

G. W. JANSON.
CALL BOX CONTACT MECHANISM.
APPLICATION FILED JULY 2, 1920.

1,416,642.

Patented May 16, 1922.
2 SHEETS—SHEET 1.

Fig. 2.

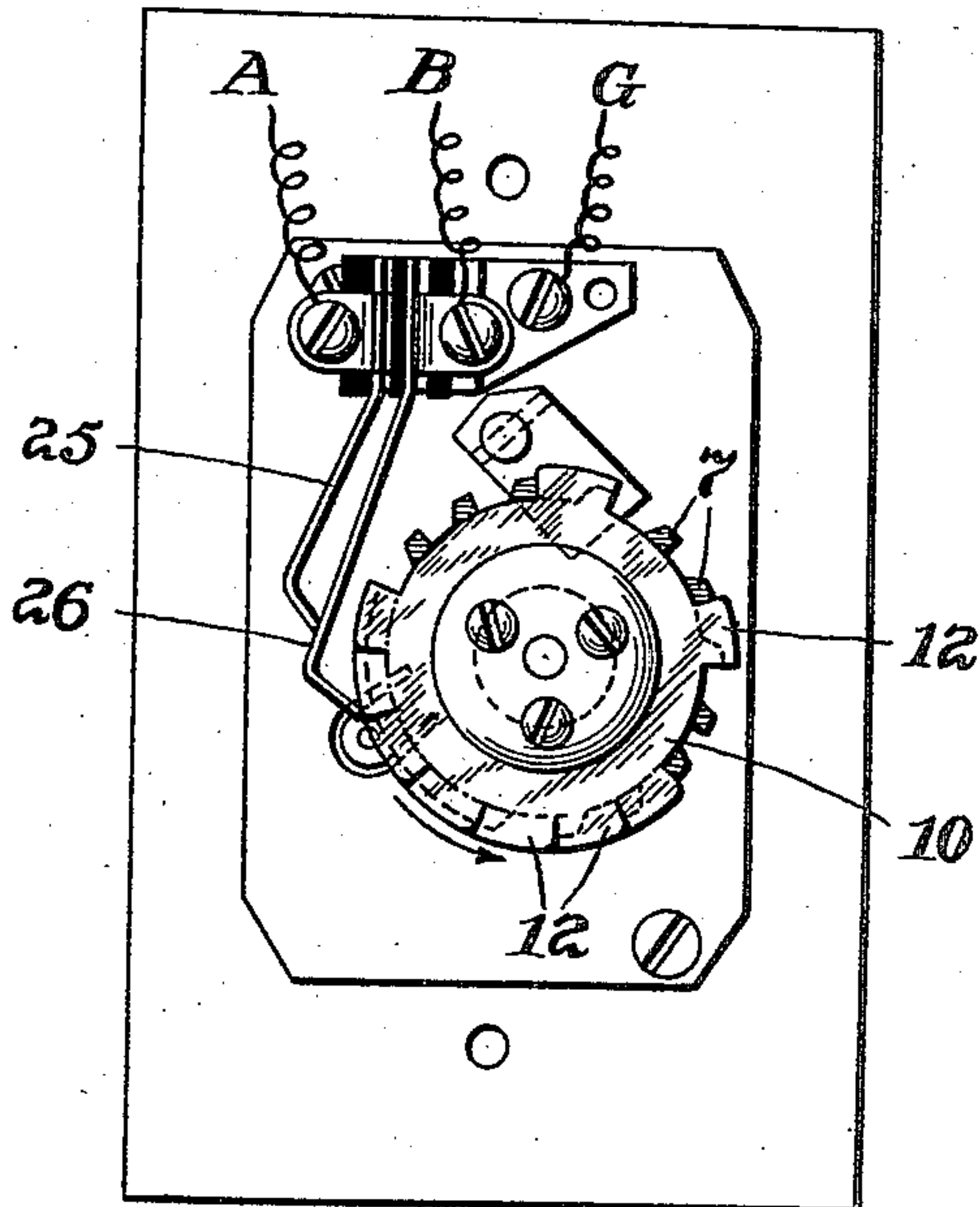


Fig. 1.

