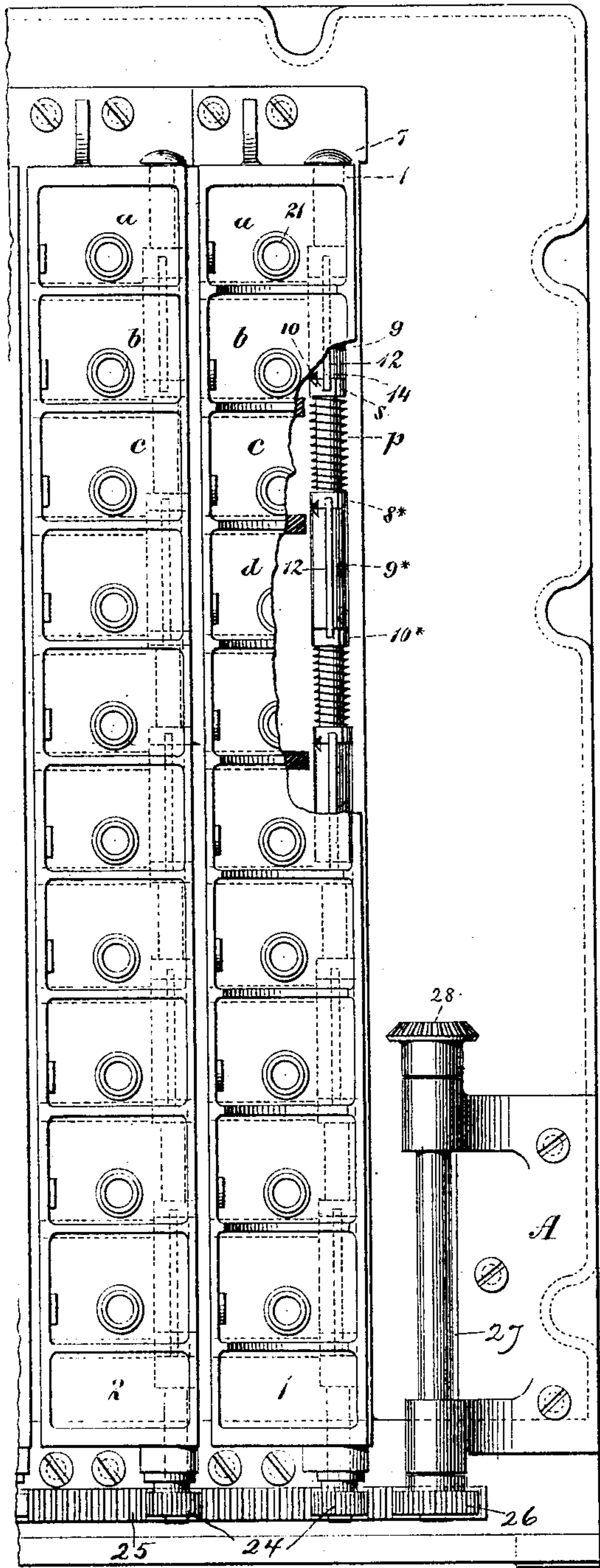


F. LAMBERT & S. ARONSON.
VOTING MACHINE.

No. 562,836.

Patented June 30, 1896.



WITNESSES:
Gustav Heinrich
John Kehlbeck

Fig. 1.

