

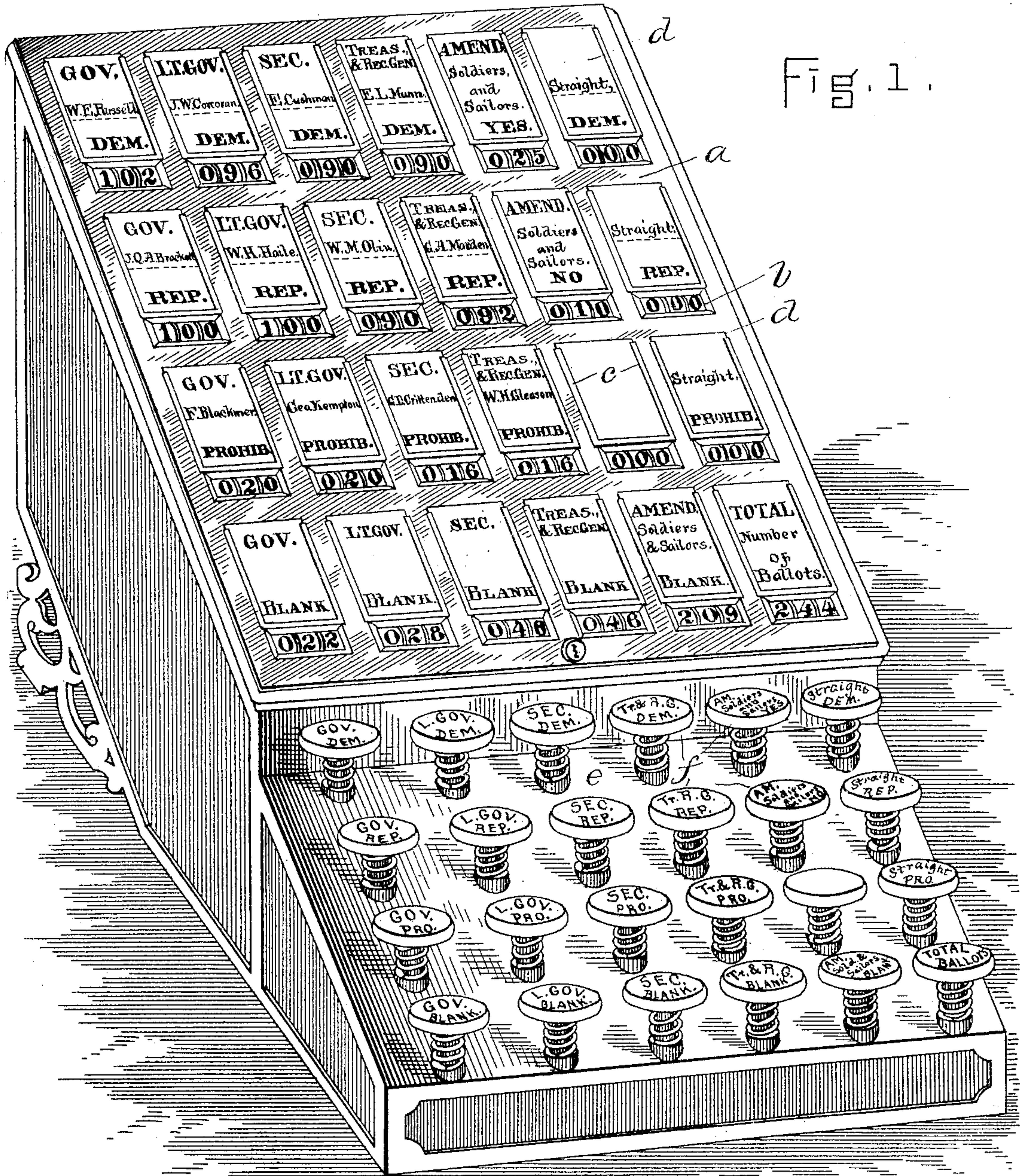
(No Model.)

2 Sheets—Sheet 1.

E. G. RICHARDS.  
VOTE COUNTING APPARATUS.

No. 500,948.

Patented July 4, 1893.



WITNESSES  
A. D. Harrison  
H. A. Hall.

INVENTOR  
E. G. Richards  
by  
Wm. Brown Horsley  
ATTYS.



