June 7, 1932. G. TAUCHMANN 1,862,206

RING WINDING MACHINE

Filed May 12, 1928 2 Sheets-Sheet 1

Fig. 1

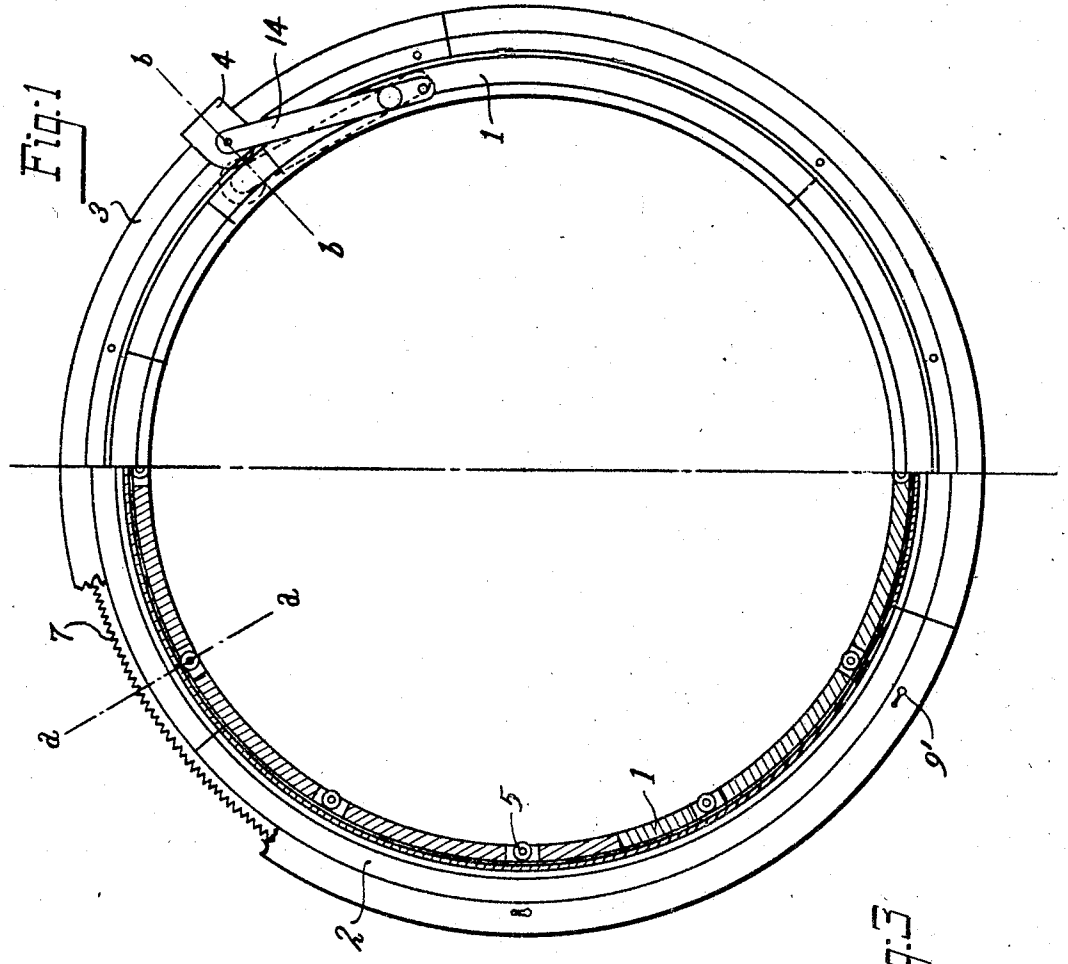



Fig. 2

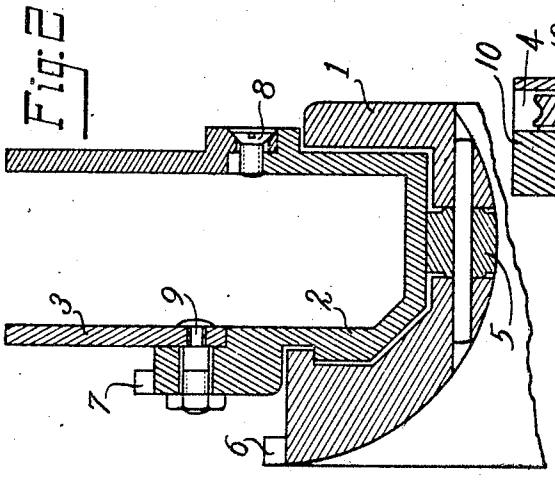
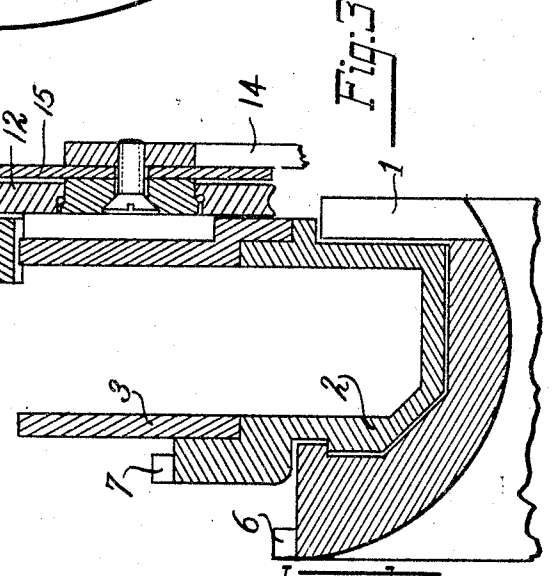