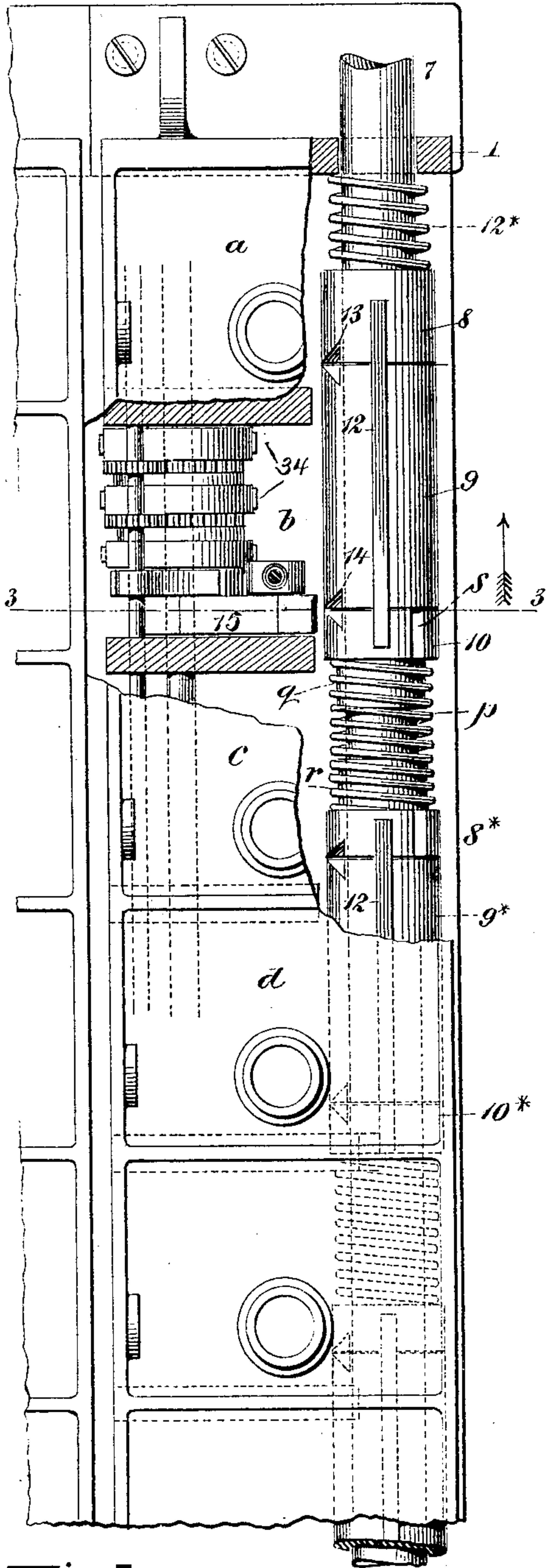


Fig. 2.

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(No Model.)

