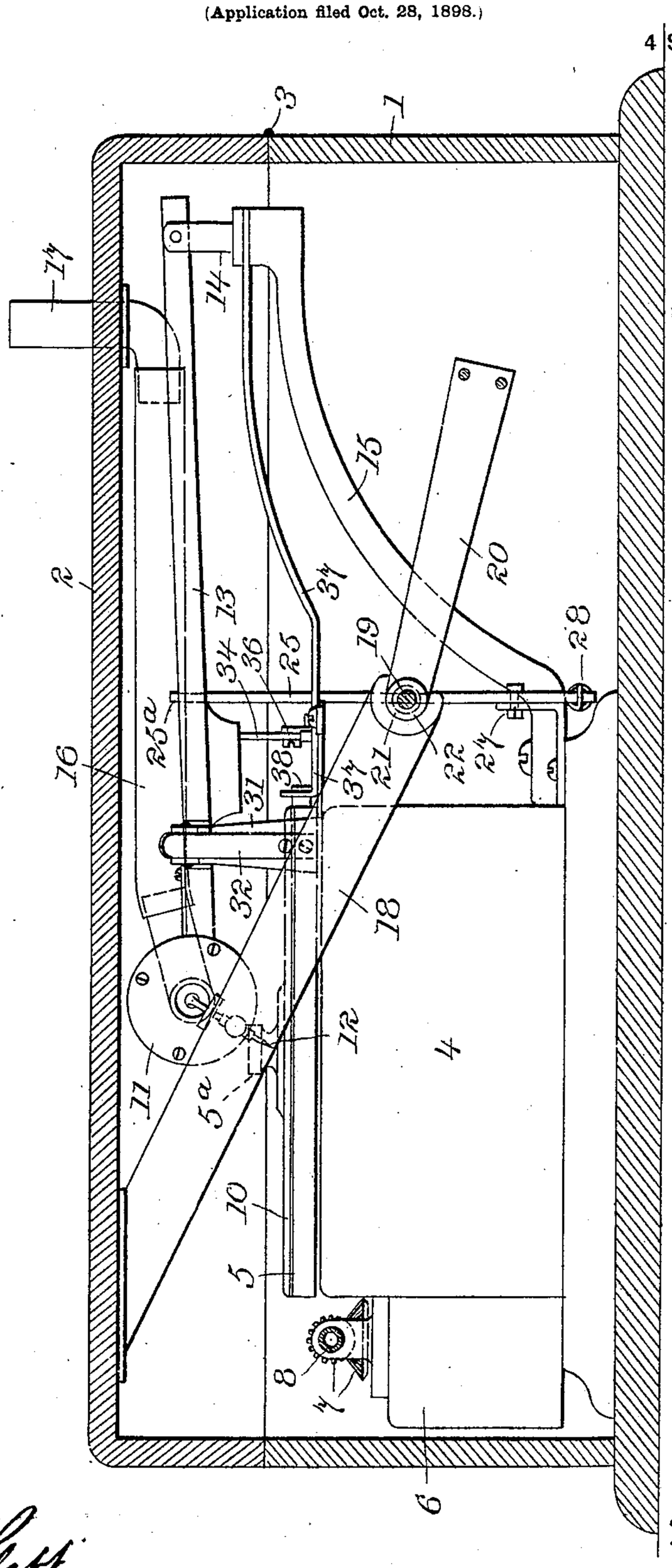

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Fig. 4.