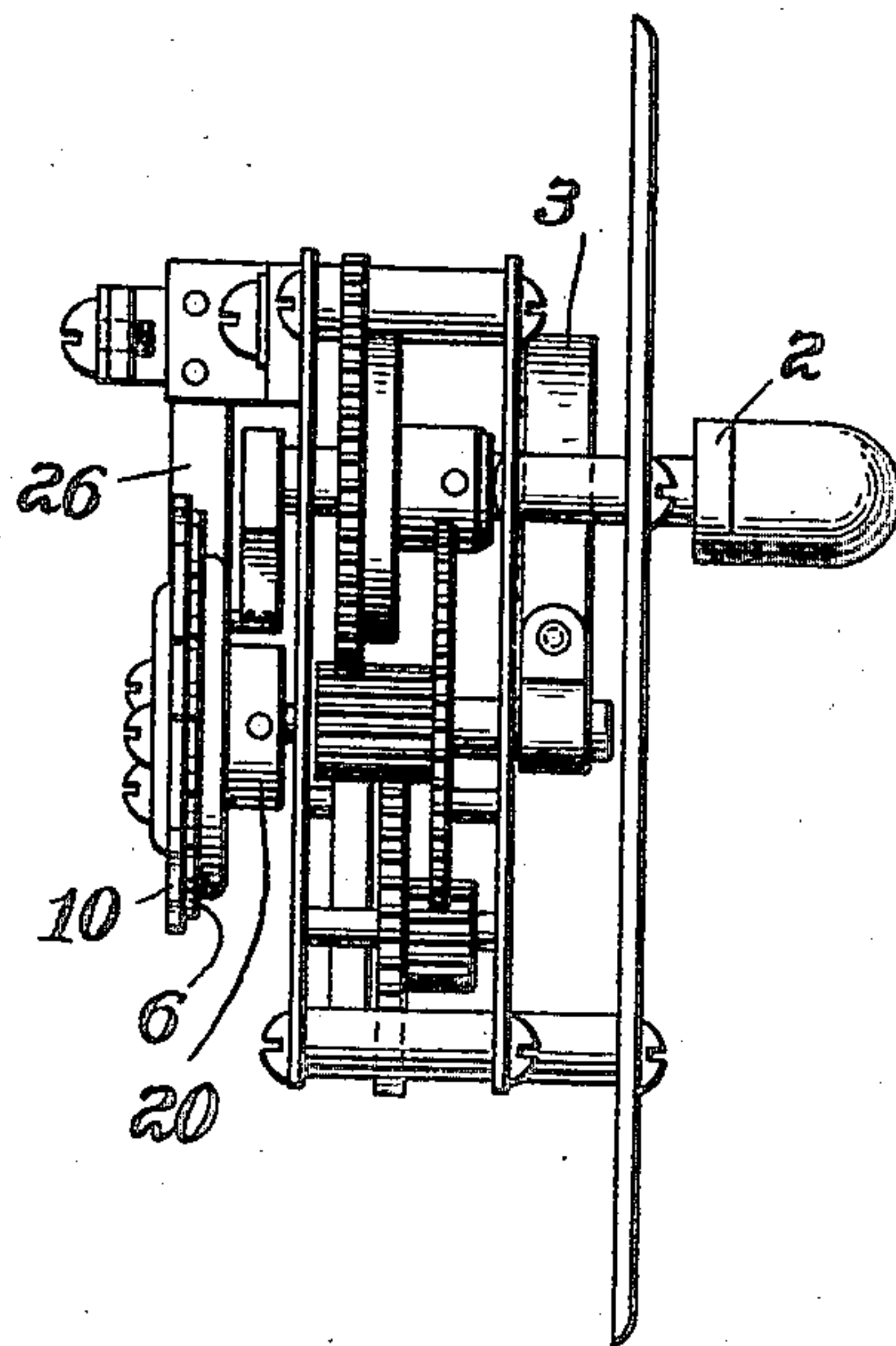


Fig. 3.