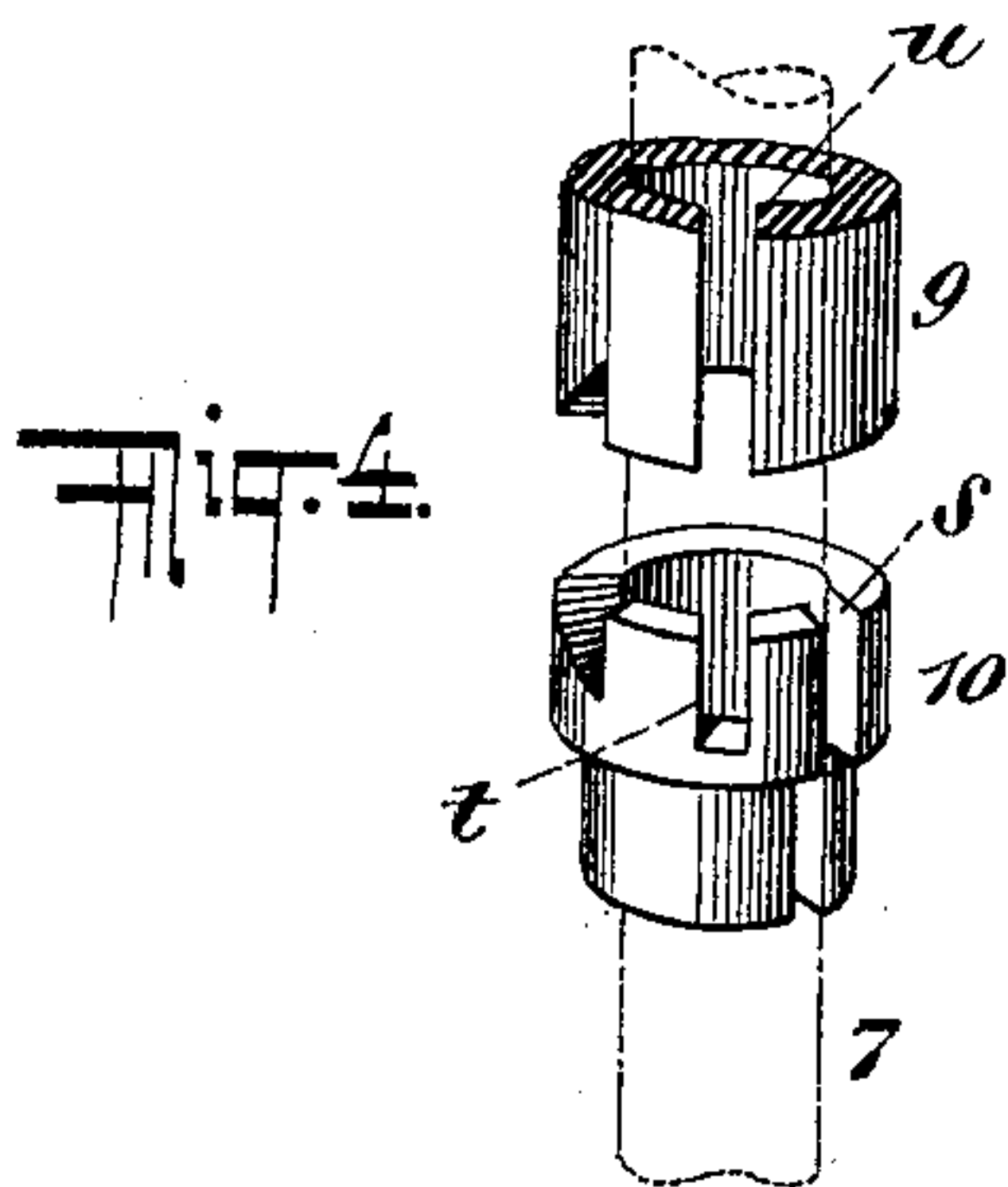
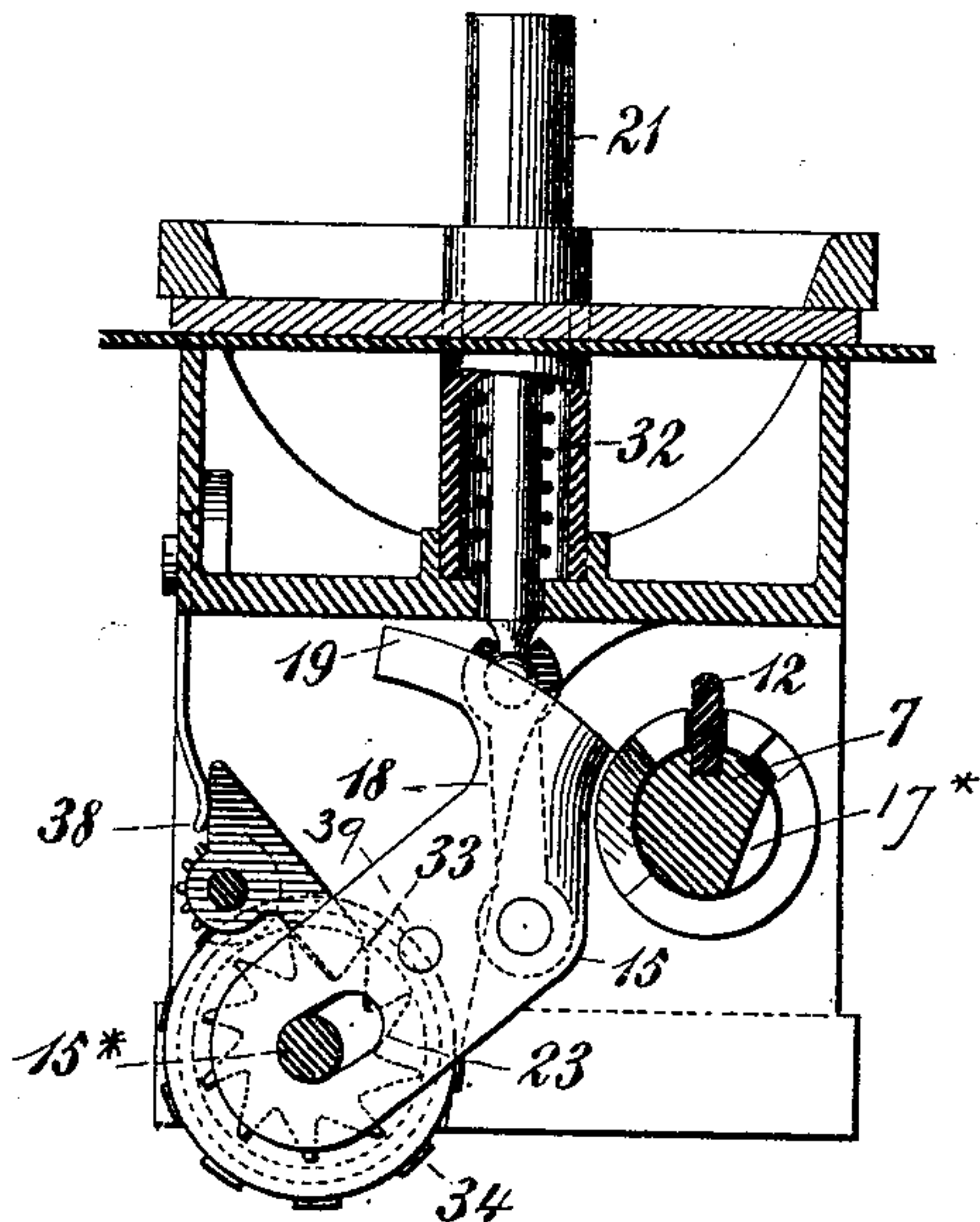
2 Sheets—Sheet 2.