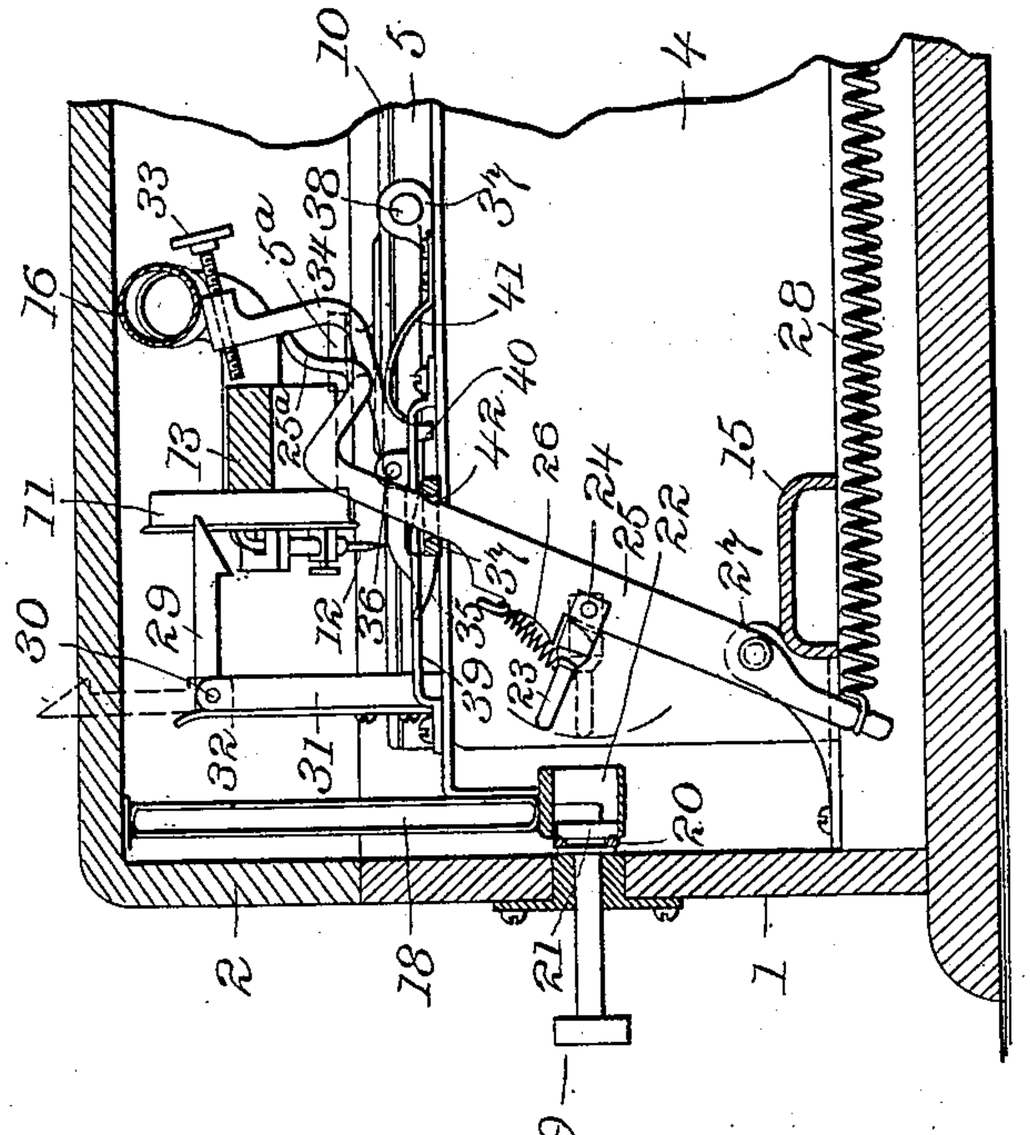
