

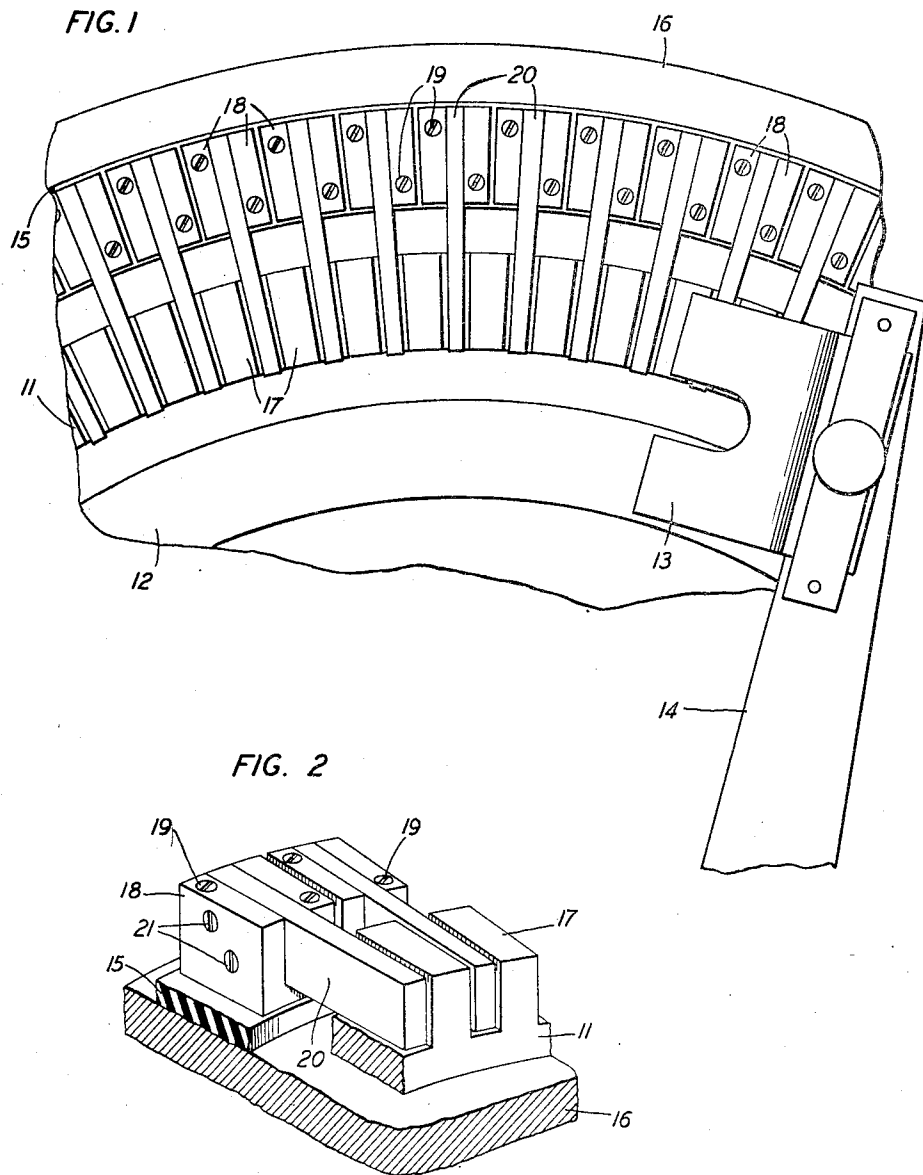
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TELEGRAPH SIGNAL DISTRIBUTING DEVICE

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TELEGRAPH SIGNAL DISTRIBUTING DEVICE

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This invention relates to impulse transmitting devices and more particularly to rotary distributing devices employed in high speed signaling systems.

5 An object of the invention is to increase the number of transmission channels that can be employed over a rotary distributor of a given diameter.

Heretofore, rotary distributors employed 10 in multiplex telegraph systems have been equipped with rings comprised of segments, some of which were detachable and others formed as integral parts of the rings. The segments of the latter group may be made to 15 have an angular length as small as $\frac{1}{32}$ " but those which are detachable, in order that they might be conveniently handled, are made considerably longer, say approximately $\frac{1}{4}$ " for mechanical reasons. It is obvious 20 then that the angular length of detachable segments is an important factor in determining the diameter of a distributor.