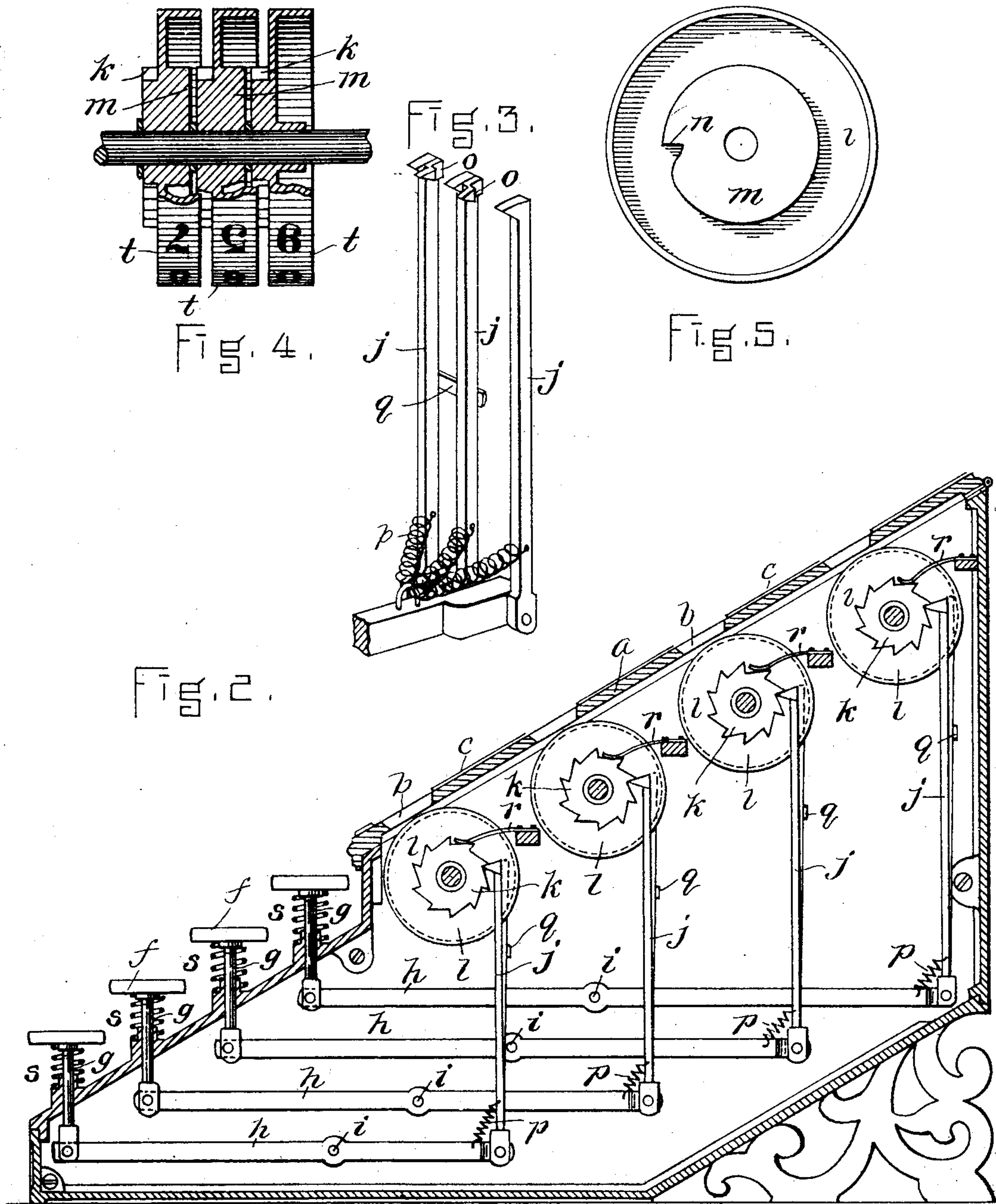
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E. G. Richards,  
by  
Wright, Brown & Hershey,  
Attys.



# UNITED STATES PATENT OFFICE.

EDWIN GILMORE RICHARDS, OF SHARON, MASSACHUSETTS, ASSIGNOR OF  
ONE-HALF TO HENRY L. NARAMORE, OF SAME PLACE.

## VOTE-COUNTING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 500,948, dated July 4, 1893.

Application filed January 25, 1892. Serial No. 419,199. (No model.)

*To all whom it may concern:*

Be it known that I, EDWIN GILMORE RICHARDS, of Sharon, in the county of Norfolk and State of Massachusetts, have invented certain  
5 new and useful Improvements in Vote-Counting Apparatus, of which the following is a specification.

My invention has relation to devices for counting votes on ballots; and it is particularly adapted for the counting of votes on  
10 ballots prepared and cast in accordance with what is commonly known as the "Australian" system.

It is a fact that the present mode of counting votes under the Australian ballot system is attended with such a great amount of labor, expense and delay, and results in so many errors, besides giving an opportunity for fraud to such an extent as to have led authorities  
15 seriously to consider the abolition of the use of the said system and a return to the "old methods."

It is the object of my invention to provide an apparatus for the counting of ballots and  
25 votes which will enable the same to be done expeditiously and accurately, permit inspectors readily to see all that is being done, and to provide safe-guards against fraud.