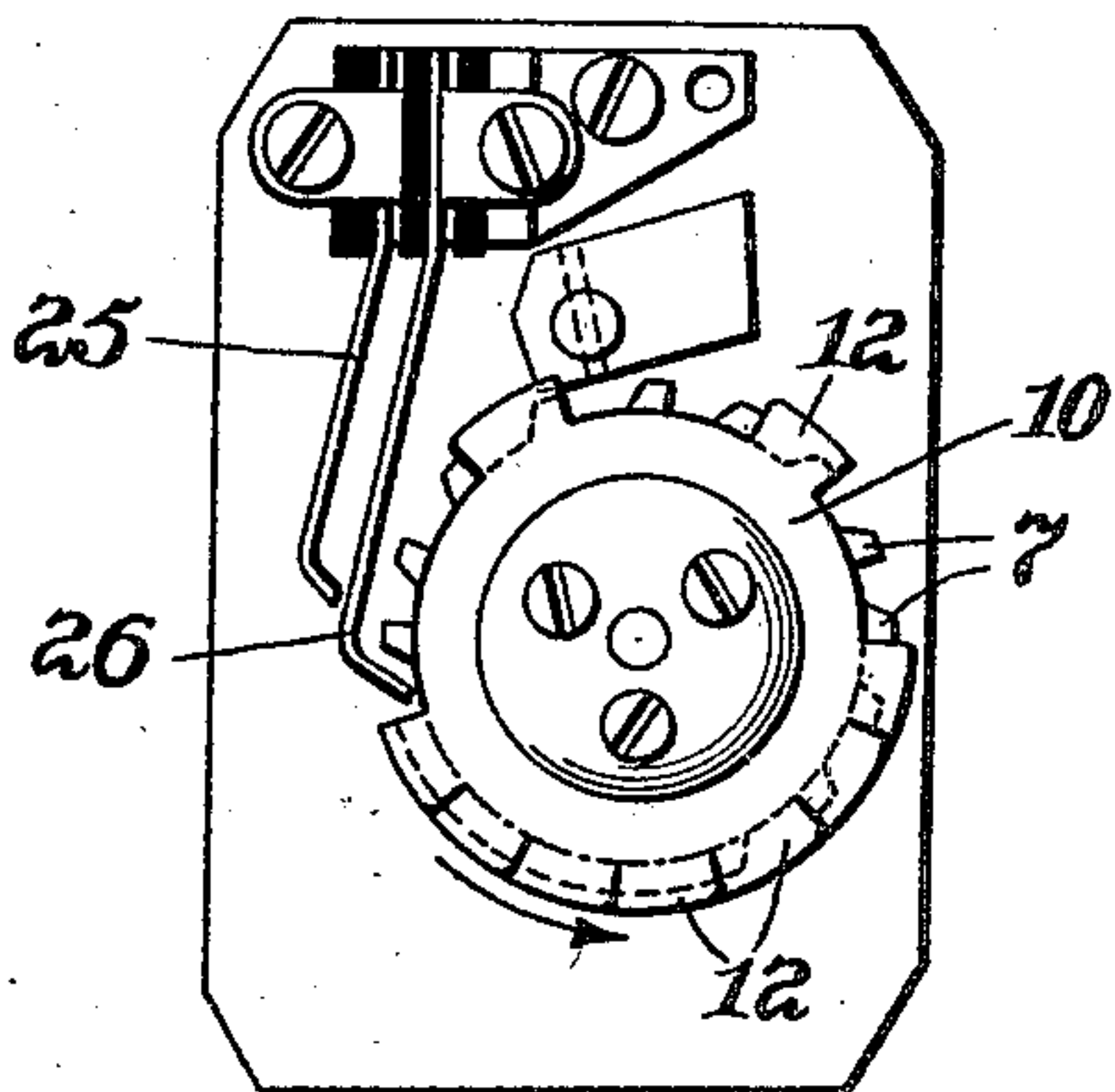
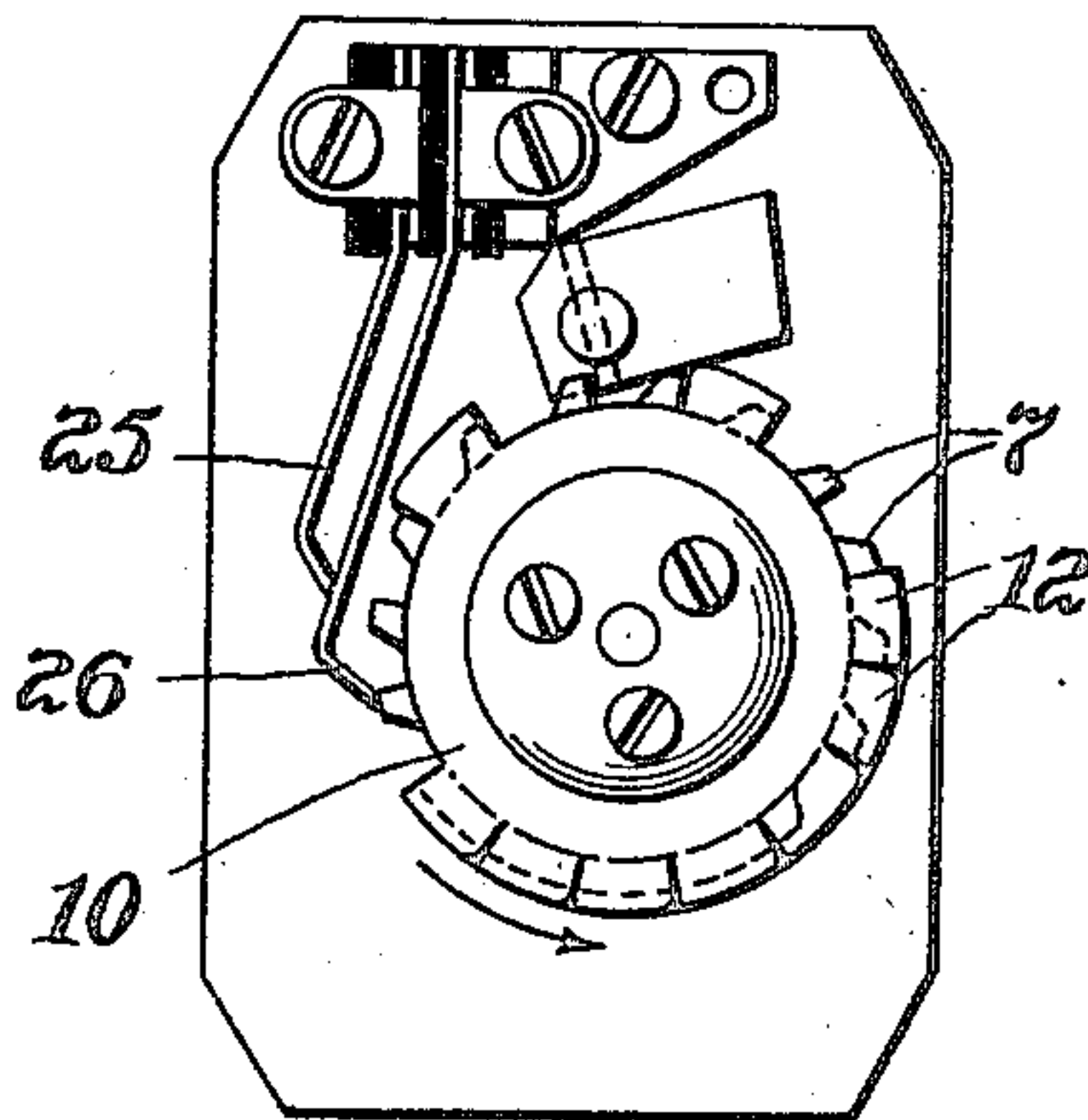


Fig. 4.



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Fig. 5.

