

No. 848,477.

PATENTED MAR. 26, 1907.

J. N. MICHEL.  
REGISTERING TARGET.  
APPLICATION FILED JULY 19, 1906.

2 SHEETS—SHEET 1.

Fig. 1<sup>A</sup>

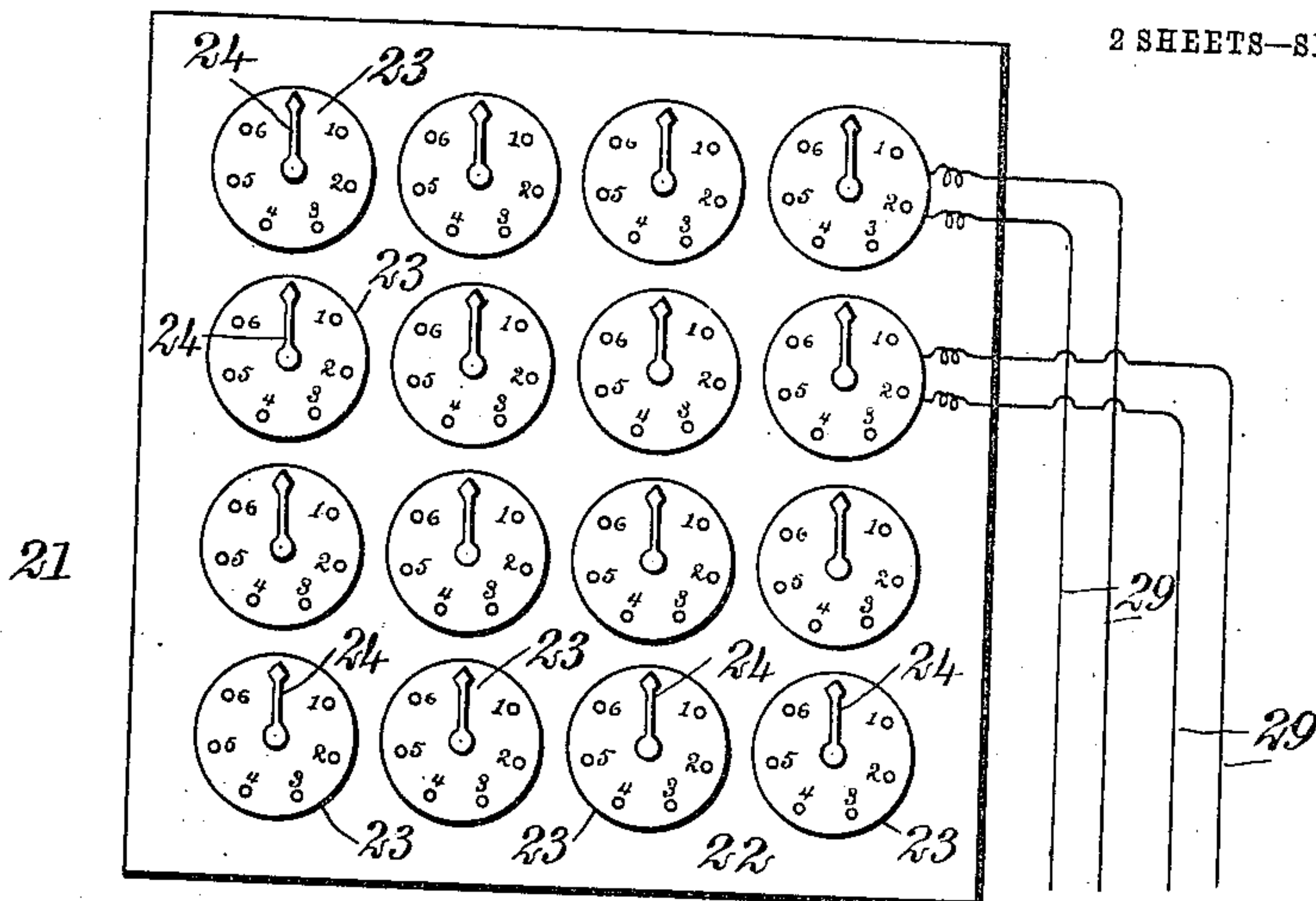
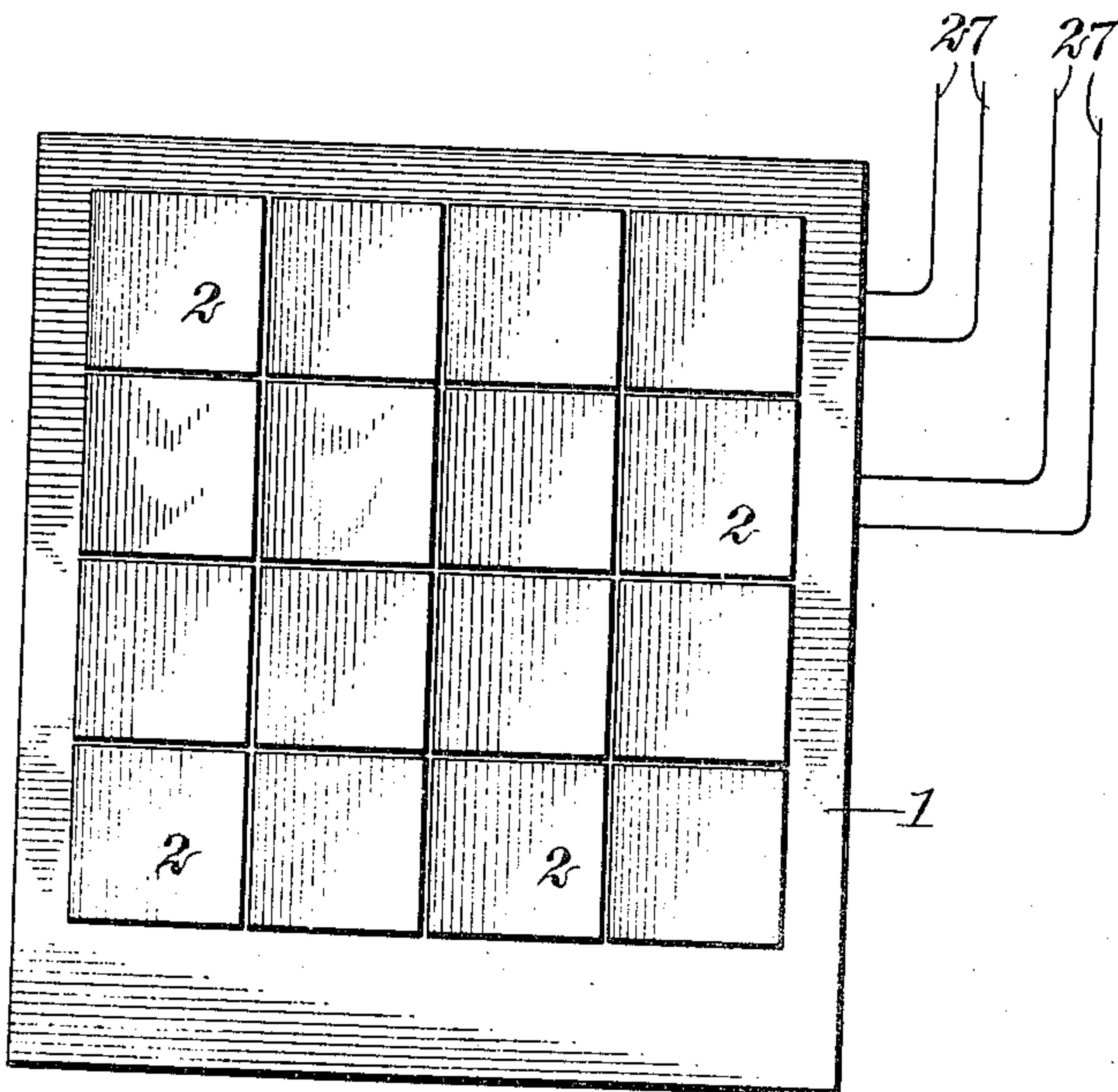