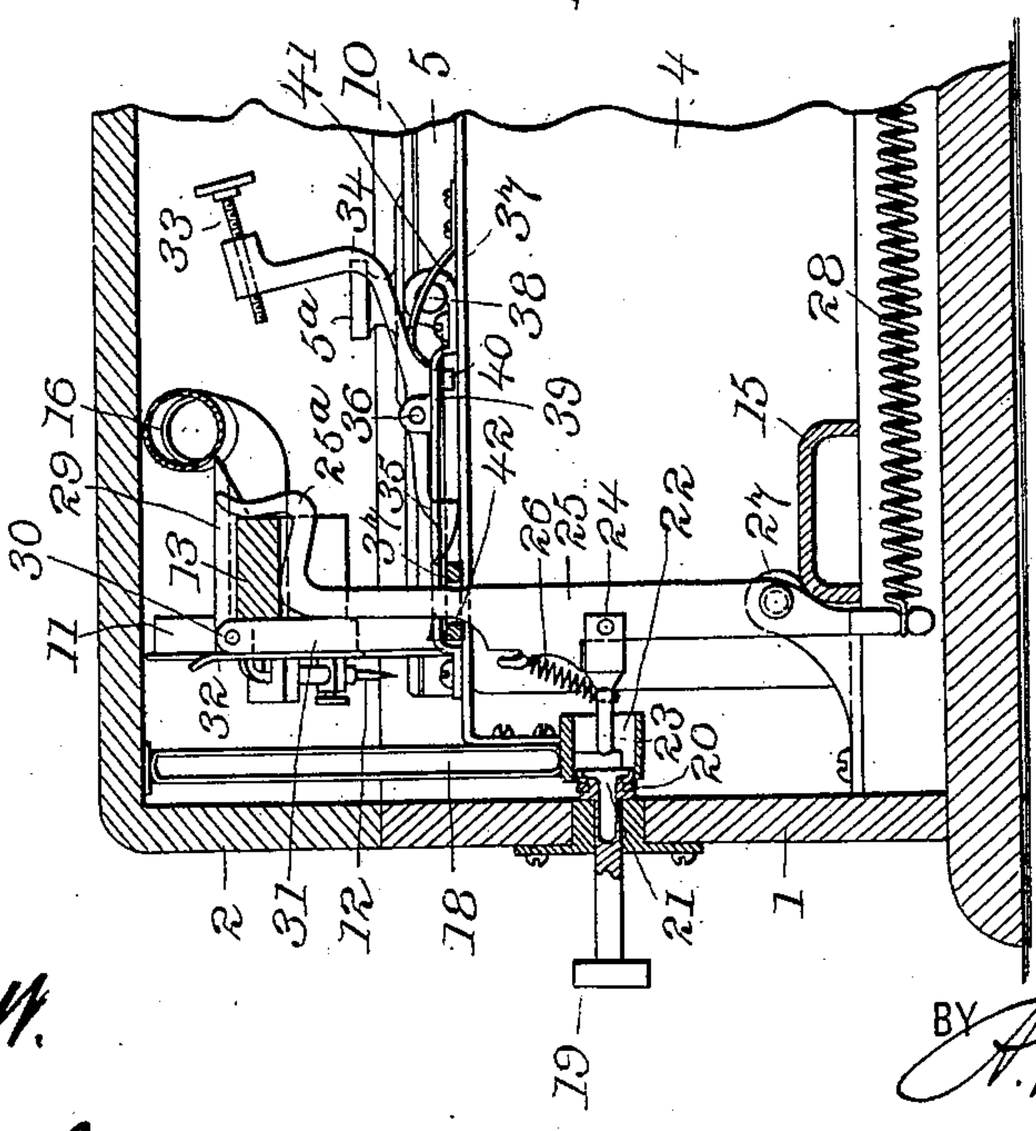


