

No. 860,600.

PATENTED JULY 16, 1907.

A. J. GILLESPIE.  
INTERLOCKING MECHANISM.

APPLICATION FILED AUG. 28, 1905.

3 SHEETS—SHEET 1.

Fig. 2.

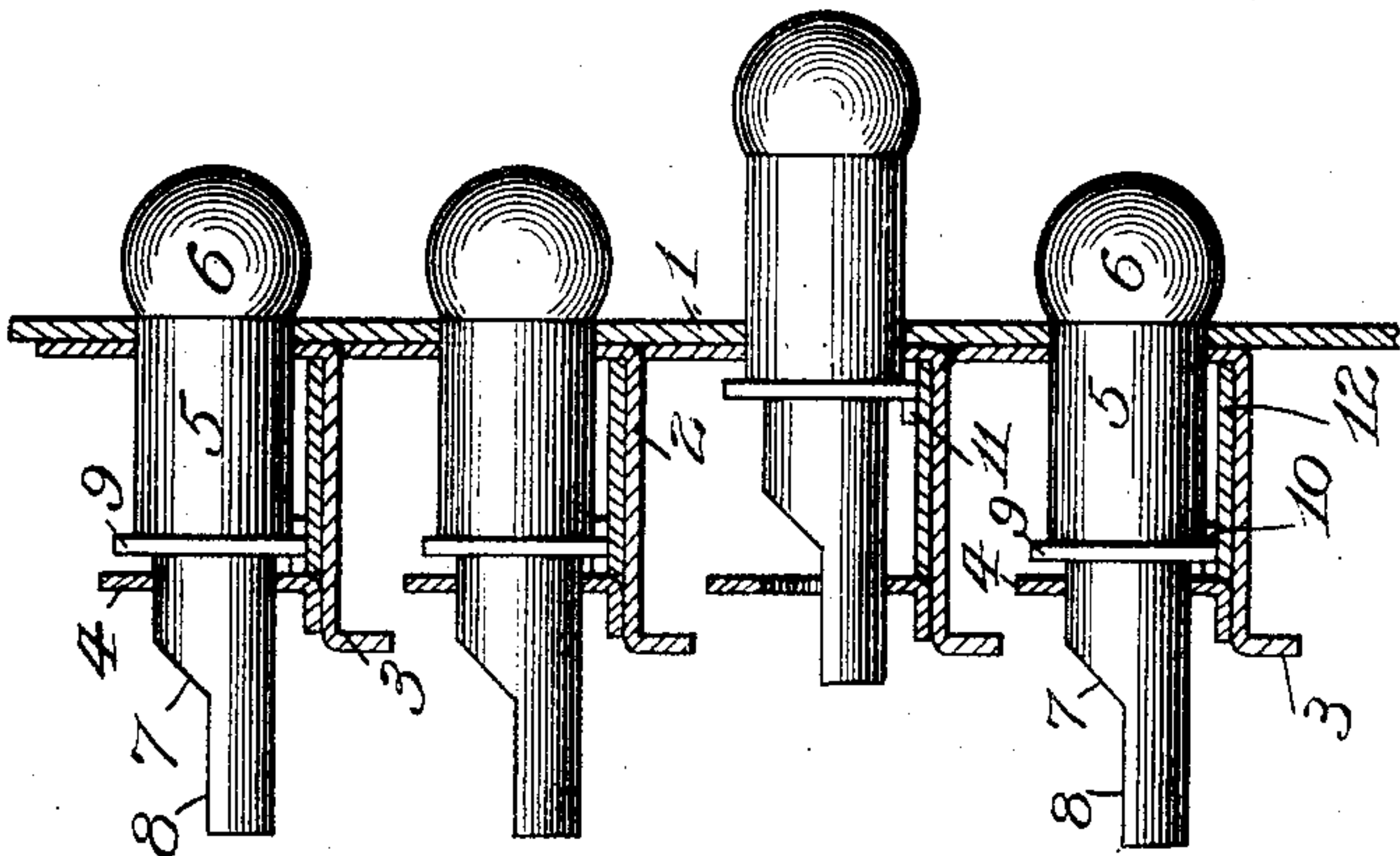


Fig. 1.