Fig. 1



WITNESSES

J. V. Propoy  
J. A. Pannier

INVENTOR

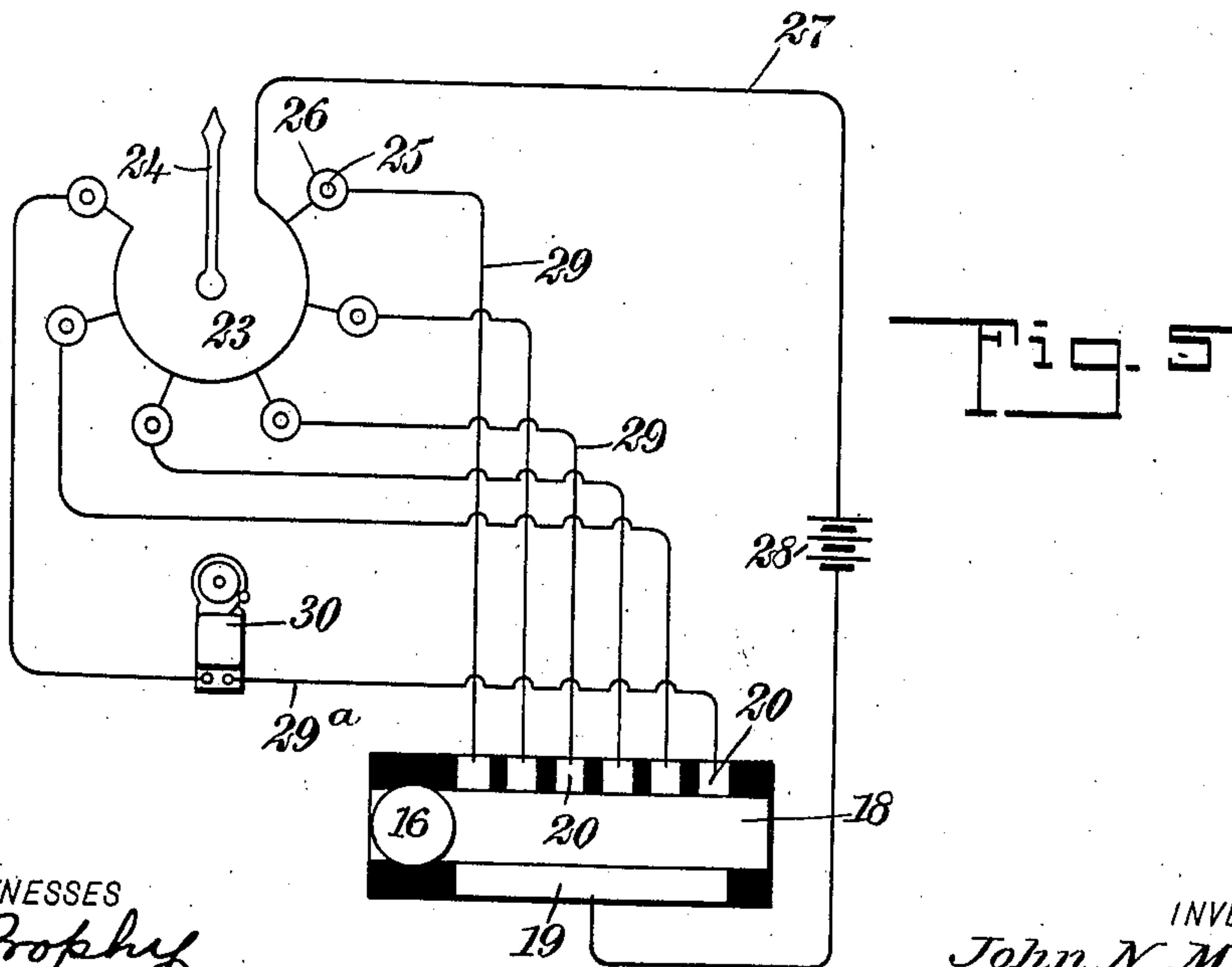