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Fig. 3.



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UNITED STATES PATENT OFFICE.

FRANK LAMBERT AND SAUL ARONSON, OF BROOKLYN, NEW YORK.

VOTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 562,836, dated June 30, 1896.

Application filed June 11, 1895. Serial No. 552,428. (No model.)

To all whom it may concern:

Be it known that we, FRANK LAMBERT and SAUL ARONSON, of Brooklyn, Kings county, New York, have invented a new and useful Improvement in Voting-Machines, of which the following is a specification.

Our invention consists in an improvement relating to the voting-machine set forth in the application for Letters Patent, Serial No. 550,068, filed May 21, 1895, by Saul Aronson aforesaid. The machine set forth in said application is a means of mechanically indicating, registering, or recording votes, which is actuated by the voter. The unit thereof, which is repeated in it as many times as occasion may require, is a cell or compartment containing devices which actuate a registering and also a locking mechanism, which devices are operated by a double press-button. Each cell corresponds to a candidate to be voted for, and the several cells are arranged in groups, of which there will be as many as there are contesting parties, while there will be as many cells in each group as there are offices to be filled. The construction of the actuating and locking mechanism is such that the voter may register one vote for each office, for which purpose he may actuate the mechanisms of the proper cells in any group; but the fact that he has so actuated a certain cell mechanism in one group makes it impossible for him to actuate the corresponding cell mechanism in another group. Consequently, while the voter's choice of party and candidate is entirely unrestricted, he is debarred from voting for more than one nominee for each office. So also the construction is such as to make it impossible for him to vote for the same candidate more than once.

The object of the foregoing improvement is to adapt a machine having the general features of that above described to the purposes of what may be called "yes and no" voting. This sort of voting arises when a proposition such as a constitutional amendment or any great issue of public policy is submitted directly to the voters, who are called upon to signify an opinion either for or against the measure. It may happen that in a single election many of these questions may be submitted. To vote thus affirmatively or negatively with regard to a series of issues and

by means of mechanism involves conditions which differ materially from those which prevail when the voter has simply to indicate his choice of one out of several candidates. The latter can always be arranged in two groups, mainly with respect to the office for which they are nominated and with respect to the political party which presents them, so that, as in the Aronson machine described in the application aforesaid, the voter will find all the candidates of a given party arranged in due succession in line, say from right to left, and so disposed that all the candidates for a given office are grouped also in line in a direction at right angles to the political group. When particular issues, however, are to be voted upon, these may not be strictly party measures, and therefore it is not necessary to group them in this respect. The essential requirement is, however, that the mechanism pertaining to the voting on each separate question which is submitted shall be independent of all the mechanisms appropriated to the effecting of other and similar questions, and that it shall also be so constructed that, after the voter has made his choice by working the affirmative mechanism or the negative mechanism, he cannot operate the other mechanism of the pair.