Fig. 1.									
REPUBLICAN	DEMOCRATIC	PROHIBITION	SOCIALIST	POPULIST					
Mayor	J. Burt	C. Deppa	T. Roosevelt	M. Sutton	1				
Judge	E. Steele	T.C. Platt	B.B. Chapin	C. Douglas					
Coroner	C. Miller	D. Platt	H. Robbins	M. Clother					
Coroner	D. Webster	Bert Lytell	F. Ward	Max Wiley					
Constable	F. Burkhead	M. Seymour	H. Ward	W. Demiral					
Constable	I. Hoyt	I. Barnette	D. Whitman	Doc Earle					
Constable	W. Payne	C. Carrer	S. Wright	F. Cooksey					
Constable	J. Lobbitt	F. Base	R. Leroy	L. Newberry					
Constable	G. Humphrey	C. Krumm	P. Dewhurst	K. Sherman					
Constable	F. Palmer								
Constable	R. Griffith								
Constable	F. Freeze								
Constable	A.W. Toose								
Constable	G.W. Rich								
Constable	F. Frank								
Constable	E.C. Squier								
Constable	E. Aldrich								
Constable	C. Babson								

Witnesses

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3 SHEETS—SHEET 2.

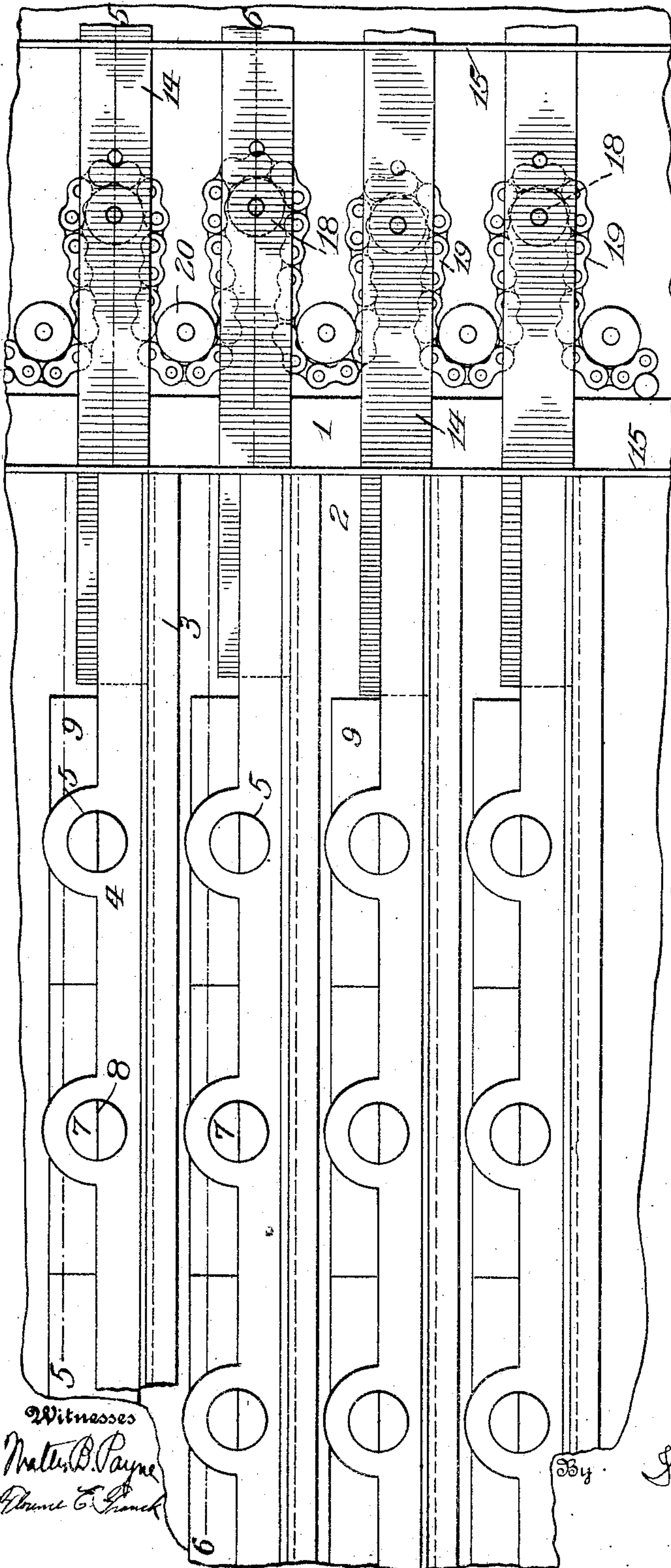


Fig. 3.

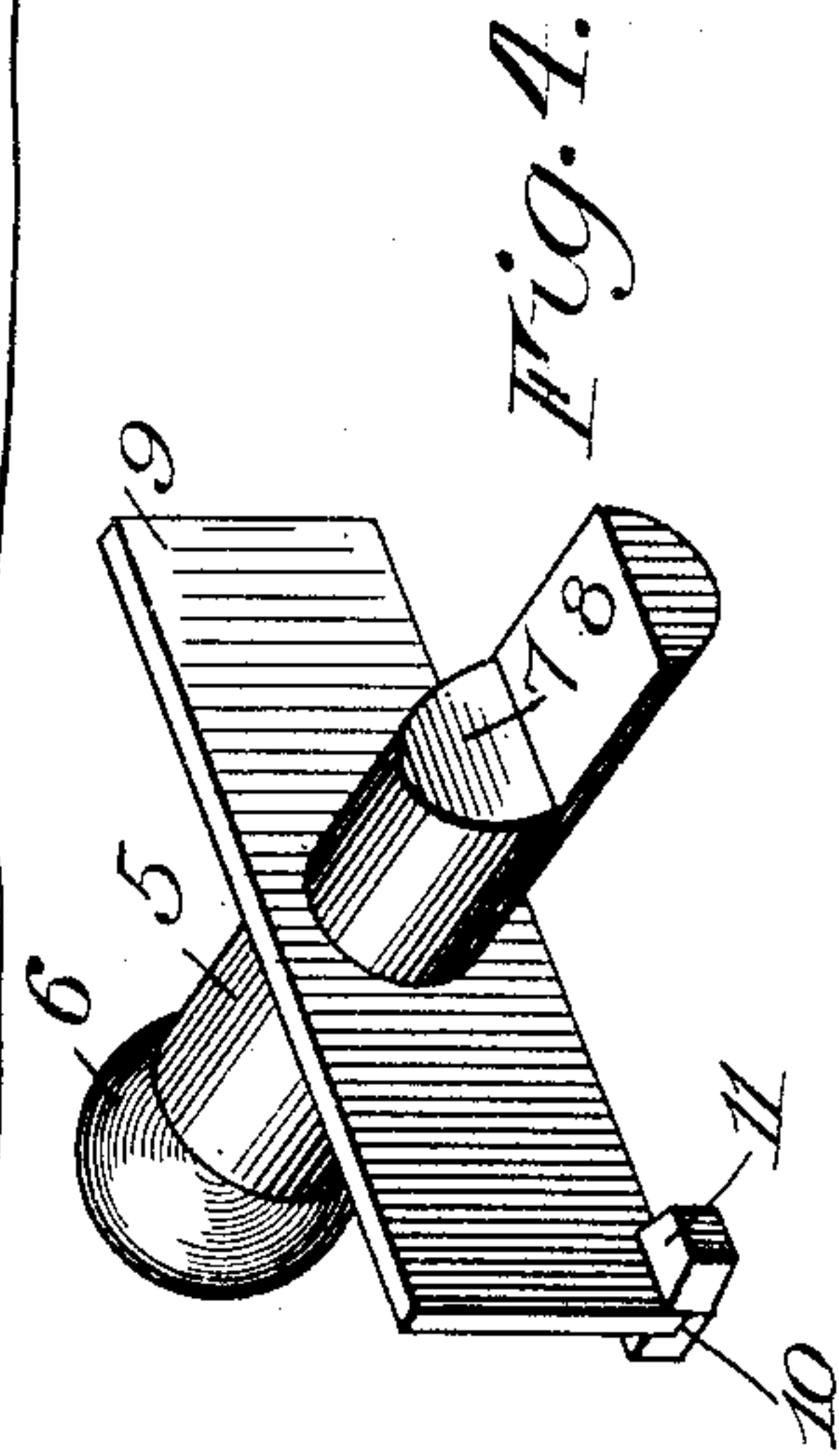


Fig. 4.