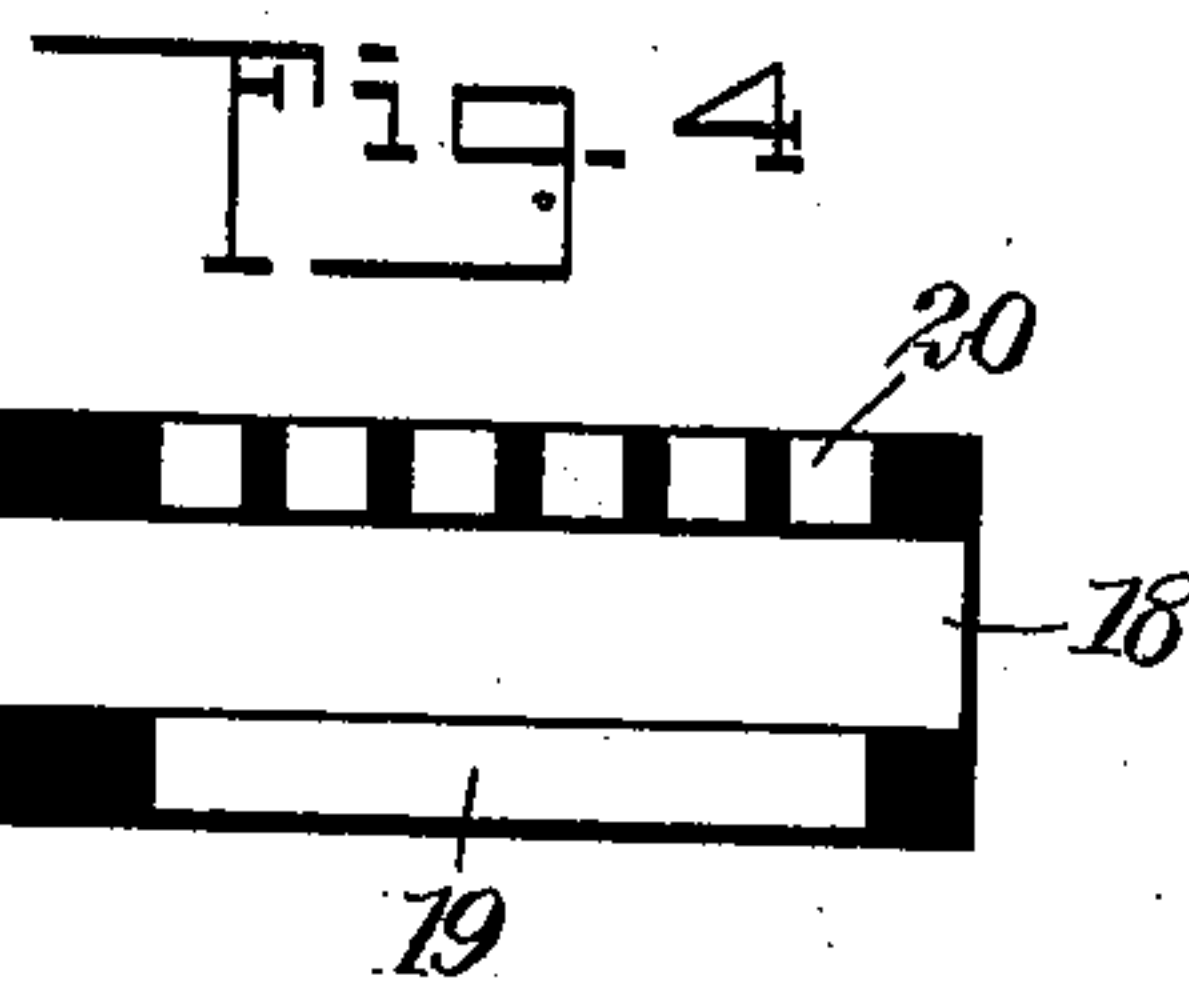
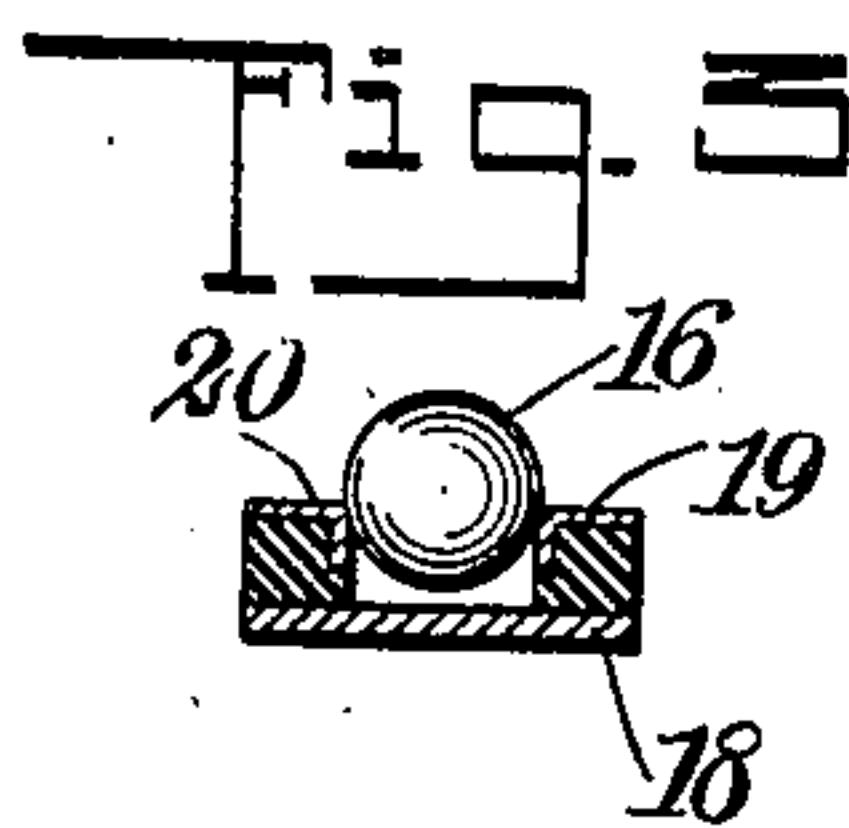