Fig. 3.



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(No Model.) 4 Sheets—Sheet 4.

Fig. 6.

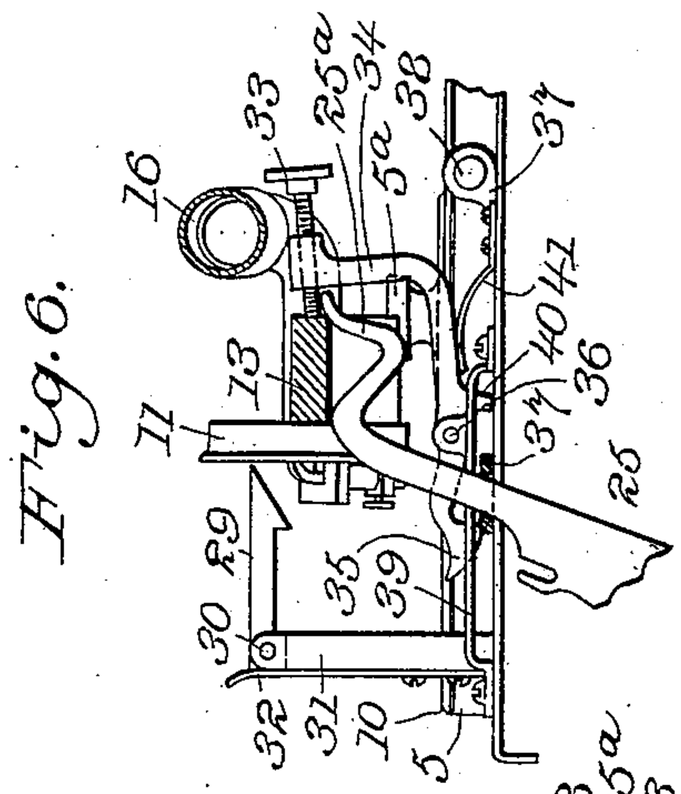
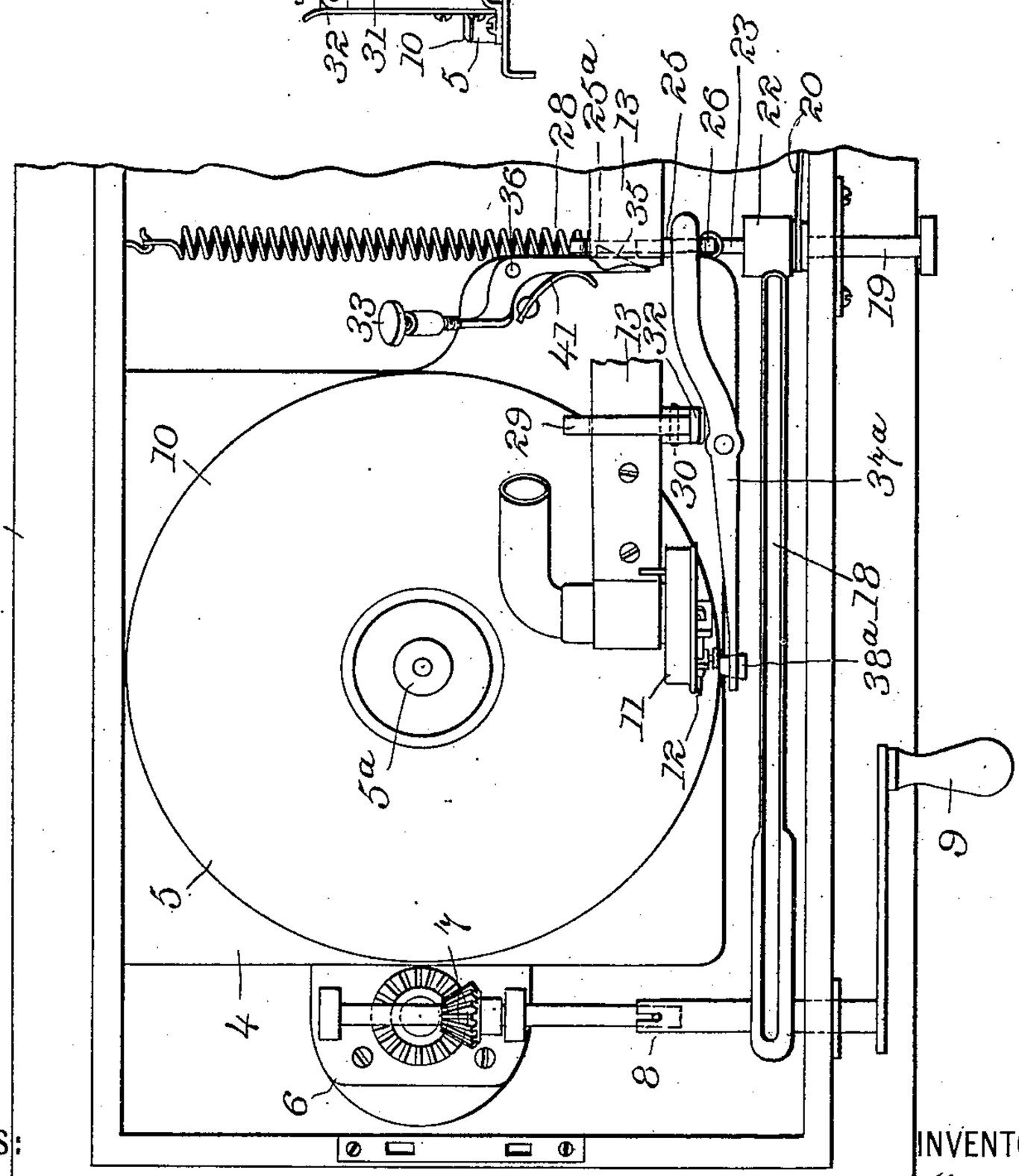


Fig. 5.



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UNITED STATES PATENT OFFICE.