Witnesses  
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3 SHEETS—SHEET 3.

Fig. 5.

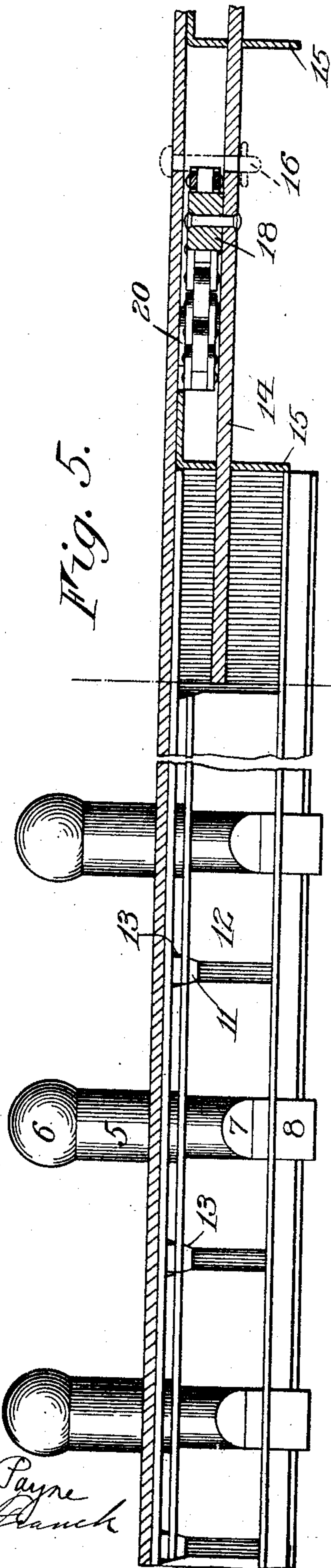
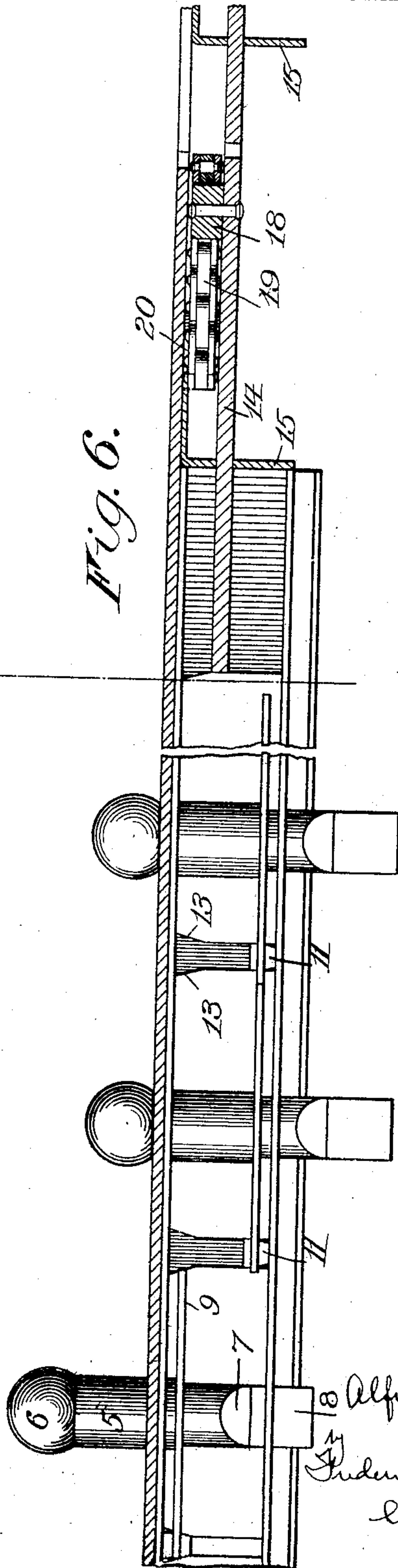


Fig. 6.