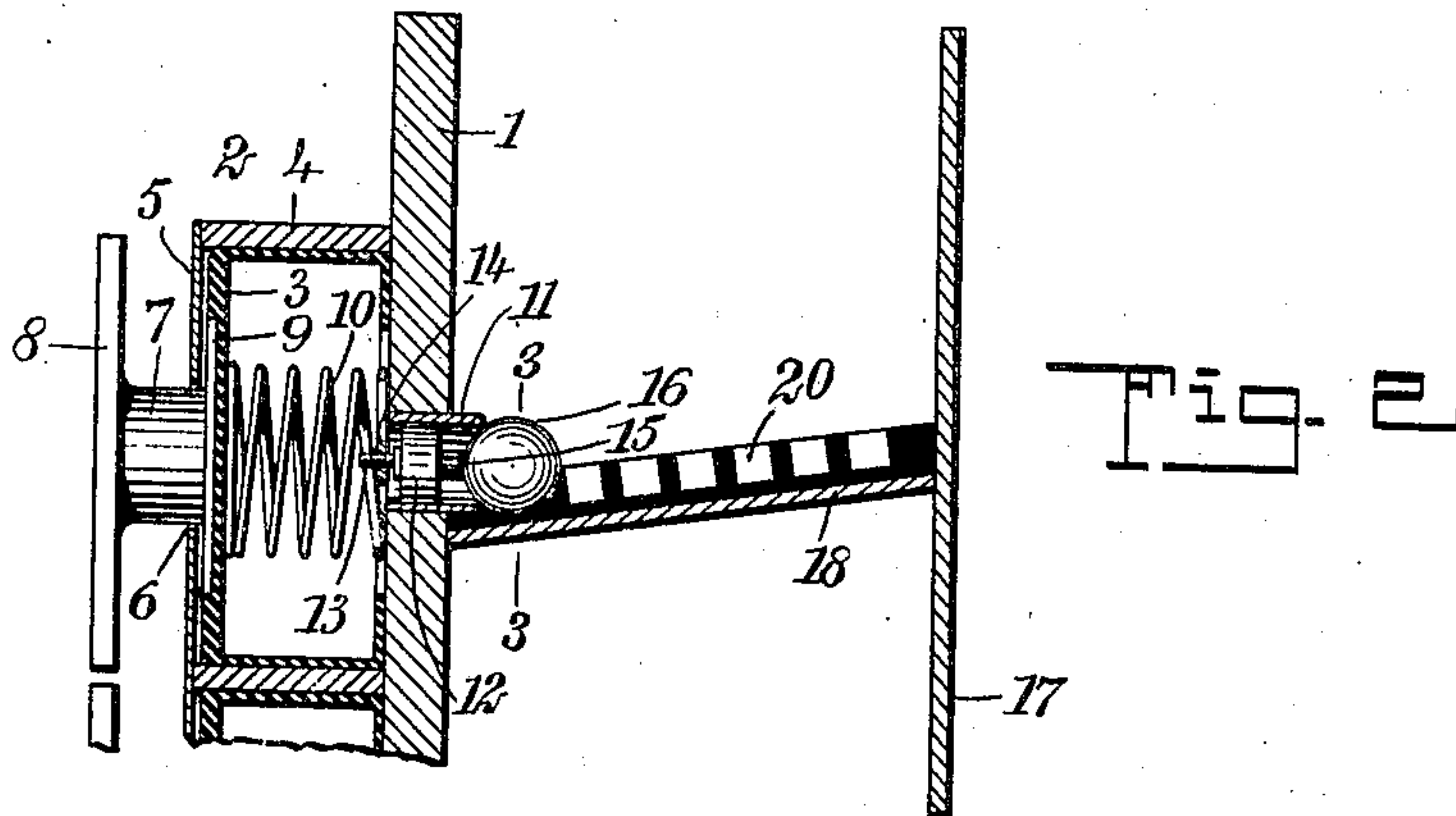
John N. Michel  
BY *Mumme*  
ATTORNEYS

