

No. 837,634.

PATENTED DEC. 4, 1906.

G. P. McDONNELL.
ELECTRIC SWITCH.

APPLICATION FILED NOV. 9, 1905

Fig. 1.

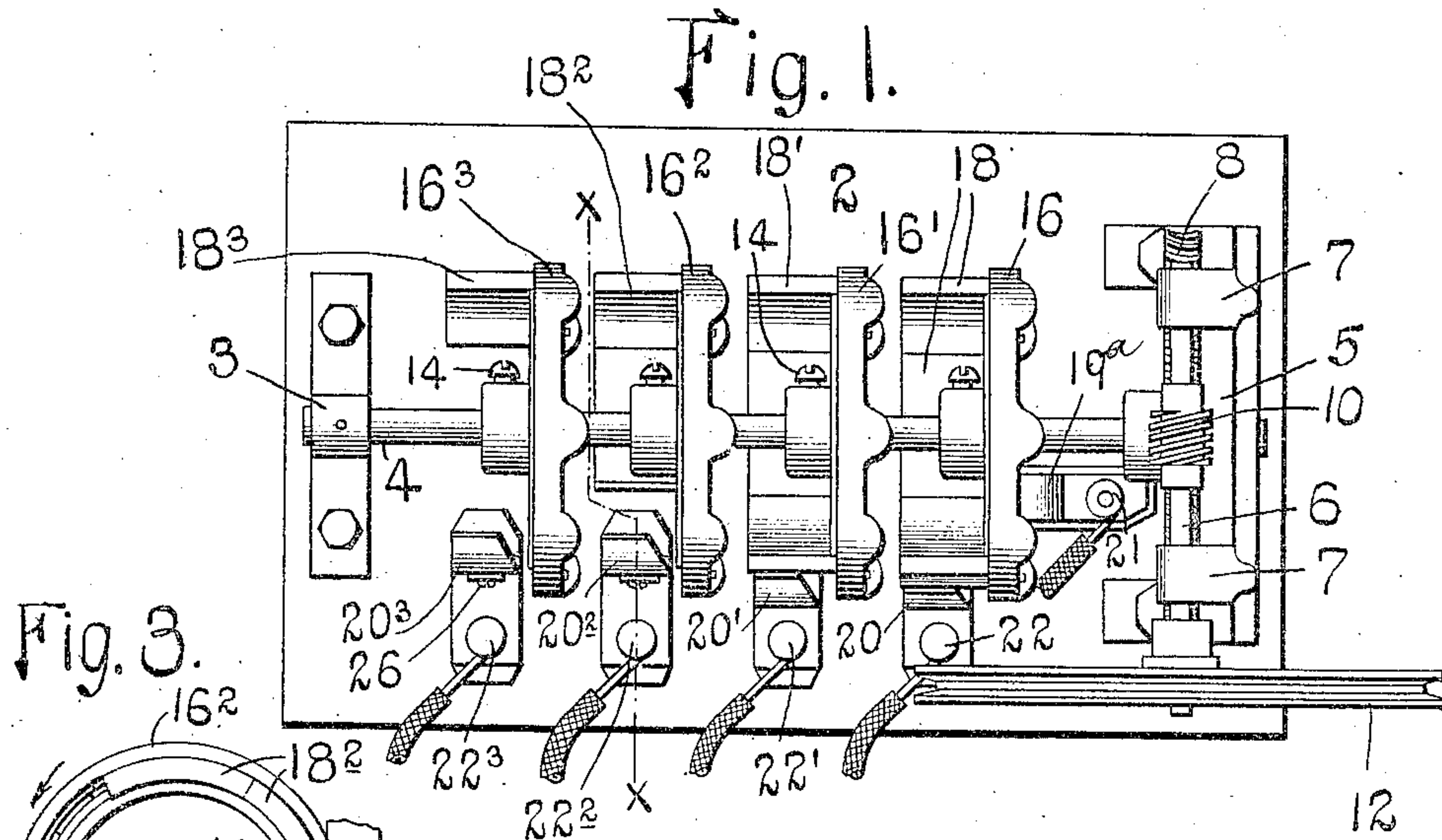


Fig. 3.