In the accompanying drawings we have shown so much of the machine set forth in the above-named application of said Aronson as is necessary for the proper understanding of our present improvement.

Figure 1 is a face view of a part of the machine. Fig. 2 is an enlarged front view showing the details, with parts broken away to exhibit the internal mechanism. Fig. 3 is a section on the line 3 3 of Fig. 2, and Fig. 4 is a detail view showing the arrangement of the sleeves on the shaft 7.

Similar numbers and letters of reference indicate like parts.

A is a metal frame which rests horizontally on a table and so supports the apparatus. It carries several smaller frames, as 1 2, &c., each of which is divided by transverse partitions into cells or compartments, as *a b c d*. In each frame, as 1 2 3, there is a shaft 7, extending through all the cells.

For the purposes of the present description we will suppose that the successive pairs of

cells in each frame, as 1 and 2, are assigned to separate questions to be determined. Thus, to illustrate, the mechanism of cell *a* is to be operated to register an affirmative vote for a given question, the cell *b* to register a negative vote for the same question, the cell *c* to register an affirmative vote for a different question, the cell *d* to register a negative vote for that different question, and so on.

From what has already been stated it will be clear, therefore, that the following conditions must be realized: The voter must be perfectly free to make his choice from every pair of cells; that is to say, his operation of the mechanism of cell *a*, or cell *b*, must not in any wise interfere with his operating the mechanism of cell *c*, or cell *d*, and so on; but if he operates the mechanism of cell *a* he must, by that act, be prevented from operating the mechanism of cell *b*, and vice versa. What may be called, therefore, the "mechanical unit" of the machine resides in two cells, as *a b*, with their contained mechanism, and hence a description of the devices in one pair of cells will answer for those in all pairs.

The shafts 7, as we have said, extend through all the frames 1 2, &c., and therefore the several shafts 7 pass through the several cells in each frame respectively.

Referring now to Fig. 2, upon the shafts 7 are mounted three sleeves, as 8, 9, and 10. These sleeves are prevented from rotating on the shaft 7 by means of a feather 12.

It will be observed that the joint between sleeves 8 and 9 comes in compartment *a*, and that in the ends of the sleeves 8 and 9 is formed a triangular or wedge-shaped recess 13. A similar junction between the sleeves 9 and 10 comes in the compartment *b*, and at this junction there is provided a similar recess 14. Between the sleeve 8 and the wall of frame 1 is interposed a coiled spring 12*, and between the sleeve 10 and the sleeve 8 of the next series of sleeves there is interposed a coiled spring *p*.

It will be observed that the feather 12, by which the sleeves 8 9 10 are prevented from turning on the shafts 7, does not extend longitudinally through the sleeves 8 and 10, but is seated at its ends in said sleeve. The same arrangement will be seen of the feather 12 in connection with the sleeves 8*, 9*, and 10* of the next adjacent group. It will also be observed that the sleeves 10 and 8* are provided with projections *q* and *r*, which are surrounded by the coiled spring *p*. The object and purpose of this construction are as follows: The coiled spring *p*, as we have stated, serves to press the sleeves 8, 9, and 10 together. To that end it must have an independent abutment; and this it gains by bearing upon the sleeve 8*, which in turn receives and bears upon the feather 12. The same spring *p* serves to aid in holding together the sleeves 8*, 9*, and 10*, and, in performing that function, it gets a solid abutment against the sleeve 10 of the other group