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2 SHEETS—SHEET 2.



WITNESSES  
*J. A. Brophy*  
*F. A. Lamm*

INVENTOR  
*John N. Michel*  
BY *Mumma*  
ATTORNEYS



# UNITED STATES PATENT OFFICE.

JOHN NICHOLAS MICHEL, OF NEW YORK, N. Y.

## REGISTERING-TARGET.

No. 848,477.

Specification of Letters Patent.

Patented March 26, 1907.

Application filed July 19, 1906. Serial No. 326,850.

*To all whom it may concern:*

Be it known that I, JOHN NICHOLAS MICHEL, a citizen of the United States, and a resident of the city of New York, borough of Manhattan, in the county and State of New York, have invented a new and Improved Registering-Target, of which the following is a full, clear, and exact description.

This invention relates to targets.

The object of the invention is to provide means to be used in connection with a target which will indicate the point at which said target is struck by a projectile and which will also indicate the force of the blow delivered by the projectile.

The invention consists in the construction and combination of parts to be more fully described hereinafter and particularly set forth in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a front elevation of the objective target at which the projectile is thrown. Fig. 1<sup>a</sup> is a front elevation of the registering-target. Fig. 2 is a vertical cross-section through a portion of the objective target and illustrating the details of construction thereof. Fig. 3 is a cross-section through a portion of a contact-closing device which is operated by a projectile when it strikes. This view is a section on the line 3 3 of Fig. 2. Fig. 4 is a plan further illustrating diagrammatically the construction of the contact-closing device, and Fig. 5 is a diagrammatic view showing the manner of wiring the target.

