S. SANDREUTER.

INTERRUPTER.

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1,224,570. Patented May 1, 1917.

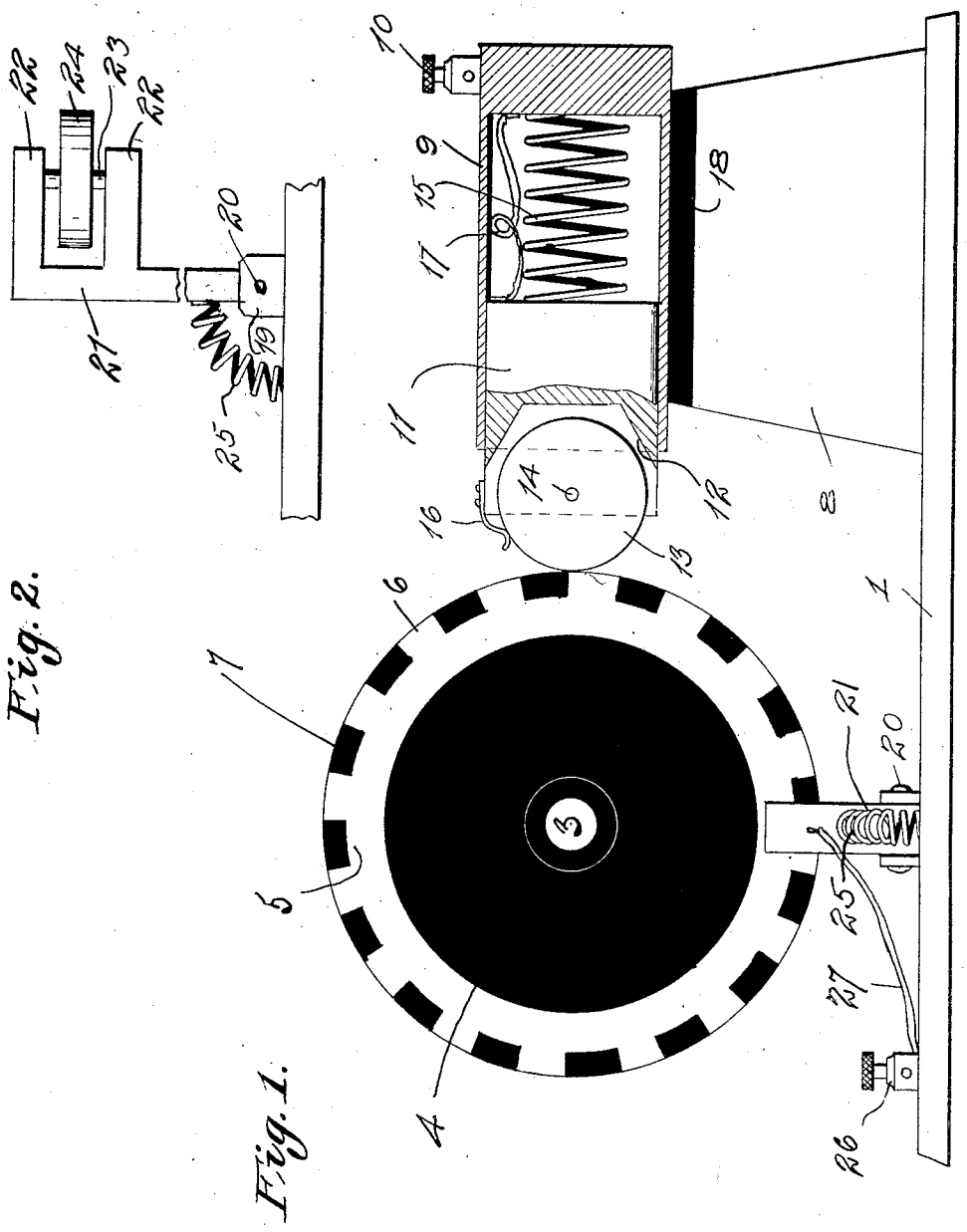


Fig. 2.

Fig. 1.

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INTERRUPTER.

1,224,570. Specification of Letters Patent. Patented May 1, 1917.

Application filed July 1, 1916. Serial No. 107,049.

To all whom it may concern:

Be it known that I, STUART SANDREUTER, a citizen of the United States, residing at Stamford, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Interrupters; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to new and useful improvements in interrupters and is particularly adapted for use where it is desired to interrupt an electric circuit in connection with wireless telegraph apparatus and the like.

Another object of the invention is to provide a device which may be used in connection with lighting systems in order to reduce the consumption of power necessary for illumination.

Another object of the invention is to provide a novel means for forming the contacts between the various moving parts in order to reduce arcing to a minimum.

A still further object of the invention is to provide a device which may be used to run in oil or in connection with a condenser in order that any tendency to arc will be avoided.

With these and other objects in view, the invention consists in the novel combination and arrangement of parts which will be fully set forth in the following specification and accompanying drawing, in which:—

Figure 1 is a side view in elevation of an interrupter constructed in accordance with this invention showing a portion thereof in section to more clearly illustrate the details of construction, and

Fig. 2 is an enlarged detail view of the lateral contact.