Witnesses  
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# UNITED STATES PATENT OFFICE.

ALFRED J. GILLESPIE, OF ROCHESTER, NEW YORK, ASSIGNOR TO THE U. S. STANDARD VOTING MACHINE COMPANY, OF ROCHESTER, NEW YORK, A CORPORATION OF NEW YORK.

## INTERLOCKING MECHANISM.

No. 860,600.

Specification of Letters Patent.

Patented July 16, 1907.

Original application filed May 7, 1900, Serial No. 15,772. Divided and this application filed August 28, 1905. Serial No. 276,000.

To all whom it may concern:

Be it known that I, ALFRED J. GILLESPIE, of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Interlocking Mechanisms; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the reference-numerals marked thereon.

My present invention relates to improvements in interlocking mechanism for controlling or preventing the operation of a plurality of devices, whereby the devices may be arranged in sets and one or more devices may be operated in each set, or they may be arranged in groups or combinations and only a given number may be actuated at one time.

The invention is particularly adapted for use in connection with voting machines of the general type disclosed in my prior application filed May 7, 1900, and serially numbered 15,772, of which the present is a divisional application, and it consists in certain improvements and combinations of parts, all as will be hereinafter more fully described and the novel features pointed out particularly in the claims hereunto annexed.

In the drawing: Figure 1 is a front elevation of a section of a voting machine, showing the ballot-indicators or other devices with which the interlocking mechanism embodying my invention coöperates. Fig. 2 represents a section from front to rear along one of the vertical rows of indicators, three of the indicators being in actuated, and one in normal position. Fig. 3 is an elevation showing a section of the rear of the ballot board. Fig. 4 is a perspective view of a ballot-indicator, and its spreader; and Figs. 5 and 6 are sectional views on the lines 5-5 and 6-6 respectively of Fig. 3.

Similar parts are designated by the same numerals in the several views.

Interlocking mechanism constructed in accordance with my invention is capable of use generally in connection with key boards and various other devices employing a plurality of independently operable parts or devices and in the operation of which it is necessary or desirable to so control the devices that only a given number may be in operated position at a time, or that the devices may be divided into sets and operated in groups or combinations.

The present embodiment of the invention is adapted for operation in connection with a voting machine of the type shown and described in my aforesaid application, wherein 1 indicates the front plate or ballot board of the machine upon the face of which are affixed in a suitable manner cards or tickets containing

the names of the candidates, said board or plate preferably forming part of the casing for containing the operating parts of the machine. On the rear of this plate or support are arranged angle-irons or plates 2, one for each horizontal row of ballot-keys or indicating devices, said plates 2 having at their rear downwardly-extending lips or flanges 3 and above these flanges are provided the perforated guide-plates 4, through apertures in which and also corresponding apertures in the upwardly-extending flanges of plates 2 and the plate 1 the keys or ballot-indicators are passed and arranged to reciprocate. In the present arrangement, these keys or indicators consist of short cylindrical rods or pins 5 having the knobs 6 at their outer ends and in rear and near their extreme ends inclined beveled portions 7 and beneath these, horizontal extensions 8. Secured to the indicators 5 between the plates 2 and 4 are flanges or plates 9 having their lower edges received within slots 10 formed in the upper sides of wedge-shaped spreaders or blocks 11, shown particularly in Figs. 4 and 7, the connection being such that the spreaders 11 move back and forth with the keys or indicators when moved longitudinally in their guides and are permitted to slide laterally upon the flanges 9. The spreaders 11 rest upon the lower horizontal portion of the channels 2 and are located between the forward inclined faces of laterally-sliding blocks or plates 12 arranged in the channels 2, having their forward corners beveled at 13; said wedges or blocks 12 being freely movable in the channel plates, and the end block of the horizontal row being adapted to abut against, or, if desired, to be connected to a movable block or part 14 operating in suitable guides or flanges 15 on the rear of the plate 1.