LOUIS P. VALIQUET, OF NEW YORK, N. Y., ASSIGNOR TO THE UNIVERSAL TALKING MACHINE COMPANY, OF NEW YORK.

COIN-OPERATED MECHANISM.

SPECIFICATION forming part of Letters Patent No. 631,911, dated August 29, 1899.

Application filed October 28, 1898. Serial No. 694,824. (No model.)

To all whom it may concern:

Be it known that I, LOUIS P. VALIQUET, a citizen of the United States of America, and a resident of New York city, New York county, New York State, have invented certain new and useful Improvements in Coin-Operated Mechanisms, of which the following is a specification.

My invention relates to coin-operated devices generally, and is more specifically designed to produce a coin-operated mechanism for automatically operating what is known as the "gramophone."

My invention is an improvement on the apparatus heretofore constructed having a worm-screw or other slow-acting return-feed, and is designed to produce a mechanism giving a quicker return of the needle-carrying arm to its initial position and greater certainty of operation, while at the same time reducing the number of parts, and consequently simplifying and cheapening the construction.

The preferred form of apparatus embodying my invention is illustrated in the accompanying four sheets of drawings, in which—

Figure 1 is a plan view of the apparatus with the top of the case containing the same removed and a portion of the needle-carrying arm broken away. Fig. 2 is a vertical section on line 2 2 of Fig. 1. Fig. 3 is a partial section on lines 3 3 of Fig. 1, showing the needle-carrying arm in its initial position and the mechanism at rest. Fig. 4 is a similar section showing the gramophone in operation, the parts being in the position occupied by them just before the return mechanism is tripped into operation. Fig. 5 shows a modified form of brake-lever. Fig. 6 is a diagrammatic detail showing the retaining device just after it has been tripped and the return mechanism released and starting into operation to return the needle-carrying arm to the initial position shown in Fig. 3.

Throughout the drawings like reference-figures refer to like parts.

I have shown the gramophone and attached mechanism in a casing 1, having a hinged cover 2, attached to the casing by hinges 3 3 at one end. A sliding or other form of movable cover might of course be employed.

The gramophone has the ordinary form of base 4, containing rotating mechanism, (not shown,) on which the rotating table 5 is mounted. A spring-motor of any desirable form (not shown) is located in the addition 6 to said gramophone-base. This motor is wound up by means of bevel-gears 7, a shaft 8, and winding-handle 9, the latter being outside of the casing 1. On the rotating table is the ordinary gramophone-record 10, clamped thereon by a thumb-screw 5^a in the usual manner, so as to rotate therewith. On this record rests the reproducing-needle 12 of the sound-box 11, carried by the swinging arm 13, said arm being mounted by a universal joint 14 on the pivot-bracket 15, fastened to the gramophone-base, all in the usual and well-known manner when the machine is in operation and reproducing sounds from the record.

16 is a piece of tubing, of rubber or other flexible material, extending from the sound-box 11 to the elbow-shaped tube 17, which extends through the cover of the surrounding casing and to which an ordinary horn may be connected.

There is a U-shaped coin-chute 18 extending from beneath a slot in the cover 2 to the cylindrical coin-guide 22 at right angles to said chute. In line with this coin-guide is the coin-pusher 19, normally held back by the plate-spring 20 or equivalent elastic device. On the end of this pusher and sliding in the coin-guide is the cup-shaped end 21 of the said coin-pusher, and in line with the axis of this cup and the coin-guide is the operating-plunger 23. This operating-plunger is preferably pivoted on the lever 25 by means of the pivoted joint 24, and the spring 26 normally holds said plunger at right angles to said lever 25. This lever 25 is pivoted on the bearings 27 in the bottom of the case 1 and controlled by the spring 28, so that its upper hook-shaped end 25^a is against the swinging arm 13 and under the same when the said arm is in its initial position against the stop 31. The pivoted catch 29, mounted on the stop 31 by the pivotal joint 30 and controlled by the back spring 32, overhangs and engages with the swinging arm 13 when the latter is supported in its initial position by the spring-controlled hook-shaped lever 25 in the manner above described.

The lever 25 engages with a horizontally-swinging brake-lever 37, pivoted on the end of the bracket 15 and carrying the brake-shoe 38, which engages the rotating table 5 when the spring-controlled lever 25 is in the position shown in Fig. 3 to hold up the needle-carrying arm 13. This engagement is preferably secured by passing the lever 25 through a slot 42 in the said brake-lever.