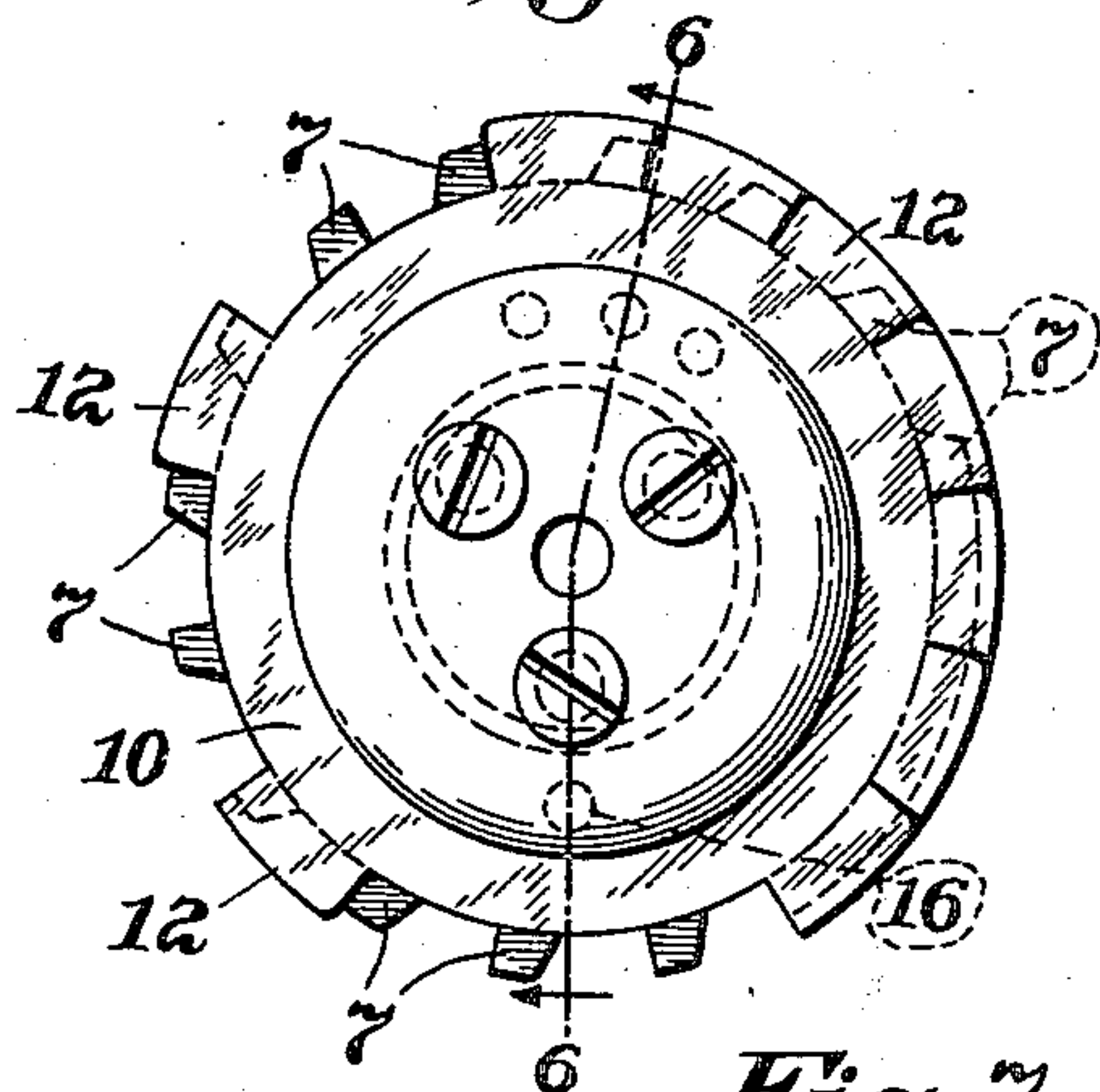


Fig. 6.