Fig. 3




Inventor
Georg Tauchmann

Wm. Watts Owen. Atty.

June 7, 1932. G. TAUCHMANN 1,862,206

RING WINDING MACHINE

Filed May 12, 1928 2 Sheets-Sheet 2

Fig. 4

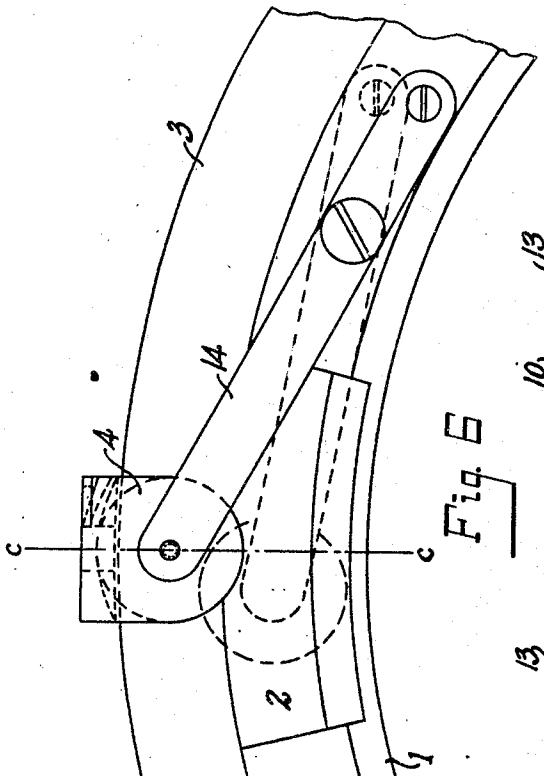



Fig. 6

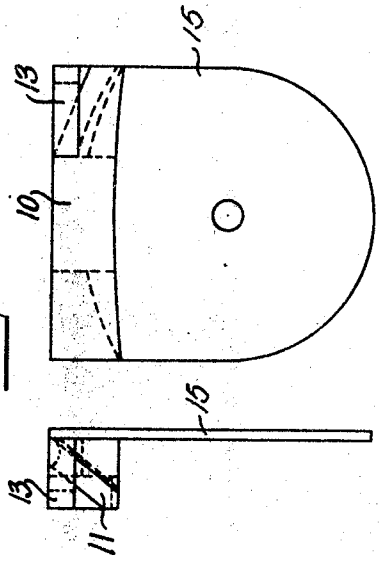
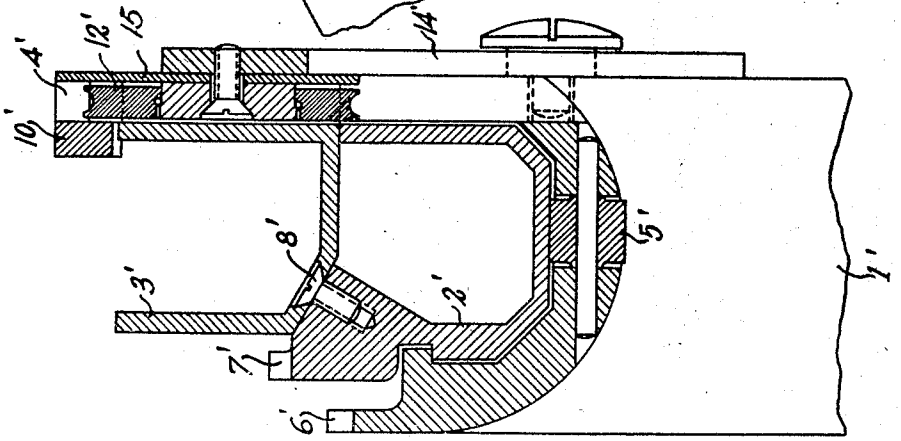



Fig. 5




Inventor
Georg Tauchmann
Wm. Walter Dawson, Atty.

Patented June 7, 1932 1,862,206

# UNITED STATES PATENT OFFICE

GEORG TAUCHMANN, OF BERLIN-SCHONEBERG, GERMANY, ASSIGNOR TO TELEPHON-APPARAT FABRIK E. ZWIETUSCH AND COMPANY, OF CHARLOTTENBURG, BERLIN, GERMANY

## RING WINDING MACHINE

Application filed May 12, 1928, Serial No. 277,186, and in Germany May 23, 1927.