A modified construction is shown in Fig. 5, in which the brake-lever 37 is removed, and a lever 37ª is pivoted on the gramophone-base, one end of the lever carrying the brake-shoe 38ª, while the other end is struck by the spring-controlled lever 25 (upon its return) to apply the brake. In this case the guide 39 is also dispensed with.

34 is a retaining device in the form of a dog, pivoted at 36 and having a nose 35 arranged to slide over and grasp the brake-lever 37, thereby retaining the same and the lever 25 in a position out from under the needle-carrying arm.

33 is an adjustable screw mounted in the tail of the dog 34 and located in the line of travel of the needle-carrying arm 13 as the same is fed along by the sound-record during the operation of the machine.

41 is a spring tending to hold the dog 34 down in engagement with the brake-lever 37, and 40 is a lug on the dog 34, projecting down in the path of the brake-lever 37 and so located with reference to the pivot 36 of said dog that when the brake-lever strikes the lug it positively pulls the nose of the dog 35 down behind the brake-lever, thus assisting the action of the spring 41.

39 is a guide for the brake-lever.

The operation of my invention is as follows: The cover 2 of the casing being closed and the parts of the mechanism being in the position shown in Figs. 1 and 3, the operator first winds up the spring-motor by means of the handle 9 and then drops a coin down the coin-chute 18. He then forces in the coin-pusher 19, which drives the coin along the coin-guide 22 against the operating-plunger 23. This forces the spring-controlled lever 25 to the right, Figs. 3 and 4, the operating-plunger 23 turning on its pivot, so as to remain in line owing to the expansion of the spring 26. As the spring-controlled lever 25 goes over, it carries with it the brake-lever 37 until the latter has passed under the nose 35 on the retaining-dog 34, which immediately slips down behind said brake-lever. When the operator removes pressure from the coin-pusher 19, the spring 20 forces the same out and withdraws its cup-shaped end 21 from the coin, which latter drops into the box. The operating-plunger 23 being thereby released is drawn upward by the spring 26 from the dotted position shown in Fig. 4 to the position shown in full lines at right angles to the lever 25. When the hook-shaped supporting end 25ª is forced over to the right, as above described, the swinging arm 13 is prevented from traveling with it by the pivoted spring-catch 29. When the hook-shaped lever has passed out from under the swinging arm, the latter is free to drop down, and the reproducing-needle 12 engages with the record 10. The brake-shoe 38 having been withdrawn from the rotating table 5 by the first motion of the lever 25, said table and record carried thereby are already in rotation by the time the reproducing-needle comes down on the record and the gramophone begins to operate, reproducing sound, which is delivered through the tube 17. As the needle and sound-box are fed across the record by the action of the same in the well-known way, the swinging arm 13 travels toward the adjustable screw 33, mounted in the tail of the dog 34. Said screw is so adjusted that the arm will strike it when the needle has reached the end of the record. A slight further movement of the swinging arm depresses the rear portion of dog 34 against the spring 41 and lifts the nose 35 of the dog 34 from behind the brake-lever 37, as shown in Fig. 6. The spring 28 immediately acts to force said lever 25 back into the position shown in Fig. 3. On the way the hook-shaped end 25ª picks up the needle-arm 13 and carries it back under the spring-catch 29 and holds it there in its initial position ready for a repetition of the operation. The same movement of the lever 25 has forced the brake-shoe 38 up against the rotating table 5 and stops the rotation of the same. It has also readjusted the operating-plunger 23 in line with the cup-shaped end 21 of the coin-pusher 19 ready for the operation of another coin.

It is evident that in the absence of a coin no motion of the coin-pusher 19 will have any effect on the mechanism, because the plunger will simply pass into the interior of the cup and the lever 25 will not be moved. Also it is evident that if the coin-pusher 19 be forced in and withdrawn with great rapidity, so that under ordinary circumstances the brake-lever 37 might be forced back again by the spring 28 before the retaining device could recover from the shock and the violent throwing up of the nose 35 of the dog and respond under the action of spring 41 to seize and retain said brake-lever, the very fact of the rapid movement of the parts thus described will carry the brake-lever beyond its normal travel up against the lug 40 and so positively pull the dog 34 down into operative position and insure the retention of said brake-lever and connected parts in the position shown in Fig. 4 until tripped by the needle-carrying arm at the end of a complete operation of the gramophone.