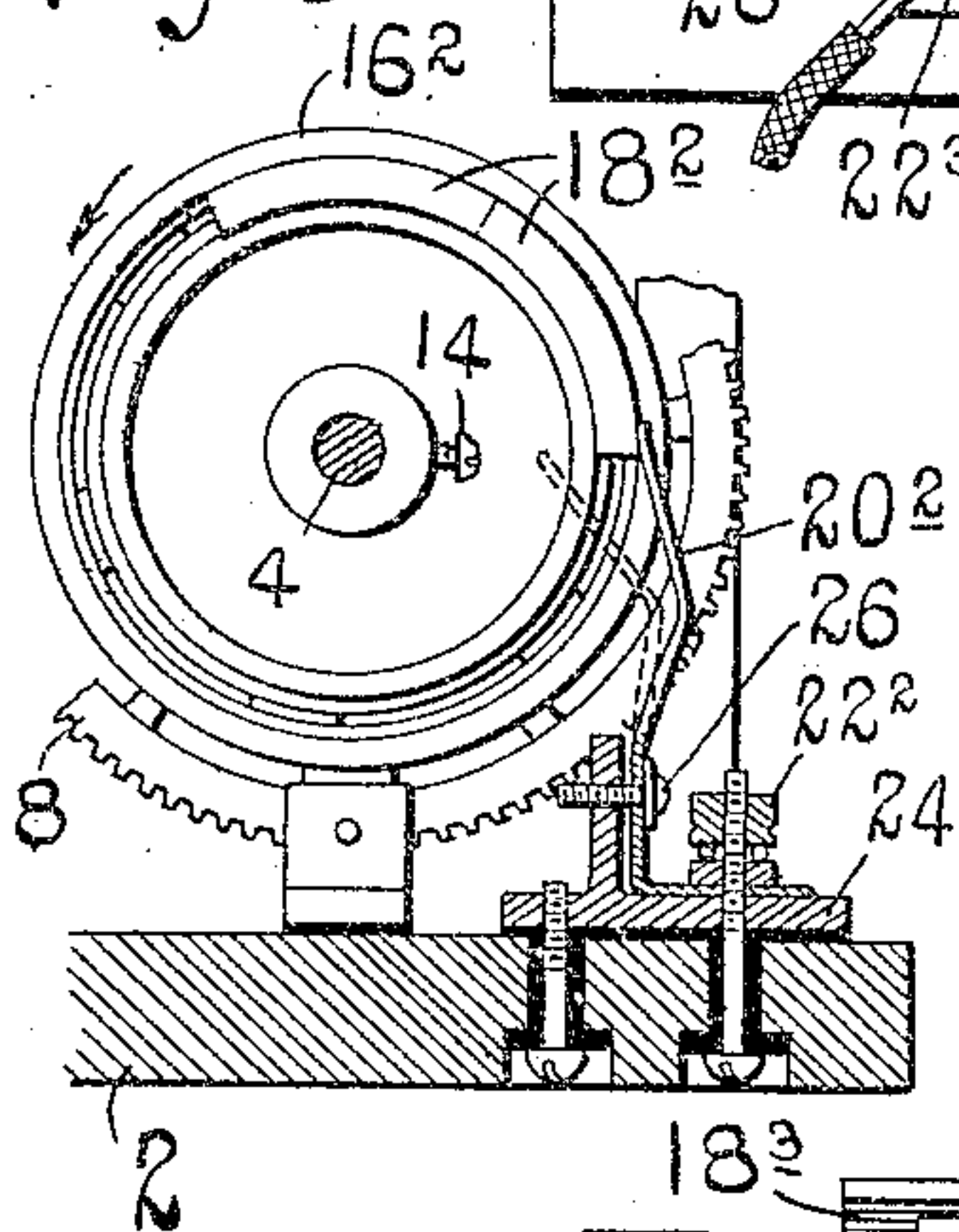


Fig. 2.