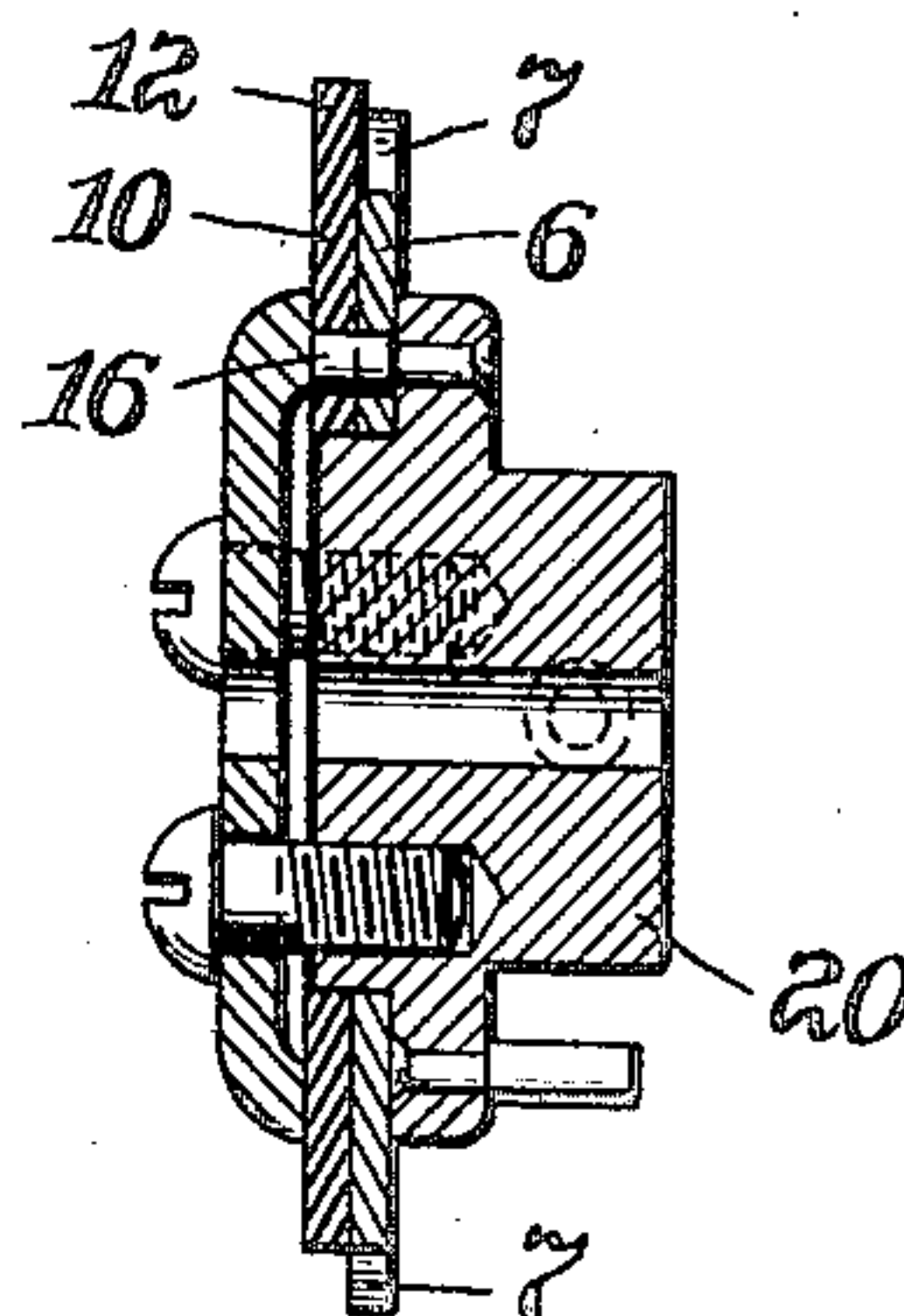


Fig. 7.

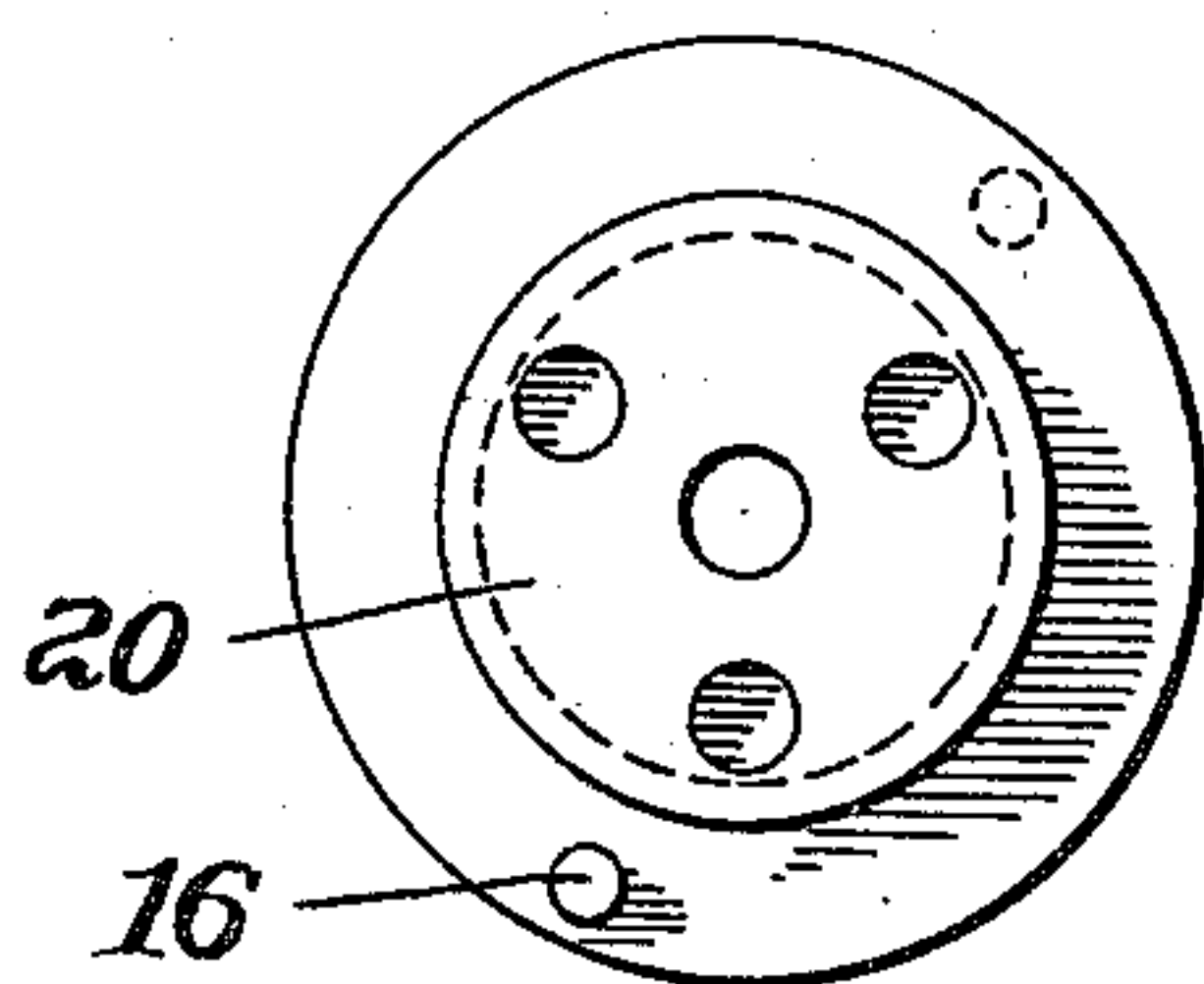


Fig. 8.