Referring to the drawing the numeral 1 designates the base of the device provided with a suitable standard 2 having a shaft 3 journaled in its upper end. A disk 4 of insulating material is mounted on said shaft and is surrounded on its periphery by a ring 5 of a suitable conductive material provided with a plurality of radial extensions 6 between which are mounted the insulating plates 7. The shaft 3 is adapted to be driven by a motor or any other suitable operating element in order to rapidly rotate the disk when the device is in operation.

Mounted on the base 1 is a suitable pedestal 8 carrying at its upper end a sleeve 9 which is closed at one end and carries a binding post 10. The open end of the sleeve is directed toward the periphery of the rotating element and has mounted therein the plunger 11 which is provided with the axial recess 12 in its outer end in which the contact roller 13 is mounted. This roller is journaled on a suitable shaft 14 and is arranged to run against the periphery of the rotating element hereinbefore described. A compression coil spring 15 abuts the end closure of the sleeve 9 and the inner terminal of the plunger 11 in order to urge the roller 13 outwardly and into contact with the rotating element. In order to insure a proper contact of the roller with the sleeve 11 a suitable brush 16 is mounted on the sleeve and bears on the roller as clearly shown in the drawing and in order to insure a proper contact between the sleeve and the plunger a wire 17 is soldered to the inner end of the plunger and to the end closure of the sleeve. As shown in the drawing it will be understood that a suitable insulating plate 18 is interposed between the pedestal 8 and the sleeve 9 so as to avoid charging the pedestal and base.

In order to convey current to the ring 5 the mechanism best illustrated in Fig. 2 is provided and consists of a pair of ears 19 which project upwardly from the base and have pivotally mounted therebetween as at 20 the upstanding arms 21. A pair of laterally extending fingers 22 project outwardly from one side of the arm and journaled between the fingers is a shaft 23 on which the contact roller 24 is mounted. This contact roller is adapted to engage the side face of the ring 5 in order to insure a continuous flow of current into the ring. In order to hold the roller 24 in contact with the ring a compression coil spring 25 is connected to the base and to the arm 21 and it will be seen that the arm will be urged toward the rotating element as will be clearly seen upon reference to the drawing. Mounted in the base is a suitable binding post 26 which is connected to a wire 27 which in turn is soldered or otherwise electrically connected to the standard or arm 21 and it will thus be seen that the arm will be in electrical communication with the binding post.

In use it will be apparent from the foregoing that the shaft 3 is rotated and the ro-

tation of said shaft will cause the disk 4 to rotate thus causing the wheel 13 to alternately engage the contacting and insulating portions of the ring 5. Such action will cause the current passing from the binding post 26 into the binding post 10 to be rapidly interrupted and it will be evident that the frequency may be varied according to the speed of rotation and also according to the number of insulating plates 7 which are inserted in the periphery of the ring. It will also be evident that the roller 24 will be in contact with the ring 5 at all times and the arc tendency of the device will be greatly reduced owing to the rolling contact.

While in the foregoing there has been shown and described the preferred embodiment of this invention, it is to be understood that such changes may be made in the combination and arrangement of parts as will fall within the spirit and scope of the appended claims.

What is claimed is:—

1. In an interrupter, a base, a rotary disk rotatably mounted on the base and provided on its periphery with a plurality of alternate insulating and conductive plates, said plates being connected at their ends by a continuous ring, a sleeve mounted on the base, a rolling contact in one end of the sleeve for engagement with the periphery of the disk, spring means for urging said contact toward the disk to hold the peripheries thereof in continuous engagement, a rolling contact for engagement with the ring, and spring means for urging the last named rolling contact toward the disk, and binding posts connected to both of the contacts, as and for the purpose specified.

2. In an interrupter, a base, a disk rotatably mounted on one face of the base, and provided on its periphery with a plurality of alternating insulating and conductive plates, said plates being connected at their inner ends by a continuous ring, a sleeve mounted upon said base and having one end closed and its other open end in close proximity to the periphery of the disk, a rolling contact member rotatably mounted in the open end of the disk, its periphery adapted to have engagement with the periphery of the disk, spring means for urging said contact toward the disk to hold the peripheries thereof in continuous engagement, a rolling contact for engagement with the ring, spring means for urging the last named rolling contact toward the disk, and binding posts carried by the sleeve and base, said binding posts being connected to both of the contacts.

3. In an interrupter, standards mounted upon one face of the base, a disk rotatably mounted on the standards, said disk provided on its periphery with an alternating conductive and insulating plate, a pedestal on the base, a sleeve mounted on the pedestal, said sleeve having one end opened and its opposite end closed, a rolling contact rotatably mounted in the opened end of the sleeve and adapted for engagement with the periphery of the disk, a ring connecting the inner ends of the conductive plates together, pivoted arms mounted beside the rotating disk, outwardly extending fingers formed on said arms, a rolling contact rotatably mounted between the fingers, said contact being adapted to engage the ring of the disk, and spring means to urge said contact toward said disk to hold the rolling contact in engagement with the rings.

In testimony whereof I affix my signature in presence of two witnesses.

STUART SANDREUTER.

Witnesses:
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