of sleeves, which bears against the feather 12 therein in like manner. Another and important result which flows from this is that the sleeves 8, 9, and 10, for example, can be moved asunder, sliding in shaft 7 and so compressing the springs 12* and *p*, without affecting or moving the sleeves 8* 9* 10* of the adjacent group, because the movement of these sleeves 8 9 10 transmitted to the spring *p* will not be imparted to the sleeve 8*, because that sleeve obtains a solid abutment upon the feather 12. It will be understood, therefore, that each group of sleeves 8 9 10 or 8* 9* 10*, and so on, may be moved on the shaft 7 independently of every other group. Similar indicating and locking mechanism is contained in each of the cells, so that a description of that which appears in one will answer for all.

Referring to Fig. 3, in each cell there is a dog 15, supported on a fixed pivot-shaft 15*. The dog is slotted at 23, so that it may slide on its pivot, and is moved downward by a press-button 21, to which it is connected by a link 18. It is retracted upward by a coiled spring 32. On the pivot-shaft 15* is a ratchet-wheel 33, with which engages the pawl 38. From the ratchet 33 motion is communicated to a train of indicating, registering, or type wheels 34, which show the number of times the ratchet has been advanced one tooth, or, in other words, the number of times the button 21 has been pressed by the several voters.

When the dog 15 is moved downwardly by means of the press-button 21, its curved upper portion 19, entering recess 14, forces apart the sleeves 9 and 10. The sleeve 9, in moving in the direction to the top of the sheet of the drawings, carries with it the sleeve 8, and thus the recess 13, at the junction of the sleeves 8 and 9 in compartment *a*, is displaced from in front of the dog in that compartment. Hence, if said dog should be pressed down, it will strike the solid metal of the sleeve 9 and be prevented from going any farther, so that the operation of the dog 15 in compartment *b* in this way prevents the operation of the similar dog in compartment *a*. It is necessary, however, not only to organize the mechanism so that the voter who has operated the press-button of compartment *b* cannot operate that of compartment *a*, and vice versa, but also to arrange matters so that he cannot operate the press-button of either compartment *a* or compartment *b* more than once. This is effected in the following manner:

When the dog 15 is moved downward by means of the press-button 21, its curved upper portion 19, entering the recess 14, also bears against the shaft 7. The dog is thus moved rearwardly, sliding on its pivot 15*, and in this way a pin 39 on said dog is caused to act on the ratchet 33 to turn that wheel ahead one tooth, and thereafter the dog becomes locked between the ratchet in the shaft 7, because the ratchet is prevented from turn-

ing backward, and so releasing pin 39 by means of the pawl 38. In this way the press-button 21, being connected to the pawl 15 by the link 18, is held down after the first pressure, so that the feather cannot operate it and so vote a second time.

The dog 15 is released from its locked position by rotating the shaft 7, which has a mutilated portion 17*, so that said portion 17* comes opposite the dog, which is then free to be raised by the push-button-retracting spring. All of the shafts 7 in the several frames 1 2, &c., are operated simultaneously to release all the mechanisms which may have become locked, in the following manner: On the extremity of each shaft is a pinion 24, which engages with a rack 25, sliding in a groove in frame A. The rack is operated by pinion 26 on shaft 27, to which motion is communicated through the bevel-gear 28 by a shaft extending outside the machine and not shown, by turning which shaft all of the shafts 7 are simultaneously rotated, and the various locked mechanisms released.

Referring particularly to Fig. 4, this shows in detail the mode of placing the sleeves, such as 9 and 10, upon the shafts 7. There is made in the sleeve 10 a slit *s*, which, as the sleeve 10 is slid upon the shaft 7, receives the feather 12. As soon, however, as the sleeve 10 has passed below the feather 12 it is rotated, and the end of that feather is then received in the recess *t*. In the sleeve 9 the slit *u*, which receives the feather, extends entirely through the sleeve.