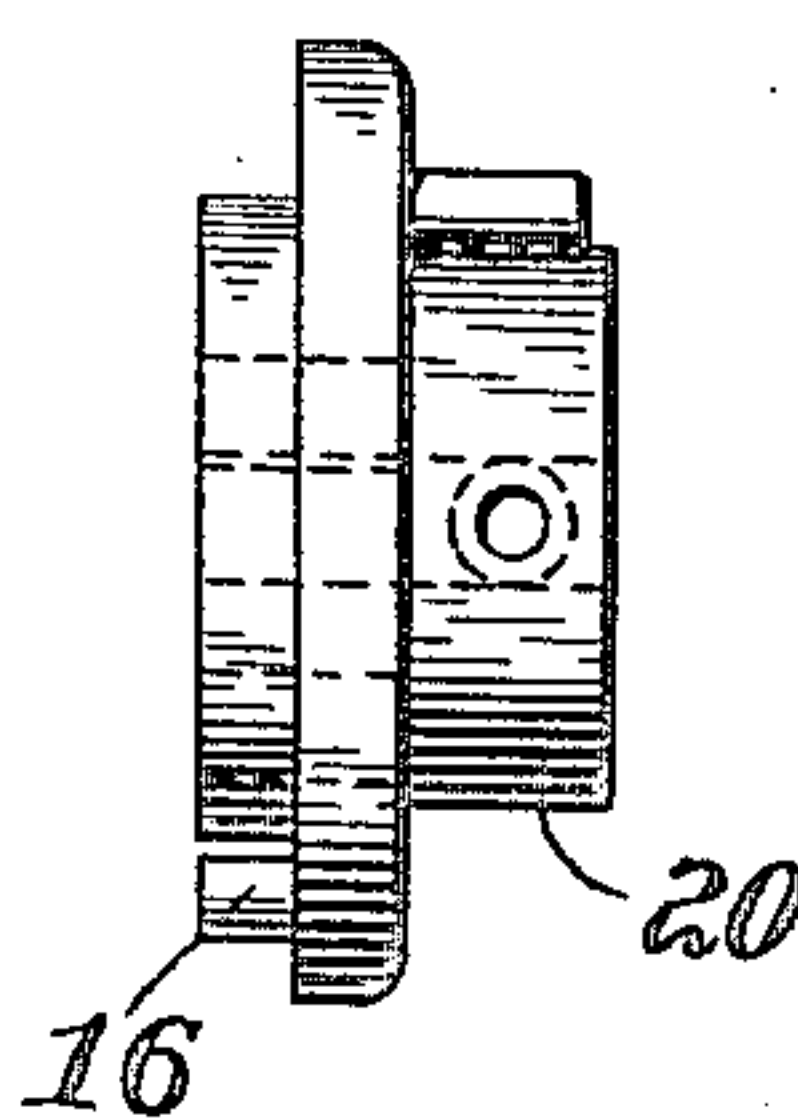


Fig. 9.