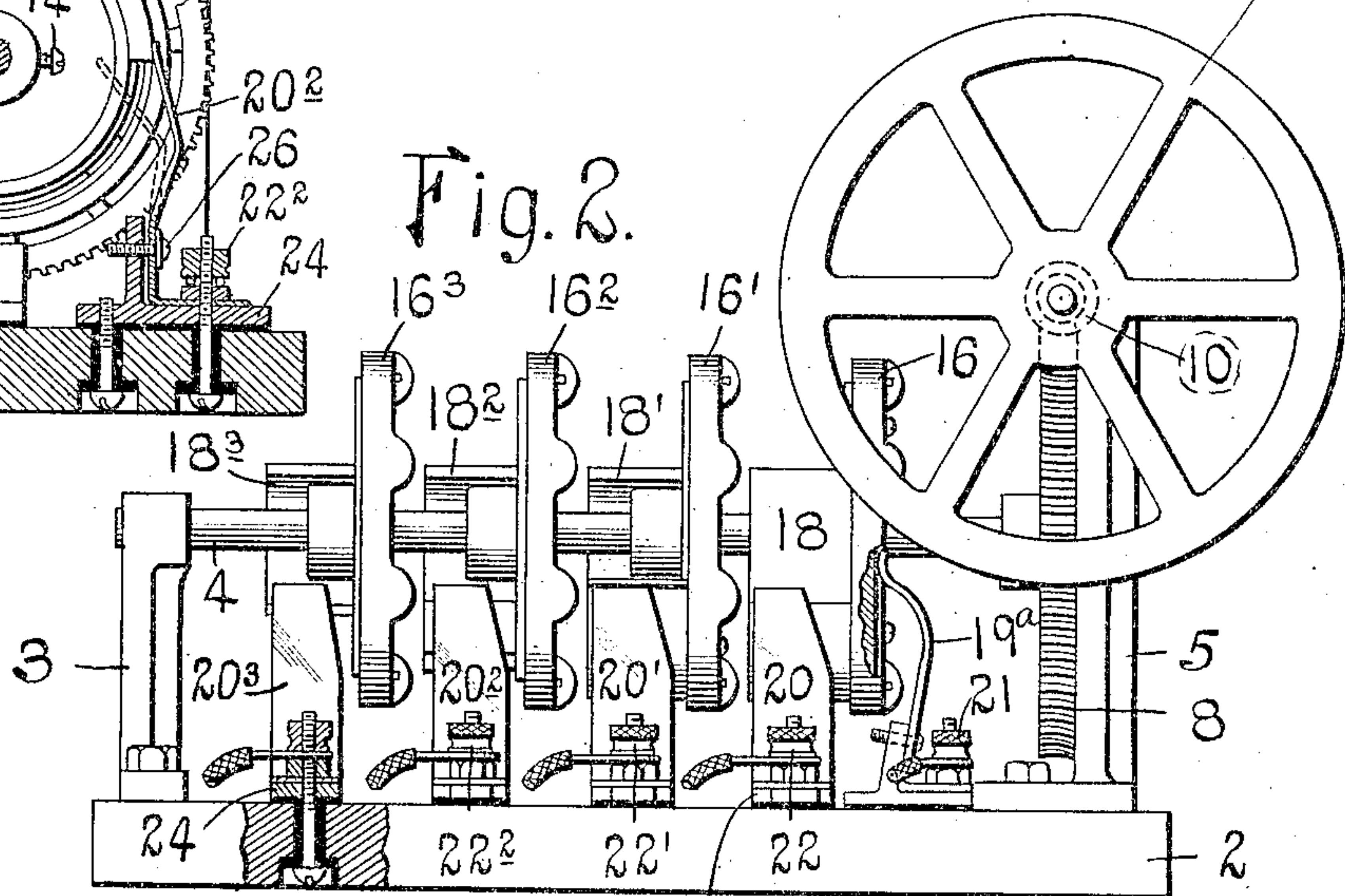


Fig. 4.