The advantages of my invention result from the certainty of operation under all conditions, from the simplicity and cheapness of the apparatus employed, and from the rapidity of the return-feed action, which is practically instantaneous. It is also extremely convenient of manipulation, as by throwing up the pivoted catch 29 into the position shown in

dotted lines in Fig. 4 the needle-carrying arm can be lifted out of engagement with the hook 25^a and swung to one side for changing the records, putting in a new needle, and making other adjustments.

It is evident that various changes could be made in the details of the apparatus described without departing from the spirit and scope of my invention, so long as the general relative arrangement of parts shown in the drawings and the general principle of operation set forth in the specification are preserved. Weights might be substituted for springs and other forms of moving parts might be substituted for the levers, the coin might throw the parts into operation through other agencies than that of external pressure on the coin-pusher of the particular kind described, &c.; but all these variations I consider within the general scope of my invention.

While certain features of the above-described apparatus are shown and herein claimed in connection with coin-operated mechanism, it is evident that certain of such features could be employed without coin-actuated connections.

Having therefore described my invention, what I claim as new, and desire to protect by Letters Patent, is—

1. In a coin-operated device the combination of a swinging arm, a stop and catch for said arm, a spring-controlled lever which normally holds the arm against the stop under the catch, and coin-controlled means for pushing said lever out from under said arm, whereby said arm drops away from the catch, substantially as described.

2. In a coin-operated device the combination of a swinging arm, a stop and catch for said arm, a spring-controlled lever which normally holds the arm against the stop and under the catch, and coin-controlled means for pushing said lever out from under said arm, whereby said arm drops away from the catch, together with a retaining device which holds said lever out from under the arm, substantially as described.

3. In a coin-operated device the combination of a swinging arm, a stop and catch for said arm, a spring-controlled lever which normally holds the arm against the stop and under the catch, and coin-controlled means for pushing said lever out from under said arm, whereby said arm drops away from the catch, together with a retaining device which holds said lever out from under the arm, an automatic feed mechanism with which the swinging arm engages when dropped down, and a trip for the retaining device located in the path of the arm, substantially as described.

4. In combination with a gramophone, a lever which returns the reproducing-needle to its initial position after the operation of the gramophone and supports said needle in such position out of engagement with the record, and coin-operated means for forcing the lever out from under the needle-carrying arm, substantially as described.

5. In combination with a gramophone, a lever which returns the reproducing-needle to its initial position after the operation of the gramophone and supports said needle in such position out of engagement with the record, and coin-operated means for forcing the lever out from under the needle-carrying arm, together with mechanism for forcing the lever back under and into engagement with the needle-carrying arm, substantially as described.

6. In combination with a gramophone, a lever which returns the reproducing-needle to its initial position after the operation of the gramophone and supports said needle in such position out of engagement with the record, and a spring which normally holds said lever under and in engagement with the needle-carrying arm, together with coin-operated means for forcing said spring-controlled lever out from under said needle-carrying arm, substantially as described.

7. In combination with a gramophone, a lever which returns the reproducing-needle to its initial position after the operation of the gramophone and supports said needle in such position out of engagement with the record, and a spring which normally holds said lever under and in engagement with the needle-carrying arm, together with coin-operated means for forcing said spring-controlled lever out from under said needle-carrying arm, and a retaining device for holding said spring-controlled lever out of engagement with the needle-carrying arm, substantially as described.

8. In combination with a gramophone, a lever which returns the reproducing-needle to its initial position after the operation of the gramophone and supports said needle in such position out of engagement with the record, and a spring which normally holds said lever under and in engagement with the needle-carrying arm, together with coin-operated means for forcing said spring-controlled lever out from under said needle-carrying arm, a retaining device for holding said spring-controlled lever out of engagement with the needle-carrying arm, and a trip for said retaining device located in the path of the needle-carrying arm, substantially as described.

Signed by me at New York city, New York, this 15th day of October, 1898.

LOUIS P. VALIQUET.

Witnesses:
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A. PARKER-SMITH.