My invention consists of a vote counting  
30 apparatus comprising in its construction a bank or board provided with devices in rows or columns indicating the offices to be filled by ballot, devices also in rows or columns indicating the names of the persons on the official ballot, apertures in the bank or board in  
35 juxtaposition to the said indicating devices, a plurality of rotary disks having on their peripheries numbers running from 0 to 9 arranged below the said bank or board and opposite the said apertures, and means for operating the said disks so as that they may indicate an additional unit to the number displayed through a particular aperture when the name of the candidate on the indicating  
45 device in proximity to the said aperture may be called as having received a vote, said operating means consisting of a plurality of keys projecting from the upper surface of a second bank, the said keys being designated to correspond in arrangement with the indicating  
50 devices, and connection between the latter

and the said keys. The said indicating device and the keys being located in a substantially uniform plane whereby inspection and supervision are facilitated.

Reference is to be had to the annexed drawings, and to the letters of reference marked thereon, forming a part of this specification, the same letters designating the same parts or features, as the case may be, wherever they  
55 occur.

Of the drawings: Figure 1, designates a perspective view of my vote counting apparatus. Fig. 2, is a horizontal sectional view of the same. Fig. 3, is a perspective view of  
60 the levers employed for actuating the counting wheels or disks. Fig. 4, is a partial sectional view of the counting disks. Fig. 5, is a side elevation of one of the said disks.

In carrying out my invention, I provide a  
65 bank or board *a*, which may be inclined as shown, or be flat, as may be desired.

*b* designates apertures formed in said bank *a* in the columns and lines, as shown. In proximity to said apertures I provide the surface of the bank with means, as for example, guide ways *c* for the reception of cards *d*, or other device bearing the names of the offices to be filled by ballot, the names of the candidates on the official ballot, and the party nominating said candidate. In the present example, I have shown the several offices, as for instance that of governor, lieutenant governor, secretary and treasurer, arranged in columns, while the names of the candidate and of the party nominating said candidate are arranged in lines running at right angles to the columns indicating the different offices to be filled by ballot. I have also shown additional columns which may be employed for special  
75 purposes, as for example, on the occasion of a vote upon a constitutional amendment, or to indicate a "straight" vote for candidates of a particular party, and also to indicate the total vote or number of ballots cast.

*e* designates a key bank or board arranged below or in front of the bank *a*, upon which are arranged keys *f* placed in order and marked in a manner corresponding to the indicating devices in proximity to the apertures  
80 *b*. Each of the said keys *f* is provided with a stem *g* extending through the bank or board



*e* and pivotally connected to the outer ends of levers *h*, fulcrumed at *i*, pawls *j* being pivotally connected at their lower ends with the inner ends of said levers *h*, and arranged at their upper ends to engage a tooth of the ratchet wheel *k* secured to or forming an integral part of the counting disk *l*, which is inscribed or marked upon its periphery by a series of numbers running from 0 to 9.

As so far described, it will be seen that if a key *f* should be depressed, it will have the effect of operating the pawl *j* through the medium of the lever *h* so as to actuate the counting wheel *l* to the extent of one tooth of the ratchet wheel *k*, and as the number of teeth upon the said ratchet wheel corresponds with the numbers upon the periphery of the indicating disk *l*, it will follow that the said disk *l* will be turned a sufficient distance to bring a new number into position to be seen through the aperture *b* of the bank *a*, the said disks being arranged immediately opposite or below the said apertures. Each disk *l* is provided on its opposite side from that viewed in Fig. 2 with a cam disk *m* which is provided with a tooth *n* as seen in Fig. 5. Upon the upper free end of each pawl *j* is a lug or projection *o* which is adapted to rest upon the face of cam *m* of the adjacent wheel so as to hold the said pawl out from engaging a tooth on its ratchet wheel *k* until the adjacent counting disk *l* shall have made a complete revolution less one-tenth and the cam portion *m* thereon is turned to an extent sufficient to allow the lug *o* to drop into the notch *n*, and permit the pawl also to be carried inward at its upper end as it may be by the action of the spring *p* to engage a tooth of its ratchet wheel, and upon the next operation of the key to complete the rotation, it will move the said disk to the extent of one tooth. It will thus be seen that if the first mentioned disk should have upon its periphery numbers indicating units, and the second disk, numbers indicating tens, that the first disk will be operated nine times before the second disk will be at all actuated, and upon actuating the first disk the tenth time, the pawl for operating the ratchet wheel of the second disk will move the same to the extent of one tooth simultaneously with the moving of the first disk, when the second disk will remain inactive until the first disk shall have again made a complete revolution and is in position to be actuated for a tenth time, when both disks will be moved together. In this manner the second disk may be made to control the operation of a third disk which may indicate hundreds. In the latter instance, however, with the construction and arrangement of all of the disks the same size and form, the disk indicating hundreds, if no proper provision would be made, would be engaged by its pawl when the units and tens disks should be operated to an extent indicating ninety, for the following reason:—When nine is indicated, the tens disk pawl is permitted, by the construction