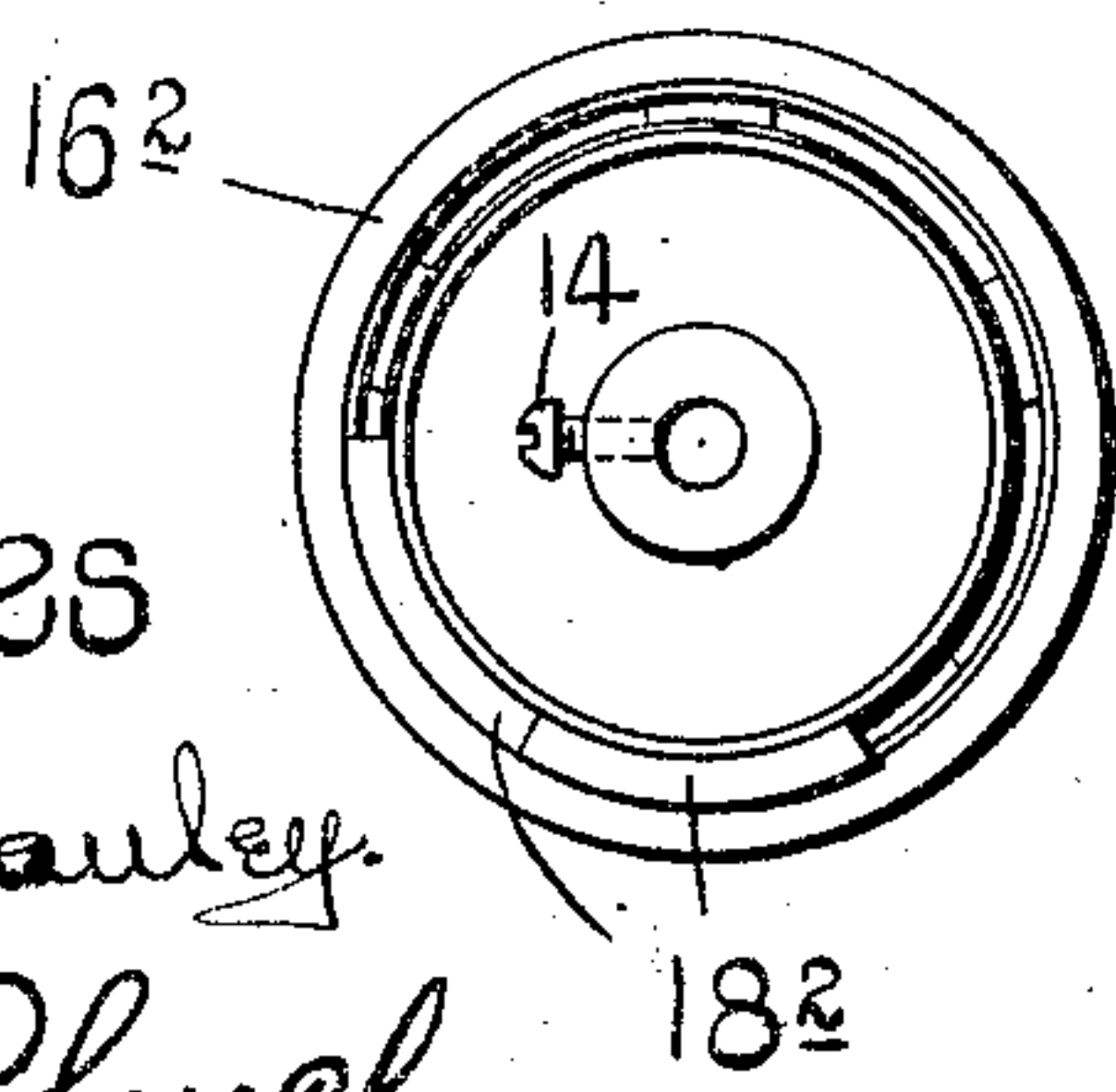
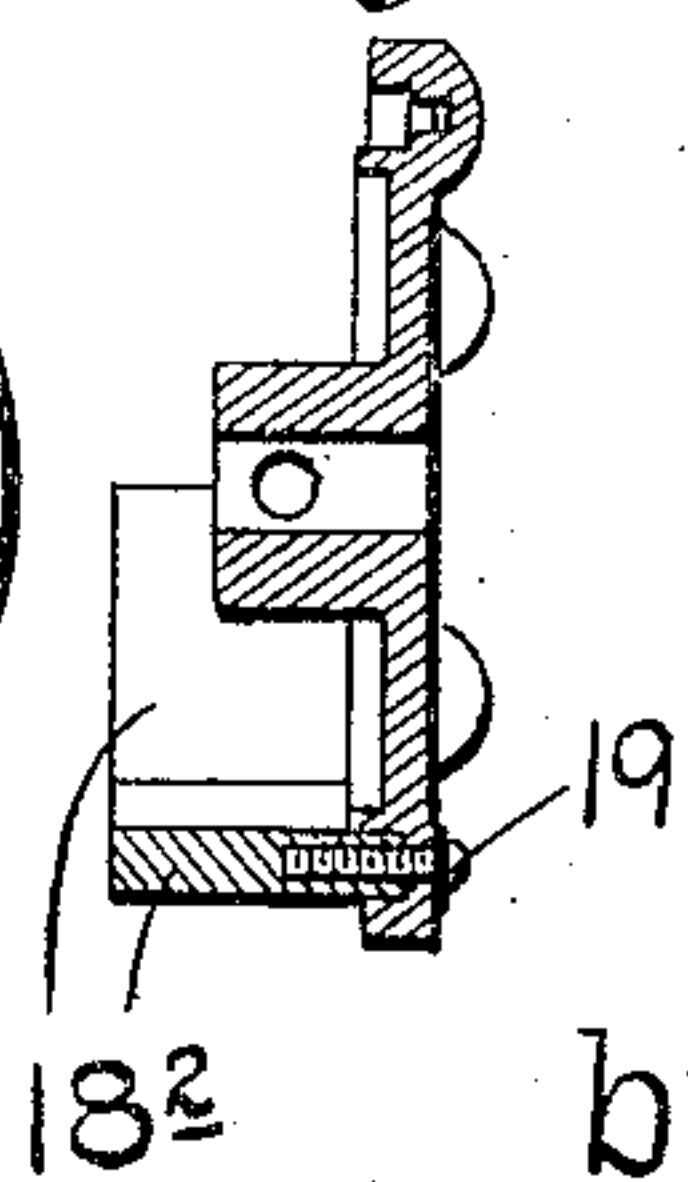