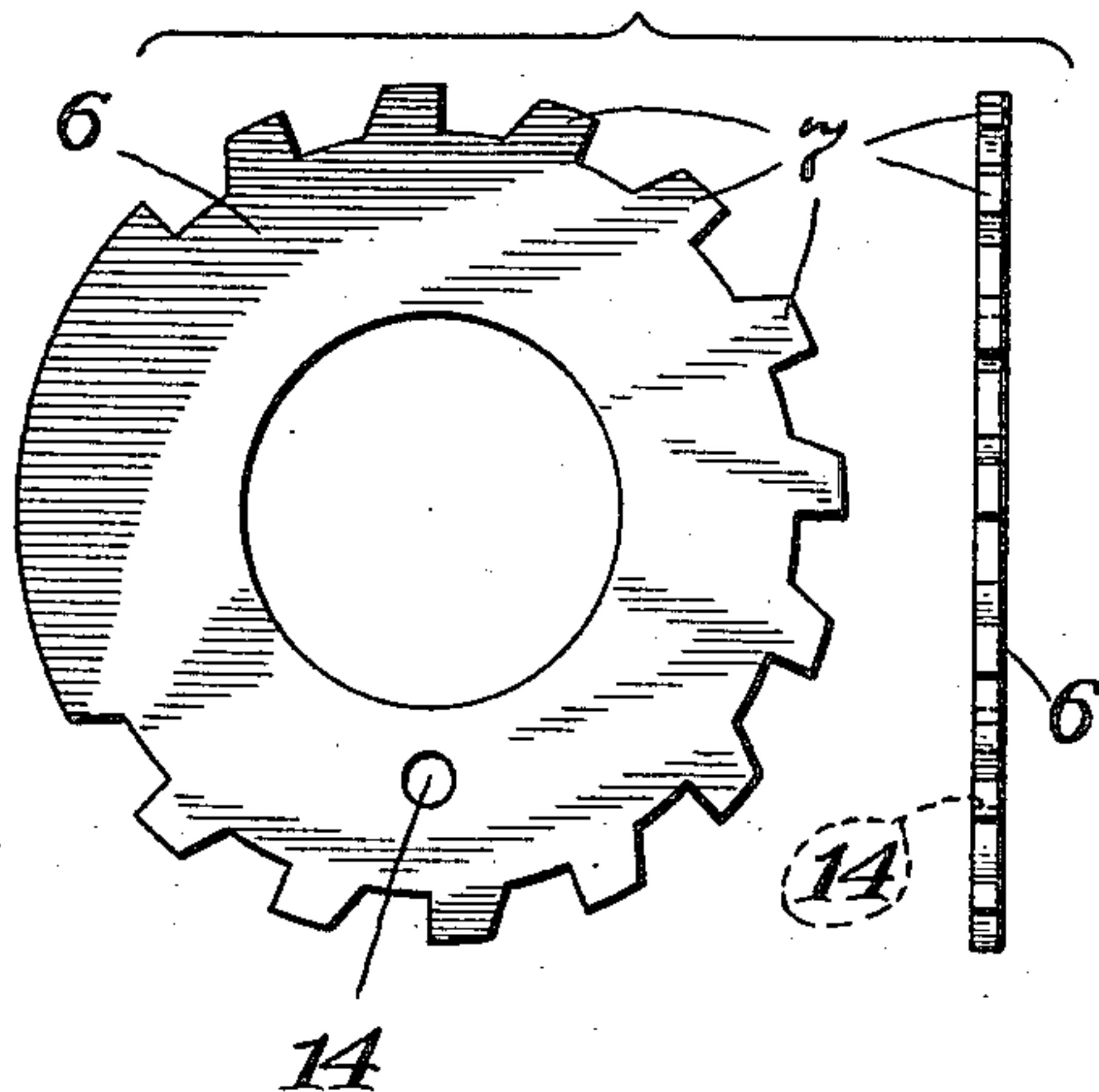
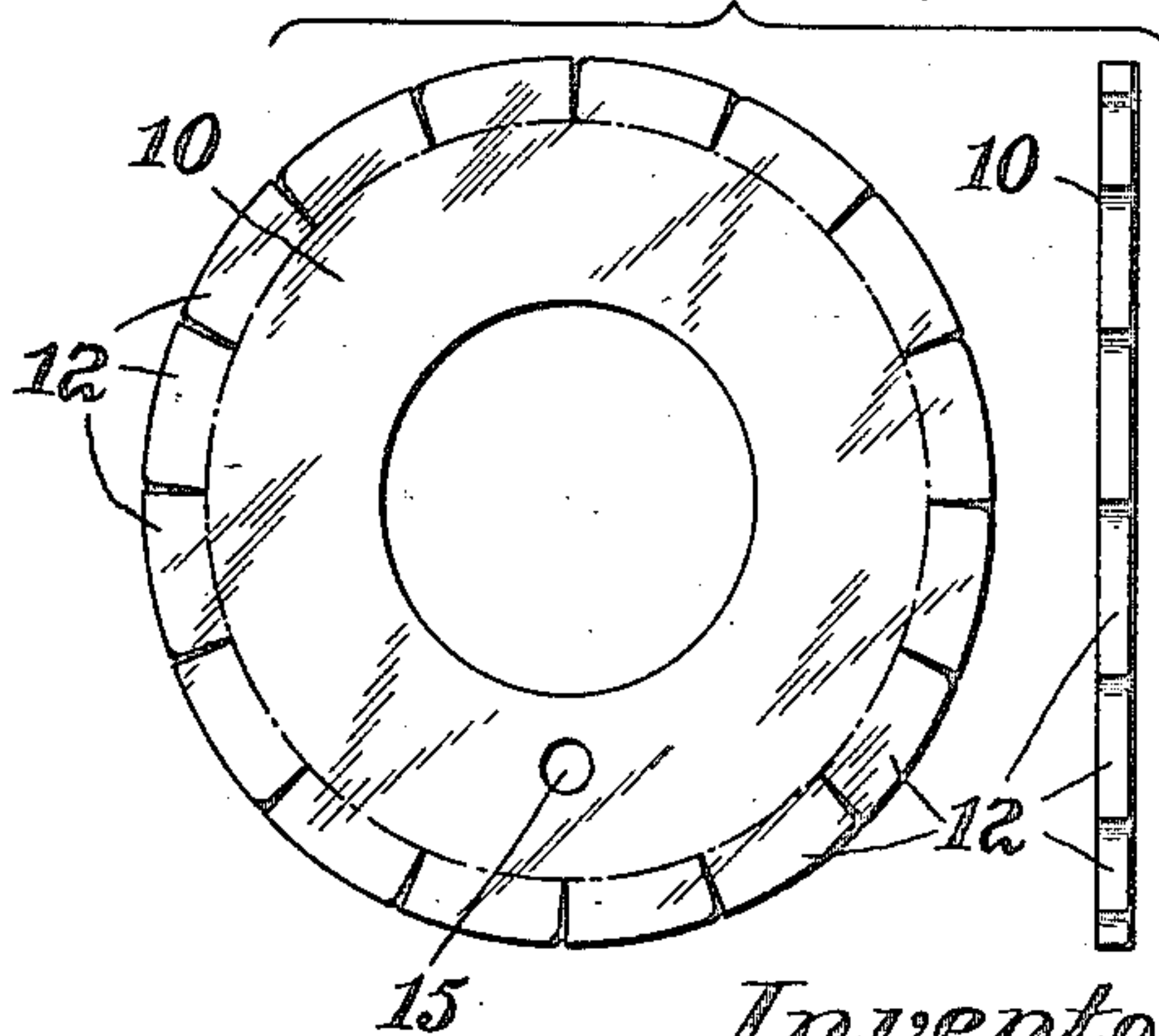


Fig. 10.



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UNITED STATES PATENT OFFICE.

GEORGE W. JANSON, OF BROOKLYN, NEW YORK, ASSIGNOR TO THE WESTERN UNION TELEGRAPH COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

CALL-BOX CONTACT MECHANISM.

1,416,642.

Specification of Letters Patent. Patented May 16, 1922.

Application filed July 2, 1920. Serial No. 393,654.

To all whom it may concern:

Be it known that I, GEORGE W. JANSON, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Call-Box Contact Mechanism, of which the following is a specification.

My invention relates to signal transmitters such as are employed in the ordinary messenger call box circuits now commonly used by the telegraph companies.