Referring more particularly to the parts, 1 represents the body of the objective target, which consists, substantially, of a board upon the forward face of which are arranged a plurality of cushions 2, said cushions being preferably arranged in rows and close together, as shown. The construction of one of these cushions and the manner of mounting the same upon the board 1 is very clearly shown in Fig. 2. Each cushion comprises a collapsible body 3, of rubber or similar material. These are of substantially rectangular form and mounted upon the face of the board 1 between transverse cleats or strips 4, as shown. The bags or collapsible bodies 3 are inclosed in the space between these strips by means of a face-plate 5, which covers the entire face of the board and is provided with

openings 6, which receive the necks 7 of buffer-plates 8. These buffer-plates are of substantially rectangular form, as shown in Fig. 1, and substantially cover the entire face of the target. The inner portion of each of the necks 7 is expanded to form a plate or head 9, which rests against the outer wall of the pad or bag, as shown. It should be understood that these collapsible bags constitute pneumatic cushions, which are normally held in an inflated condition by means of a coiled spring 10, which seats against the forward wall of the bag and against the forward side of the board 1. Through the board 1 at each cushion an opening is provided in which is mounted a thimble 11, and in this thimble there is guided longitudinally a movable plunger 12. The forward face of this plunger rests against an adjustable stop 13, which is threaded and mounted in a cross-bar 14, projecting diametrically across the thimble, as shown in Fig. 2. On its outer side the plunger 12 is provided with a projecting tip 15.

Against the outer face of the thimble 11 a ball 16 rests, the thimble constituting a seat therefor, as shown. The stop 13 is adjusted so that the tip 15 lies against the face of the ball when the cushion is in its inflated condition, such as that shown in Fig. 2.

Behind the board 1 a back board 17 is arranged, which supports a plurality of contact-channels 18, the forward extremities whereof are supported on the rear face of the board 1. These channels incline upwardly toward the rear. They are formed of insulating material, and each channel is provided on one side with a continuous contact-strip 19. On the opposite side each channel is provided with a plurality of separated contact-plates 20, which are insulated from each other, as indicated. It should be understood that the ball 16 is of metal or similar conducting material and that if it should roll along the channel 18 it will operate to close the circuit successively with the contact-plates 20.

At a convenient point to be observed by persons using the device I provide a registering-target 21. This target comprises a face-plate 22, having substantially the same form and dimensions as the objective target, and it is provided with a plurality of dials 23, which are arranged in rows so as to correspond with the cushions 2. Each of these dials is provided with a pointer 24, which constitutes an armature which may be at-



tracted by a plurality of solenoid-cores 25. These cores are arranged circumferentially around each dial, as indicated in Fig. 5, and are energized by coils 26. These coils are  
 5 connected in parallel in a circuit 27, which leads from a battery 28, and are connected with return-wires 29, which lead back and attach in succession to the contact-plates 20, as shown. These solenoids are arranged di-  
 10 rectly beneath numbered points on the dial, which are of successively higher denomination, the return-wire 29<sup>a</sup> of the solenoid indicating the highest number, 6, which is dis-  
 15 posed at the left, including a bell 30, which will ring when the pointer is at the highest possible number. In this way each of the  
 20 dials is connected with the corresponding cushion 2 through suitable electric conductors or cables 31, as indicated in Figs. 1 and 1<sup>a</sup>.  
 In these views only two of the dials have been represented as connected with the cushions, this being sufficient for the purposes of illustration.