described, to take position for operating said disk on the tenth depression of a key, and the same is repeated each time the units disk indicates a nine. When ninety is indicated, the tens disk remains stationary during nine more operations of the units disk, but its notch is and must be in such position that the pawl of the hundreds disk would be in position to operate said hundreds disk when the next key depression is made, if it were not prevented from so doing. Of course, also, when ninety has been indicated the cam *m* of the units disks disengages the tens disk pawl from its disk, but there would be nothing to disengage the hundreds disk pawl from its disk and since the latter pawl is connected to the same key lever as the units pawl, the next stroke of the key would indicate one hundred and one instead of ninety-one. Therefore, in order to hold the actuating pawl of the disk indicating hundreds out of engagement with its ratchet wheel until the units and tens disks shall have reached a point where it is desired to move the disks so as to indicate one hundred, I have provided the guard *q* which is connected with the pawl employed to actuate the hundreds disk and extends behind and rests upon the pawl designed to actuate the tens disk. By this means it will be obvious that the pawl designed to actuate the hundreds disk will be held out of engagement with its ratchet-wheel at the time the units disk is being operated from 91 to 99, but be allowed to drop in and engage the ratchet wheel of its disk when the pawl for operating the tens disk is actuated the tenth time. In this way the indicating disks may be operated in a manner which will be understood without further description, so as to bring the numbers opposite the apertures *b* running from 1 to 999, and by adding additional disks, a greater number may be indicated through the apertures of the bank *a*.

*r* designates a holding pawl or spring adapted to rest upon the teeth of the ratchet wheels *k* to prevent the backward movement of the said ratchet wheels, and also to hold them in the precise position desired in order to exhibit the numbers on the disks through the apertures of the bank *a*.

*s* designates springs surrounding the stems *g* and the keys *f* in order to raise the said keys after depression. These springs it will be obvious may be arranged below the bank or board *a* around the stems, or be connected with the levers *h*, in order to insure the return of the keys to normal position, and various other changes and arrangements may be made to actuate the indicating disks *l* as before described.

In the use of my invention, a ballot may be taken, and as the names voted may be called, the operator will depress the key corresponding to said name and office, and so bring to view the number indicating the vote cast for such candidate, and at the same time the key, say for example, *t* may be depressed



indicating the total number of ballots. If any candidate for a particular office has not been voted for, a blank may be registered by depressing a key properly labeled and actuating the indicating disks opposite apertures in the bank *a*, and so record such fact. In case all of the candidates of a particular party are voted for upon a particular ballot, but a single key may be depressed recording such fact, as for example, a key indicating "Straight Democratic," "Straight Republican," or "Straight Prohibition."

One of the principal features of my invention is the bank *a* having devices arranged in lines indicating the names of the candidates for all of the offices of each party and in lines running at right angles to the first mentioned lines indicating each office with the names of all of the candidates on the official ballot, together with the counting means arranged in juxtaposition to such indicating devices.

By my invention the votes can be counted as fast as announced, and the record is always in full view of the inspectors, and the tally keeper has no opportunity to make a miscount. As the total number of ballots is being registered and displayed as the counting progresses, should a mistake occur in the count it can be detected and corrected before the count is finished, instead of counting all the ballots the second time as heretofore.

The sum of the vote for each office will at all times agree, if a mistake is not made, with the number recorded at the aperture marked "total."

By the construction of the machine, as shown, with the bank of keys in one plane

and accessible to the voter and the bank of indicating devices in substantially the same plane as the keys, and in juxtaposition thereto, although removed therefrom so as to be free from obstruction by the hand of the voter, a machine is provided whereby acts of the voter and the results thereof may be readily inspected and supervised at the moment of voting no matter how many of the keys may be depressed at once.

Having described the nature of my invention and explained a way of constructing and employing the same, though without attempting to set forth all of the forms in which it may be made or all of its modes of use, I declare that what I claim is—

A vote counting apparatus comprising in its construction a casing having its upper surface inclined to form two banks, one higher than the other, the upper bank being provided on its upper side with devices arranged in a plurality of rows indicating the several offices to be filled by ballot and the second or lower bank having a plurality of keys corresponding in number and arrangement and the names of the offices with the indicating devices and connected therewith, both of said banks being visible over their entire surfaces from one point of view, substantially as described.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 19th day of January, A. D. 1892.

EDWIN GILMORE RICHARDS.

Witnesses:

ARTHUR W. CROSSLEY,  
A. D. HARRISON.