Oct. 16, 1928. 1,687,938

R. McC. JOHNSTONE

METHOD OF PRODUCING COILS OF FLEXIBLE MATERIAL AND COILS AND CORE MEMBERS RELATING TO SAME

Filed Nov. 22, 1926 2 Sheets-Sheet 1

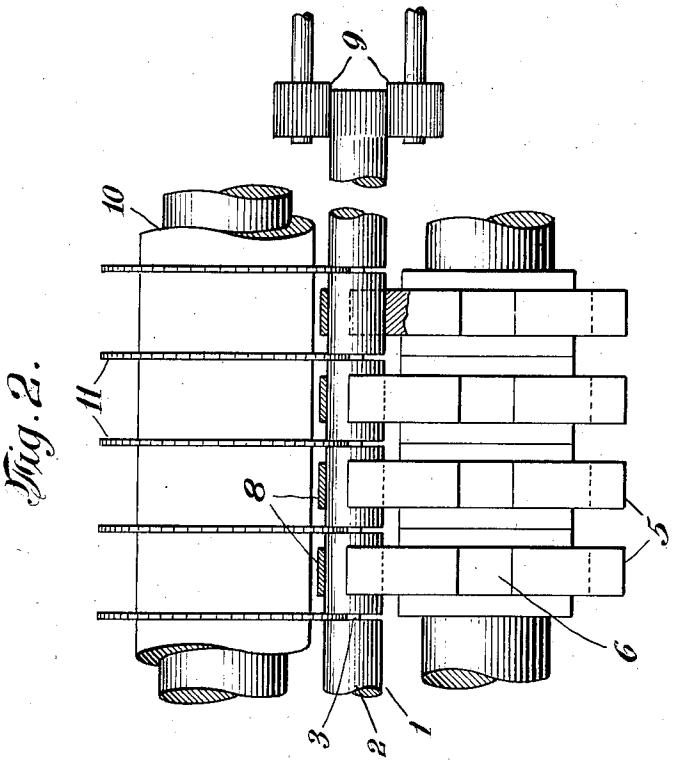


Fig. 2.

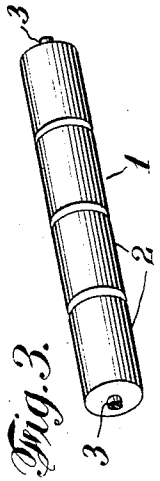


Fig. 3.

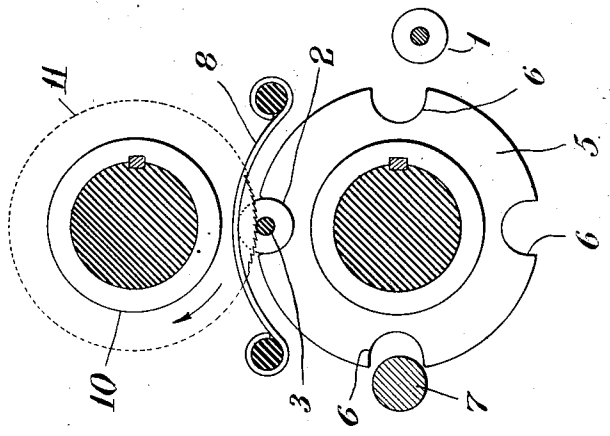


Fig. 1.

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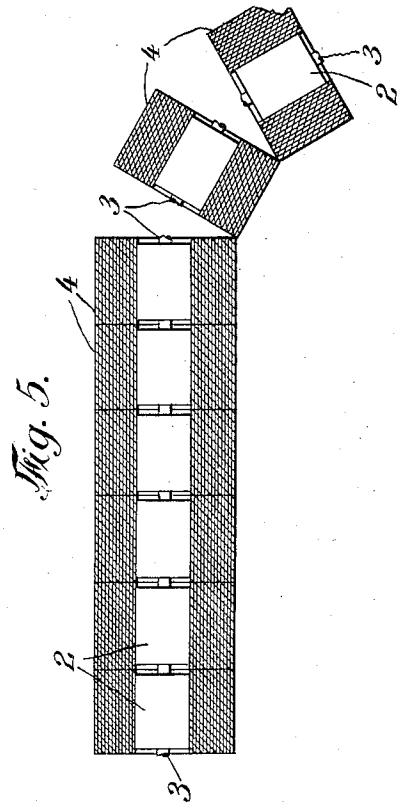


Fig. 5.

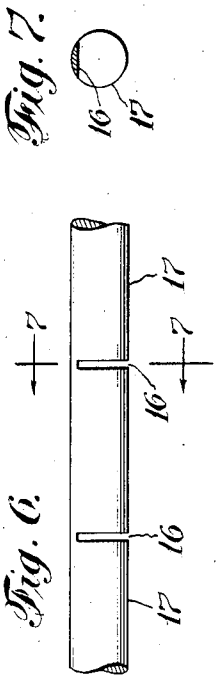


Fig. 6.

Fig. 7.