Fig. 5.



Witnesses

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UNITED STATES PATENT OFFICE.

GEORGE P. McDONNELL, OF ST. LOUIS, MISSOURI, ASSIGNOR TO
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ELECTRIC SWITCH.

No. 837,634.

Specification of Letters Patent.

Patented Dec. 4, 1906.

Application filed November 9, 1905. Serial No. 286,537.

To all whom it may concern:

Be it known that I, GEORGE P. McDONNELL, a citizen of the United States, residing at St. Louis, Missouri, have invented a certain new and useful Improvement in Electric Switches, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a plan view of a device embodying the features of my invention. Fig. 2 is a front elevation of the device shown in Fig. 1. Fig. 3 is a cross-sectional view taken on the line X-X of Fig. 1. Fig. 4 is a detail view showing in side elevation one of the disks carrying the controlling means, and Fig. 5 is a transverse sectional view of the device shown in Fig. 4.

This invention relates to electrical switches, and particularly to switches used in electrical display-signs.

My invention is herein shown as embodied in a switch for controlling the illumination of an electrical display-sign in which the different characters composing the sign are illuminated in a certain sequence.

One object of my invention is to provide a switch having adjustable controlling means for varying the time at which the characters of the sign are illuminated and also the length of time for which they remain illuminated.

Another object of the invention is to provide a switch in which the brushes will not be subjected to useless wear, thereby prolonging its period of usefulness and insuring its controlling the illumination of the characters at just the proper time.