The present invention relates to ring winding machines known per se comprising a radially divided winding ring and a similarly divided storage ring; it serves to wind ring-shaped closed bodies. For this purpose, both the storage and the winding ring are passed through the body to be wound and are then provided with winding material. By rotating the winding ring, the material is passed over to the body to be wound. In order to find room on the winding ring for the entire relatively large quantity of wire required for winding one article, this ring generally will have a larger diameter than the ring to be wound; hence the center of the latter must be placed eccentrically to that of the winding ring. In order to avoid forming a loop thereby with the free end of the wire, the storage and winding rings are separately driven and are mounted on rollers so that they can rotate with respect to each other.

The cross section of the storage ring plus that of the winding ring is limited by the free cross section of the ring already wound. For a given quantity of wire, the cross section of the storage ring can be reduced by increasing its diameter, but for technical reasons this can only be done within certain limits. With increasing quantity of wire and reduced diameter of the ring to be wound, there is greater difficulty in finding room for all the wire required for one winding. This renders it necessary to repeatedly wind wire (on the storage ring).

The present invention consists in a means for overcoming this difficulty by considerably increasing the carrying capacity of the storage ring. In addition to the usual storage, an auxiliary storage ring made in two or more parts is provided, which can be taken off after the wire on it has been exhausted; thus the cross section of the storage ring is reduced as the clear diameter of the ring to be wound becomes smaller. The winding operation is thereby not interrupted.

The drawings show one construction of a winding ring with storage ring as an example of the invention.

Fig. 1 shows the winding ring 1 as well as the storage ring 2 in section and elevation, the auxiliary storage ring 3 in place; it also shows the wire guide 4.

Fig. 2 is an enlarged section on the line *a*—*a* in Fig. 1.

Fig. 3 is an enlarged section on the line *b*—*b* in Fig. 1.

Fig. 4 shows on a larger scale a portion of the winding ring with the thread guide.

Fig. 5 is another construction of the auxiliary storage ring in sectional view on the line *c*—*c* in Fig. 4.

Fig. 6 shows the wire guide alone without roller.

The ring winding machine shown in the drawings comprises the winding ring 1, the storage ring 2, and the auxiliary storage ring 3, which are divided radially. The radial sections of storage ring 2 may be secured together in any suitable manner, for example, by means of clamps. In order to render the storage ring 2 easily movable on the winding ring 1, the latter is provided with rollers 5, on which the storage ring 2 runs. The winding ring 1 is driven by a gear wheel (not shown), which engages the teeth 6 and a second gear wheel engages the teeth 7 of the storage ring 2. The second storage ring can be fixed to the first by means of screws 8 and 9 and fixing slots 9′; the latter enable the auxiliary storage ring to be quickly assembled. The wire guide 4 is fixed to the winding ring 1; it comprises a plate 15 and a piece 10 fixed thereto. The latter contains the actual wire guide 11 and a hole for the roller 12. A cover plate 13 prevents the wire jumping off the roller. The wire guide 4 and the roller 12 are fixed to a lever 14 or the like, which is moved into the position shown dotted in the Fig. 4 after the auxiliary storage ring has been removed.

A modification of the storage ring with its auxiliary storage ring is that shown in Fig. 5. By reference to Fig. 5 it will be noted that the auxiliary storage ring 3′ is complete in its self. The shape of the storage ring 2′ varies slightly from that of storage ring 2 of Fig. 2 to provide a suitable method of mounting the auxiliary storage ring 3′ by means of screws 8′. The winding ring 1′ has the rollers 5′ and gear teeth 6′ which corre-

spond with rollers 5 and 6 of Fig. 2. The storage ring 2′ has the teeth 7′ which correspond with the teeth 7 of Fig. 2. The wire guide comprising the lever 14′, the plate 15′, the roller 12′, and the piece 10′ affixed to the plate 15′, is identical with the one shown in the other figures.

What is claimed is:

1. In a winding machine for winding closed ring-shaped bodies, a winding ring, a material storage ring movably mounted about the periphery of said winding ring, and an auxiliary storage ring mounted on said material storage ring to form a larger capacity material carrier, said rings inserted in the open part of the body to be wound and said auxiliary ring removable from the material storage ring to decrease the size of the material carrier as the open space of the body being wound decreases without severing the material.

2. In a ring winding machine, a winding ring, a sectional material storage ring movably mounted about the periphery of said winding ring, said storage ring having a guide for carrying the material from the ring mounted on the winding ring, certain sections of the storage ring removable to decrease the size of the storage ring, said guide adjustable to a new position when the sections are removed to guide material from the reduced storage ring without severing the material.

In witness whereof, I hereunto subscribe my name this 19th day of April, A. D. 1928.

GEORG TAUCHMANN.