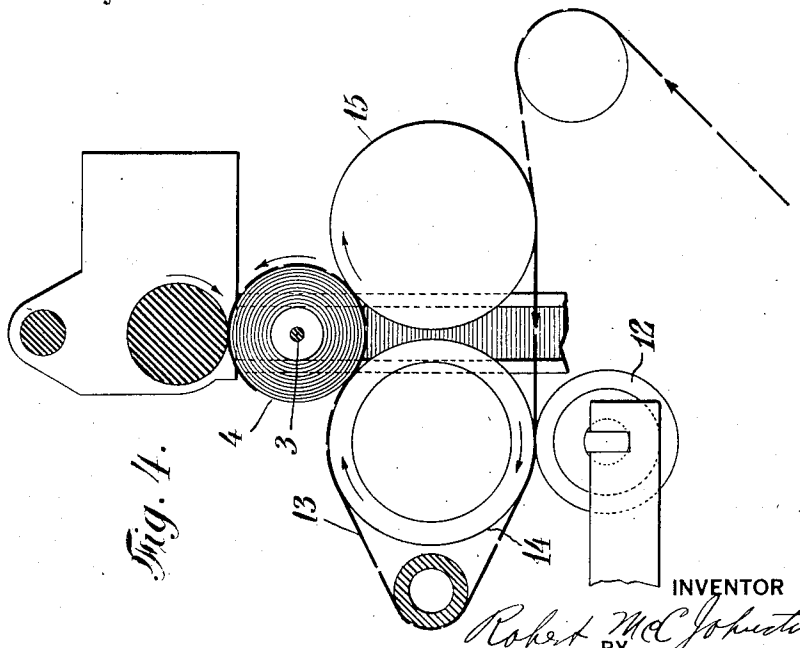


Fig. 4.

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UNITED STATES PATENT OFFICE.

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METHOD OF PRODUCING COILS OF FLEXIBLE MATERIAL AND COILS AND CORE MEMBERS RELATING TO SAME.

Application filed November 22, 1926. Serial No. 150,124.

This invention relates generally to a method of producing coils of flexible material, to the coils thus produced and to the core member for supporting the coils.

In the art of producing coils of flexible material it is now the custom to provide individual cores, usually of card-board tubing or the like. It will be appreciated that, when slitting material into a great many sections such as a 42" wide web into forty-two sections, the threading of the material with respect to these cores presents quite a problem and renders interweaving of adjacent coils extremely likely. It is the main object and feature of this invention to render the threading of the web more easy of accomplishment and the separation of the coils more certain.

In the accompanying drawings the invention is disclosed in a concrete and preferred form in which:

Fig. 1 is an end view, partly in section, of one form of device to produce reduced portions, in a core member.

Fig. 2 is a side view of Fig. 1, partly in section.

Fig. 3 is a perspective view of a core member made according to my invention.

Fig. 4 is a somewhat diagrammatic view of a typical slitting and winding machine that may be used in connection with my invention.

Fig. 5 is a longitudinal sectional view of a core member with coils of flexible material in position thereon, some of the coils being shown separated from the coil group.

Fig. 6 is a view in side elevation of a modified form of core member that may be employed in the practice of the invention.

Fig. 7 is a cross-sectional view substantially on the plane of line 7—7 of Fig. 6.

1 indicates a core member having unreduced portions 2 and reduced portions 3, the latter at points in spaced relation corresponding to the width of sections of flexible material to be wound on the unreduced portions. This member may be made in any suitable way as by molding or otherwise and may be of any suitable material. Preferably it is made of wood and the reduced portions are produced by partly severing the core member in line with the slitters of the slitting machine for the web of flexible material. When such a core member is inserted in a winding machine, and sections of flexible material are wound on the unreduced portions of such core member the product shown in Fig. 5 will be produced, and when it is thereafter desired to separate coils 4 it is only necessary to complete the severing operation of the core member as by snapping off the thin stems or reduced portions of the core member.

In Figs. 1 and 2 is shown a device for partly severing the core member. As here shown 5 indicates a work-holder in which are pockets 6 to receive solid round rods 7 and this work-holder is turned until a rod is brought under spring 8 and in between knurled rollers 9. 10 is a rotating carrier having a plurality of saw blades 11 that are spaced similar to the slitting members of the slitting and winding machine in which the core member is to be used, and when the rod is brought in under spring 8 the saws are brought into action to partly sever the rod at a plurality of points, the knurled rollers rotating the rod during the sawing operation. When the sawing operation is completed work-holder 5 is turned thereby discharging a core member as shown at the right-hand side of Fig. 1 and bringing a new rod under the saws.

The core member thus produced is inserted into a slitting and winding machine as shown in Fig. 4, care being taken that the reduced portions are in alinement with the slitting members one of which is shown at 12, and sections of flexible material 13 then being wound simultaneously on the unreduced portions of the core. During this operation the core may be supported by winding drums 14 and 15. After the winding operation is completed the product shown in Fig. 5 is obtained, and when it is desired to separate the coils it is only necessary to snap off the reduced portions.

In Figs. 6 and 7 is shown a modified form of core member. Here slots 16 are cut in the rods, connecting portions 17 being left at one side of the periphery instead of centrally of the rod.

I claim:

1. The method of producing wound coils of material which consists in: forming a core member with reduced portions at points in spaced relation corresponding to the width of the coils to be produced, winding a plurality of sections of flexible material on unre-

duced portions of said core member, and then severing the reduced portions aforesaid to produce individual coils.

2. The method of producing wound coils of material which consists in: forming reduced portions on a core member by partly severing it at points in spaced relation corresponding to the width of the coils to be produced, winding a plurality of sections of flexible material simultaneously on unreduced portions of the core member, and then completing the severing operation of the core member between the coils.

3. As a new article of manufacture a core member having unreduced portions and partly severed portions, the latter at points in spaced relation corresponding to the width of sections of flexible material to be wound on the unreduced portions of the core member.

4. The combination with a core member having unreduced portions and partly severed portions, the latter at points in spaced relation corresponding to the width of sections of flexible material to be wound on the unreduced portions of the core member, of sections of flexible material wound into coil formation on the unreduced portions of the core member.

Signed at New York city, in the borough of Brooklyn, county of Kings, and State of New York, this 9 day of November, 1926.

ROBERT McC. JOHNSTONE.