To recapitulate, now, the operation of the machine of our present improvement: When the press-button 21 of the compartment *b* is pushed down, the dog 15 enters the recess 14, and thus moves the sleeves 8 and 9 so that the recess 13 is no longer in position to be entered by the similar dog in compartment *a*. If, on the other hand, the dog in compartment *a* is compressed down so that it enters the recess 13, then the sleeves 9 and 10 are displaced, so that the dog 15 in compartment *b* is no longer in position to enter the recess 14. Then the descent of the dog operates the indicating, registering, or recording mechanism, and finally the dog, when in its lowest position, becomes locked in place by the means already described.

The point to which we desire to draw especial attention is that the operation of the mechanism of compartments *a* and *b* may take place without producing any effect upon the mechanism associated with compartments *c* and *d*, and vice versa, and therefore it is possible to vote affirmatively or negatively with regard to a single question by means of the devices in compartments *a* and *b*, and in like manner affirmatively or negatively with regard to some other question by means of the devices in compartments *c* and *d*.

The term "indicating mechanism" used in the claims is intended to cover any form of mechanism whereby the result is made per-

ceptible to the senses, whether this be done by exhibiting said result visibly or audibly or in any other way. "Indicating mechanism," therefore, broadly includes "registering and recording mechanism."

We claim—

1. In a voting-machine, two sliding blocks disposed between fixed abutments, a spring between said blocks, two dogs operating upon the extremities of said blocks to move them toward one another, and indicating mechanisms actuated by said dogs; the said parts being constructed and arranged so that either block may be moved in the direction stated by the dog, without causing motion of the other block, substantially as described.

2. In a voting-machine, a shaft, two sliding sleeves thereon disposed between abutments on said shaft, two dogs operating upon the extremities of said sleeves to move them toward one another, and indicating mechanisms actuated by said dogs; the said parts being constructed and arranged so that either sleeve may be moved on its shaft in the direction stated by its dog, without causing motion of the other sleeve, substantially as described.

3. In a voting-machine, a shaft, 7, two sliding sleeves, 10 and 8*, thereon, feathers, 12, on said shaft, entering recesses in said sleeves, a spiral spring, *p*, interposed between said sleeves, two dogs, as 15, operating upon the extremities of said sleeves to move them toward one another and indicating mechanisms actuated by said dogs, substantially as described.

4. In a voting-machine, of the type herein specified and having a frame, as 1, divided into compartments with an indicating mechanism, and an actuating-dog in each compartment, a shaft, 7, having feathers projecting at intervals along its length, three sleeves associated with each feather, (one of said sleeves receiving the middle portion of the feather in a longitudinal slit and the other two sleeves respectively receiving the ends of said feather in recesses,) and springs on said shaft interposed between the end sleeve of one group, and the end sleeve of the next adjacent group, substantially as described.

5. In a voting-machine, a shaft, three sleeves, 8, 9, 10, thereon, a spring interposed between sleeve 10 and a fixed abutment, a feather, 12, on said shaft received in an opening in said sleeve 9 and having its ends seated in recesses in said sleeves 8 and 10, dogs acting respectively at the joints between sleeves 8 and 9, and 9 and 10 to force said sleeves asunder, and indicating mechanism, actuated by said dogs, substantially as described.

6. In a voting-machine, a frame, as 1, divided into compartments, as *a*, *b*, *c*, *d*, a shaft, 7, extending through said compartments, sleeves, 8, 9, 10, on said shaft, having their junctions respectively in compartments *a* and *b*, sleeves 8*, 9* and 10* on said shaft having their junctions respectively in compartments

4
c and d, springs, as 12*, acting upon the sleeves
8 and 10*, a spring, p, interposed between the
sleeves 10 and 8*, a dog in each of said com-
partments operating upon the junctions be-
5 tween said sleeves to force said sleeves asun-
der, indicating mechanisms actuated by said
dogs and feathers, 12, on said shaft extend-
ing through said sleeves 9 and 9* and having
their ends seated in the sleeves 8 and 10 and
10 8* and 10*, substantially as described.

7. In a voting-machine of the type herein

specified, having a shaft, 7, and a feather, 12,
thereon, a sleeve, 10, having a longitudinal
slot, 3, and a recess in its edge adapted to
receive an end of the feather 12, substan- 15
tially as described.

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Witnesses:

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J. A. VAN WART.