The device herein shown, which represents the preferred form of my invention, comprises a switch having adjustable controlling means moving in a circular path and cooperating with brushes which move out of engagement with said controlling means for breaking the circuits which illuminate the characters of the sign. Said device is constructed to control the illumination of a sign made up of four characters—such, for example, the letters "S" "O" "A" "P"—and

the controlling means is so arranged that the letter "S" will first be illuminated, then the letters "O," "A," and "P" progressively, and then all of the letters will be extinguished simultaneously. It should be understood, however, that this same idea could be embodied in a switch for use in a sign made up of a different number of characters and in which the sequence of illumination is different.

Referring to the drawings, 2 designates a base provided at its opposite ends with bearings 3 and 5 for a shaft 4, the bearing 5 also being provided with journals 7 for a cross-shaft 6. Fastened to the shaft 4 is a worm-gear 8, which meshes with a worm 10 on a cross-shaft 6, said shaft being provided with a grooved pulley 12, that is driven by means of a belt, (not shown,) whereby rotary movement is imparted to the shaft 4. Adjustably secured to the shaft 4, preferably by means of set-screws 14, are a plurality of disks 16, 16', 16², and 16³, each having a circular groove that receives the controlling means comprising laterally-projecting blocks 18, 18', 18², and 18³ adjustably held in position by screws 19. (See Fig. 5.) These controlling-blocks are adapted to cooperate with brushes 20, 20', 20², and 20³, consisting of flat springs, preferably formed of brass, and being in contact with binding-posts 22, 22', 22², and 22³, each of which receives a negative wire that leads to the illuminating means of one of the letters of the sign. The binding-posts and brushes are mounted on blocks 24, which are insulated from the base 2 by insulating material, as shown in Fig. 3, and the position of each brush relatively to its controlling-blocks can be varied by a screw 26, that is threaded into an upwardly-projecting arm on the block. Cooperating with the disk 16 is a brush 19^a, similar in construction to the brushes previously described and being in contact with the binding-post 21, which receives a positive wire leading from the illuminating means for the letters and through a source of electric energy, the brush 19^a being always in engagement with the disk 16. The disk 16 is provided with four controlling-blocks adjusted together to form a segment, the

disk 16' with three blocks, the disk 16² with two blocks, and the disk 16³ with one block, so that when the shaft 4 revolves in the direction of the arrow in Fig. 3 the controlling-
 5 blocks on the disk 16 will coöperate with the brush 20 to close the circuit for the letter "S," said block and brush remaining in engagement while the blocks on the other disks engage the brushes progressively. The
 10 blocks on the disks are so arranged that the controlling means on all the disks will pass out of engagement with the brushes at the same time, whereby the circuit for each letter is broken at the same time to extinguish
 15 all of the letters simultaneously, the brushes then assuming their normal position out of engagement with the controlling means, as shown in dotted lines in Fig. 3.

One desirable feature of a construction
 20 such as that described is that the brushes are in engagement with their coöperating controlling-blocks only when the circuit is closed, so that they are not subjected to unnecessary wear and their period of usefulness
 25 is accordingly prolonged. Furthermore, as the controlling means of the switch consists of a plurality of adjustable blocks the sequence in which the letters are illuminated can be varied at will and also the time for
 30 which each letter remains illuminated.

Having thus described the invention, what is desired to be secured by Letters Patent is—

1. A device of the character described, comprising a rotary disk provided in one of its side faces with a circular slot, a controlling member consisting of a segmental-shaped block mounted in said slot and adjustably held in position, and a brush coöperating with said block; substantially as described. 35 40

2. A device of the character described, comprising a rotary disk provided in one of its side faces with a circular slot, a controlling member consisting of a plurality of segmental-shaped blocks adjustably mounted in the slot in said disk and projecting laterally therefrom, a brush consisting of a flat spring coöperating with said controlling member, and an adjustable screw extending through said spring to control its position relatively to the controlling member; substantially as described. 45 50

In testimony whereof I hereunto affix my signature, in the presence of two witnesses, this 1st day of November, 1905.

GEORGE P. McDONNELL.

Witnesses:

WELLS L. CHURCH,
 GEORGE BAKEWELL.