The signal transmitting mechanism employed in call boxes of the usual type embodies a toothed break wheel actuated by a small spring motor which is set in motion by the depression of a lever or the rotation of a button, the teeth contacting with a plurality of brushes or "pens" to cause a series of interruptions or makes and breaks in regular sequence in the signal circuit. The teeth on the break wheel are arranged in groups with a portion of unbroken periphery of the wheel between the groups to produce the desired code signal. Various means have been employed for changing at will the code signals of the individual boxes. Thus in Patents 1,164,069 and 1,224,359 blank sectors coast with the teeth of the break wheel to form the code signal, the sectors being adjusted to various positions to change the code. In the device illustrated in Patent 1,111,033, the teeth of the break wheel are connected by a thin web which may be broken away to form the desired grouping, but another break wheel must be employed if it is desired to make a change in the code signal.

One of the objects of my invention is to provide means for readily changing the code signal of any call box by means of a blanking disk which cooperates with the toothed break wheel and is provided with frangible sections. These frangible disks may be supplied in quantity to the mechanics or electricians who can make the desired change in the code signal of any call box by merely breaking out the proper sections of one of the blanking disks and placing it in proper relation to the break wheel in the box.

A further object is to simplify the arrangement of contact brushes and make them more reliable in operation.

In the following description of my invention, I shall refer to the accompanying draw-

ings, in which—Figure 1 is a side elevation of a call box signal mechanism embodying my invention; Figs. 2, 3 and 4 are elevations of the break wheel and blanking disk with the coating contact brushes or pens, the different figures showing the contact pens in the several successive positions occupied during rotation of the break wheel; Fig. 5 is a side elevation of a break wheel and co-operating blanking disk with certain sections or teeth broken out to form a code signal; Fig. 6, is a sectional view on the line 6—6 of Fig. 5; Figs. 7 and 8 are front and side elevations respectively, of the hub to which the break wheel and blanking disk are attached; Figs. 9 and 10 illustrate respectively the break wheel and blanking disk in side and edge elevation.

The actuating mechanism for rotating the break or contact wheel of the ordinary signal call box, such as illustrated in Fig. 1, is well known and need not be explained in detail. The crank lever 2 which projects in front of the cover of the call box is turned to wind the spring 3, which sets in motion the gearing to cause one revolution of the code break wheel.

The break or contact wheel 6 is formed with a number of symmetrically arranged teeth 7 and this is associated with a blanking disk 10 having its periphery broken away at the proper places to expose the desired teeth of the break or contact wheel to thereby arrange the teeth in predetermined groups with a portion of unbroken periphery of insulating material between the groups. The break or contact wheel is of brass or other suitable metal. My invention enables a standard uniform metal contact or break wheel to be employed in all boxes by combining with it a blanking disk of standard construction, which may be altered by the mechanic at the place of installation to suit the desired code signal and which is molded from inexpensive insulating material so that the cost is practically negligible.

The metal contact or break wheel is shown in plan and edge views in Fig. 9 and is of the well known form. The blanking disk is illustrated in plan and edge views in Fig. 10 and may be stamped or otherwise constructed of any suitable insulating material. The margin is scored, notched or partly cut, as indicated, to divide the periphery into a series of partly formed teeth 12, which, by

reason of the scoring, are frangible and may be readily broken off leaving a space equal to one or more teeth as desired. As indicated in Fig. 5, the blanking disk is of slightly greater diameter than the break wheel and each tooth or segment 12 is equal in angular length to the added lengths of a tooth and a space of the break wheel. The break wheel is provided with a hole 14 and the blanking disk with a hole 15 which fit over the pin 16 on the hub 20 when they are assembled in the signal box thereby ensuring the proper arrangement of parts so that the segments of the blanking disk lie opposite a tooth and a space of the break wheel. It will be evident that any desired grouping of the teeth of the break wheel may be arranged at once by breaking out the corresponding segments of a blanking disk.

The break wheel or contact wheel 6 is grounded through the gearing and other metal parts of the call box. The line circuit is normally maintained closed through two springs contact brushes or "pens." In prior devices in which one or more metal blanking disks are employed, a third brush forces said two brushes apart to open the line circuit when it is opposite a space between the teeth and serves to ground the line when opposite a tooth. I have simplified the construction and rendered the operation more certain by employing only two brushes, which separate to open the line circuit when opposite a space between teeth, the inner pen or brush being forced into engagement with the other when passing over a tooth, thereby grounding the line through the call box and maintaining the line closed when the inner pen or brush rides upon the periphery of the unbroken segments of the insulating blanking disks.

The contact brushes or "pens" 25, 26 are

connected to the line conductors A, B, while the break wheel 6 is connected through the call box mechanism to the ground wire G. When the parts are at rest, as indicated in Fig. 1, the spring 26 rides upon the periphery of the unbroken segments of the insulating disk 10, and is pressed against the spring 25, thus maintaining the line circuit A, B closed. As soon as the call box mechanism is set in operation the pen 26 drops from the insulating segment into a space, as indicated in Fig. 3, permitting the spring pens to separate and thus opening the line circuit. In an instant the brush 26 rides upon a tooth 7 of the break wheel, pressing the pens together to establish the line circuit and simultaneously grounding it through the break wheel, as indicated in Fig. 4. These steps are repeated for every tooth engaged by the pen 26, resulting in the transmission of the desired code signal over the line circuit.

I claim:—

1. In a signal transmitter having a toothed break wheel and contact pens adapted to engage the periphery of the exposed teeth of said wheel as the latter is rotated, an insulating disk having a greater diameter than said wheel whereby the pens are lifted from the latter when the disk and wheel are juxtaposed, the peripheral portion of the disk being composed of a series of scored frangible sections, and which may be readily removed as desired to expose any predetermined combination of said teeth.

2. In a signal transmitter as set forth in claim 1, frangible sections of the insulating disk being equal to the combined width of a tooth and a notch in the break wheel.

In testimony whereof I affix my signature.

GEO. W. JANSON.