The mode of operation of the target will  
 25 now be described: A projectile is hurled at the objective target. If it strikes one of the buffers 8, it will violently force the same rearwardly, which will compress the air within the collapsible bag 3. In this way an impe-  
 30 tus is given to the plunger 12, which imparts a movement to the ball 16. This ball 16 then rolls rearwardly in the channel 18. As it moves rearwardly it bridges the contacts 20 successively with the contact-strip 19. In  
 35 this way the solenoids of the corresponding dial on the registering-target are brought successively into a closed electric circuit. As the circuit is closed through the first solenoid it attracts the pointer 24, which moves to a  
 40 point above it. As it strikes the second contact-plate the pointer is attracted through its corresponding solenoid, and so on. In this way, with the ball moved to the last con-  
 45 tact-plate the pointer will move to the last numbered point on the dial and the bell 30 will ring. In this way the registering-target will register the point at which the objective  
 50 target was struck and will also indicate the force of the blow delivered. Of course the action of gravity on the ball 16 tends to hold it in position against the plunger 12, and the ball rolls back to this position immediately after the target is struck. When the ball is  
 55 in its normal position, as indicated in Fig. 5, it is disposed below the lowest contact, so that all the circuits are normally open.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

60 1. In a device of the class described, in combination, an objective target having a plurality of cushions adapted to be struck by a projectile, a registering target having a plu-  
 65 rality of dials, electric circuits respectively connecting said dials with said cushions, and

means whereby said circuits may be closed by said cushions, said dials affording means for indicating the force of the blow given to said cushions.

2. In a device of the class described, in 70 combination, an objective target having a plurality of cushions thereupon adapted to be struck by a projectile, inclined channels disposed respectively behind said cushions, balls respectively guided in said channels and 75 adapted to be advanced therein by the actuation of said cushions, a registering-target having a plurality of dials corresponding in position to said cushions, contact-plates carried by said channels and adapted to be 80 bridged by said ball, and circuits connecting said contact-plates with said dials.

3. In a device of the class described, in combination, an objective target having a pneumatic cushion on the face thereof, a 85 spring normally holding said cushion in an inflated condition, a nipple communicating with the interior of said cushion, a ball seating against said nipple and adapted to be thrown from said nipple by the collapsing of 90 said cushion, a support constituting a guide for said ball, contact-plates carried by said support, circuits leading from said contact-plates, a registering-target having a plurality of dials, and electric circuits connecting said 95 dials respectively with said contact-plates and adapted to be closed by the movement of said ball along said contact-plates.

4. An objective target comprising a board 100 having a plurality of pneumatic cushions on the face thereof adapted to be struck by a projectile, nipples mounted in said board and communicating with the interior of said cushions respectively, balls respectively seat- 105 ing on said nipples and adapted to be projected therefrom when said cushions are struck, inclined guides for said balls, and means for indicating the point to which said balls may roll.

5. A target having a member adapted to 110 be struck by a projectile, a plunger behind said member and adapted to be advanced when said member is struck, an inclined guide behind said plunger and having a plu- 115 rality of contacts, a ball adapted to roll on said guide to close said contacts and normally lying adjacent to said plunger, and means for indicating the point to which said ball may roll along said guide controlled by said contacts. 120

6. In combination, a board having a pneumatic cushion attached on the forward face thereof, a nipple back of said cushion and communicating with the interior thereof, a plunger guided in said nipple, a ball seating 125 on said nipple and adapted to be advanced by said plunger, an inclined guide for said ball along which the same may roll, and means for indicating the point to which said ball may roll on said guide. 130



7. In a target, in combination, a board, a bag attached on the face thereof, means for normally holding said bag in an inflated condition, a buffer attached to the forward side  
5 of said bag and having a guide-neck, a plate attached over said bag and having a guide-opening receiving said neck, and means for indicating the force of the blow struck upon said buffer.

10 8. In a target, in combination, a board, a bag mounted upon the face thereof, a spring for normally holding said bag in an inflated condition, a buffer attached to the outer side

of said bag and having a guide-neck, a face-plate covering said bag and having an open- 15  
ing receiving said guide-neck, and means for indicating the force of the blow delivered by a projectile on said buffer.

In testimony whereof I have signed my name to this specification in the presence of 20  
two subscribing witnesses.

JOHN NICHOLAS MICHEL.

Witnesses:

JAMES McAVEY,  
THOS. F. KING.