As usual in machines of this general type, the indicators devoted to the candidates for the same office are arranged in the same horizontal rows and those devoted to candidates for the same political party are in the same vertical columns. The wedges or spreaders 11 and the wedge-blocks constitute the interlocking devices between ballot-indicators in the same row, and if a vote is to be permitted for only one candidate in the row, said blocks 12 are permitted to move longitudinally only the width of one of the spreaders, in the present embodiment this being permitted by securing the end block or plate 14 to the casing by means of a movable stud or pin 16 inserted in apertures in the plates 1 and in the block or stop 14, so that when one indicator is pushed in the end block 12 of the row will abut against the block 14 and no other spreader 11 can be moved inward.

As it is desirable to adapt the machine for multi-candidate or group-voting, so as to permit a certain predetermined number of votes to be indicated for



candidates for the same office in the same or different horizontal rows, I provide the end plates or blocks 14 with projections preferably in the form of rollers 18 around which extends a flexible connector in the form of a chain 19, said chain also extending around stationary pins, guides or rollers 20 secured to the main frame. When the rows of indicators are connected in this manner, the securing pins 16 in each row grouped are removed from the blocks 14 so that the latter can slide freely in their guides, and, therefore, while one indicator in each horizontal row thus grouped can be moved into voted position without affecting the interlocking devices in the other rows of indicators, the movement of a number of indicators or keys in any row or rows equal to the number of rows grouped and no more can be moved to voted position. For instance, if one of the indicators in the upper row of Fig. 2 is moved, the wedge-block 12 will be moved up against its block or plate 14, and if another indicator in the same row is moved to voted position, all of the wedge-blocks 12 at the left (Fig. 4) will move a distance equal to the width of the wedge or spreader 11, causing the block 14 to move outward another step and take up some of the slack in the flexible chain or connector 19 sufficiently to move all of the remaining blocks 14 inward a short distance. If another indicator in the same row is operated, the block 14 will be moved further one unit of space, operating the chain and the blocks 14 in the other rows, until finally, when the proper number of indicators, say four, have been operated in the upper row, all of the blocks 14 in the remaining rows will be moved up against the blocks 12 and prevent the inward movement of the spreaders in any of said remaining rows. Similarly, if one indicator in each row is operated, the blocks 12 will be moved out against blocks 14 and no more indicators can be operated in any row. The slotted or loose connection between the indicators and the spreaders 11 permits the lateral movement of the latter with the wedge-blocks 12 so that the proper number in any horizontal row or office line may be operated without interference. From the above, it will be seen that any or all of the horizontal rows may be grouped, if desired.

Thus it will be apparent that the invention when applied to a voting machine enables the machine to be readily adapted for either single-candidate or multi-candidate or group voting, and the interlocking mechanism is composed of but few parts which are so simple in construction and arrangement that their locking operation is positive and not liable to stick or jam.

As heretofore stated, the interlocking mechanism forming the subject matter of the present application is not limited in its application, for although it is particularly adapted to the requirements of voting machines, it could be employed in connection with various other devices wherein the parts to be controlled would be operatively connected with, or other parts substituted for the ballot-indicators or keys shown, and the term "ballot-indicators" as employed in this specification and claims is intended to cover an equivalent or corresponding element.

I claim as my invention:

1. In interlocking mechanism, the combination with a support, a plurality of rows of movable indicators thereon,

spreaders carried by the indicators when operated to actuated position and permitted a movement independent thereof, of wedge-blocks operated by the spreaders, and a flexible connection between the end blocks in the rows for permitting the operation of a limited number in all of the rows.

2. In interlocking mechanism, the combination with a support, a plurality of rows of indicators thereon movable into and out of actuated position, spreaders carried by the indicators when operated to actuated position and permitted a movement independent thereof, of wedge-blocks operated by the spreaders, a flexible connection with which the end wedge-blocks of each row cooperate, and means for adjusting the connection to regulate the number of indicators operable in all of the rows.