According to the present invention, the angular length of a detachable segment, 25 which may be so reduced that the resistance of the segment to vibration when engaging a contacting brush, and the duration of the transmitted or distributed impulse are the only factors which determine the number of 30 segments that may be arranged in a ring of a given diameter. The duration of the transmitted impulse may be made very short when the segments are used in conjunction with storing vacuum tubes. The detachable seg- 35 ments may have angular length of about $\frac{1}{16}$ " and still have sufficient stiffness to resist vibration. These segments consist of narrow conducting bars respectively extending at one end between narrow segments formed 40 integrally with a ring in engageable relation with a contacting brush and at the other end to supporting blocks mounted on an extra ring not in engagement with the brush. The bars are insulated, preferably by air, 45 from the segments integrally formed and may be detachably or fixedly mounted, as desired, on the supporting blocks. In this way, a segmented ring of a given diameter may be made up of detachable segments of 50 about $\frac{1}{16}$ " in angular length and of segments,

integrally formed, of about $\frac{1}{32}$ " in angular length.

A feature of the invention is to provide a ring arranged to transmit over a greater number of channels than could be had if the detachable segments were $\frac{1}{4}$ " in length as 55 heretofore required.

Another feature is to provide a ring arranged to transmit over a given number of channels and made of considerably smaller 60 diameter than one in which the detachable segments were $\frac{1}{4}$ " in diameter even though an extra ring is required.

Other objects and features will be found in the following description and appended 65 claims when taken in conjunction with the accompanying drawings of which:

Fig. 1 illustrates a fragmentary plan view of a rotary distributor equipped with segments arranged in accordance with the present invention; and 70

Fig. 2 shows a perspective view of the manner in which the segments of short angular lengths are mounted on the distributor.

Referring to Fig. 1 fragmentary ring 11 75 and continuous ring 12 are shown in an engageable relation with brush 13 which is fixedly mounted on the rotating brush arm 14. Concentrically arranged with rings 11 and 12 is a third ring 15. The three rings 80 are mounted on the distributor head 16 which is electrically connected to ground. Ring 15 is of insulative material, ring 12 is insulatedly mounted and ring 11 is mounted directly on the distributor head 16. The segments 17 85 of ring 11 are formed integrally with the ring and may be made to have an angular length of about $\frac{1}{32}$ ". The third ring 15 is provided with segments 18 detachably mounted thereon by means of screws 19. Segments 90 18 support the segment bars 20 which may be securely fastened at one end to the supporting segments 18, the other end extending between the segments 17 of ring 11. The segment bars 20 are positioned with respect 95 to segments 17 to be insulated therefrom by air gaps and from ring 11 by air gaps to form with the segments 17 a substantially continuous metallic path for brush 13, the air gap 100 provided on both sides of each bar being

narrow. In this way the segments formed by bars 20 may be made to have an angular length of about $\frac{1}{16}$ " which is sufficient to resist being set into vibration when the segments are engaged by the rotating brush.

Fig. 2 shows one way of mounting the segment bars 20 whereby the bars are held firmly in slots provided in the supporting segments 18 by means of screws 21. However, other means of mounting bars 20 may be employed, as for example, it is obvious that the screws 21 may be eliminated by wedging the bars in the slots. It will be noted in this figure that the air gap entirely surrounds each of the bars 20 at that portion which lies within the ring 11.

What is claimed is:

1. A rotary device for distributing electrical impulses comprising a pair of rings, a brush for interconnecting said rings, segments integrally formed on one of said rings, a third ring, and segments on said third ring, a conducting element being securely fastened to each of the segments on said third ring and projecting insulatively between the adjacent segments on the first mentioned segmented ring to be in engageable relation with said brush.

2. A rotary device for distributing electrical impulses, comprising a pair of rings, a brush for interconnecting said rings, segments integrally formed on one of said rings, a third ring, segments on said third ring and a conducting element securely fastened to each of said segments on said third ring and projected between adjacent segments of the first mentioned segmented ring, said elements being in engageable relation with said brush and insulated by air gaps from the segments of the first mentioned segmented ring.

3. A rotary device in accordance with claim 2 wherein each of the conducting elements within the portion in engageable relation with the brush is of sufficient angular length as compared to its radial length as not to vibrate when engaged by the brush.

In witness whereof, I hereunto subscribe my name this 26th day of September, 1930.

WILLIAM A. KNOOP.

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