3. In interlocking mechanism, the combination with a support, a plurality of rows of indicators movable into and out of actuated position, spreaders carried by the indicators when operated to actuated position and permitted a movement independent thereof, of wedge-blocks operated by the spreaders, blocks at the end of the rows of wedge-blocks having projections thereon, stationary projections on the support, and a flexible connector extending around the projections on the support and blocks adapted to limit the number capable of operation in all of the rows.

4. In interlocking mechanism, the combination with a plurality of rows of indicators, movable wedge-blocks operated by the movement of one or more indicators, of end blocks for each row operated progressively by the wedge blocks therein, and a flexible connector cooperating with the end blocks and with stationary projections, and means for adjusting the connector to limit the number of blocks operable in all the rows.

5. In interlocking mechanism, the combination with a plurality of rows of indicators, movable wedge blocks operated by the movement of one or more indicators, of end blocks for each row operated progressively by the wedge-blocks therein and having projections thereon, means for securing the end blocks, projections between the rows, and a flexible connector extending around the stationary projection and those on the end blocks, and means for securing the connector and thereby limiting the number of rows of indicators that interlocked.

6. In interlocking mechanism, a plurality of series of indicators, interlocking devices for each series, in combination with a movable part for each series of interlocking devices and cooperating therewith, a flexible chain controlling said movable parts, and means for fixing the said chain or cable between each of the movable parts, whereby the number of indicators capable of actuation collectively in a given number of series may be limited.

7. In interlocking mechanism, the combination with a plurality of series or rows of indicators, independent interlocking devices between the indicators of each series, a series of stops, one for each series of indicators, and adapted to cooperate with the interlocking devices thereof, of a flexible connector between the stops for transmitting motion from one to the others and independently of the series interlocking devices.

8. In interlocking mechanism, the combination with a plurality of series or rows of indicators, independent interlocking devices between the indicators of each series, a series of stops one for each series of indicators and adapted to cooperate with the interlocking devices thereof, of a flexible connector between the stops for transmitting motion from one to the others and independently of the series interlocking devices, and means for securing the flexible connector between the series of indicators.

9. In interlocking mechanism, the combination with a plurality of series or rows of indicators and interlocking devices between the indicators in the same series or row permitting the free operation of one indicator therein, of a movable looped flexible connector with which the interlocking devices of the row or series separately cooperate after the operation of one indicator in a series, and thereby limit the number of individual indicators movable in all the series or rows.

10. In interlocking mechanism, the combination with a plurality of series of indicators and interlocking devices between the indicators in each series, of a movable stop for



each series with which said interlocking devices cooperate, a flexible connector, guides for the connector arranged between the movable stops, and means for securing the flexible connector between the movable stops, thereby forming the series into groups.

11. In interlocking mechanism, the combination with a plurality of series of indicators and interlocking devices between the indicators in each series embodying movable blocks, and stops at the ends of each series, each having a projection thereon, of guides or pins arranged between the series of stops, a flexible connector, such as a chain, extending alternately around the guides and projections on the stops, and means for securing the connector between the stops.

12. The combination of a plurality of series of indicators, of independent interlocking devices for each series, the endwise moving stops 14 having the rollers thereon, the intermediate rollers 20 mounted on the frame, the flexible chain mounted on said rollers, and the removable pins 16 adapted to cooperate with the chain between the stops.

13. In interlocking mechanism, the combination with a plurality of series of indicators, the indicators of each series being arranged in the same plane, interlocking devices between the indicators, and a movable stop for each series adapted to be actuated by the movement of the interlocking devices, of a flexible connector cooperating with the stops and adapted to move and to be moved by the latter and limit the number of indicators operated in all the series, and detachable fastening devices for securing the connector between the stops.

14. The combination of a plurality of indicating devices arranged in rows, interlocking devices adapted to limit the number of indicating devices operable in each row to any number less than the whole, and a flexible strip to serve as a stop for a plurality of rows of interlocking devices.

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Witnesses:

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