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2,193,158

RIBBON SPOOL

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Fig. 1

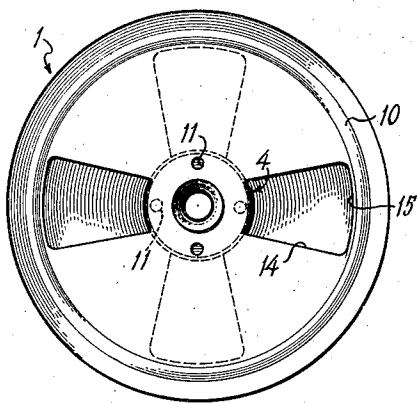


Fig. 2

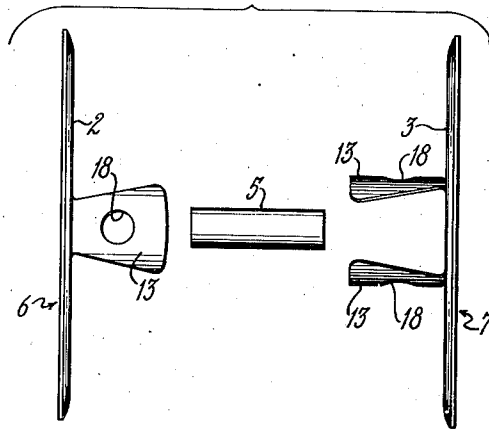


Fig. 3

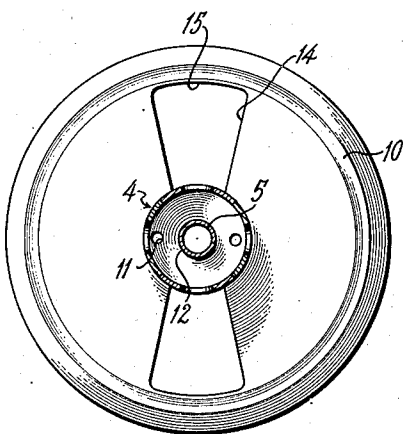
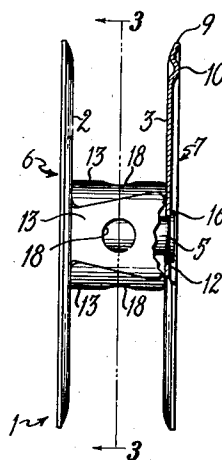


Fig. 4



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RIBBON SPOOL

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3 Claims. (Cl. 242—123)

This invention relates to ribbon spools for type-writing and other recording machines.

The principal objects of the invention are to improve the construction and reduce the cost of manufacture of ribbon spools, and to produce a spool which will meet all the requirements in such machines and which may be manufactured mainly or wholly of sheet metal by inexpensive operations with a reduction in the number of parts as compared with prior constructions.

With the above and other objects in view, the invention consists in a ribbon spool embodying the novel and improved features hereinafter described and particularly pointed out in the claims, the advantages of which will be readily understood and appreciated by those skilled in the art.

The invention will be clearly understood from the accompanying drawing illustrating a ribbon spool embodying the invention in its preferred form and the following detailed description of the construction therein shown.

In the drawing:

Figure 1 is a view in side elevation illustrating a spool embodying the invention;

Figure 2 is an exploded view in front elevation illustrating the several parts of the spool;

Figure 3 is a sectional view of the spool taken substantially on the line 3—3 of Figure 4; and

Figure 4 is a view in front elevation partly in section of the spool.

In the illustrated embodiment of the invention the spool is made entirely of sheet metal.

The spool indicated as a whole at 1, is provided with two side flanges 2 and 3 to confine the ribbon, with a central barrel or hub 4 upon which the ribbon is wound and with a bushing 5 which forms a bearing for the spool. The spool is made up of the members 6 and 7 and the bushing 5 which secures the said members together in assembled relation. Upon the members 6 and 7 respectively are formed the side flanges and projections constituting parts of the barrel.

The members 6 and 7 are each made from a strip of sheet metal cut and stamped or died into the desired shape. In the construction shown, the side flanges are each made with a substantially flat body portion, with a lateral bend 9 at the outer margin and with an annular rib or bead 10 adjacent the said margin. The side flanges are each provided with openings 11 to receive the driving pin of the spool driving mechanism of the typewriter and with a central opening 12 to receive one end of the bushing 5 which secures the members 6 and 7 together.

The barrel is made up of interfitting projec-

tions extending from the sheet metal of the side flanges. As illustrated, each of the members 6 and 7 is formed with two projections 13 generally wedge or sector shaped in outline as shown in Figure 2. These projections are formed by cutting the sheet metal of the side flanges along the lines 14 and 15 to form initially the projections, shaping the same in cross section as shown and bending the metal laterally of the corresponding side flange. The lines 14 are substantially parallel with radii to give a general sector shape to the projections. The incision lines 14 forming each projection are preferably located so that the arc struck from the center of the side flange and embraced by the inner ends of these lines is considerably less than 90°.

With this construction sufficient metal is left connecting the portions of each side flange outside the barrel to the central portion thereof to constitute a strong support for the former portions of the side flange.

The projections 13 are bent into positions substantially perpendicular to a side flange and are given a shape in cross section conforming to the arc of a circle of substantially the same radius as the radius of the proposed barrel. Each of the projections preferably is constructed to form substantially one quarter of the barrel and the projections on one of the members 6 and 7 are complementary to the projections on the other member, each of the projections on one member being arranged to fit accurately between the adjacent side edges of the projections on the other member. The members 6 and 7 are fitted together in substantially the manner shown in Figures 3 and 4 with the projections on one side flange engaging between the projections on the other side flange to form the barrel. The side edges of the projections on one of said members abut against the side edges of the projections on the other member and the ends of the projections on one member engage the side flange on the other member to maintain accurately the spacing of the side flanges.

The members 6 and 7 are secured together in the positions shown in Figures 1, 3 and 4 by means of the tubular thimble or bushing 5. This bushing consists of a section of tubular metal stock cut to the required length. When the members 6 and 7 are fitted together in the manner above described, this bushing is inserted through the openings 12 and the ends of the bushing are riveted over the side flanges in the manner indicated at 16 in Figure 4. The members 6 and 7 are locked together by the interfitting engage-

ment of the projections 13 and by the bushing 5 thereby forming a strong and rigid structure.

The sheet metal from which the projections 13 are produced is punched to form apertures 18 in the barrel for receiving the hook attached to the end of the ribbon to secure said end to the spool.

The openings in the side flanges formed by bending the projections 13 into position, enable the ribbon on the spool to be kept visible at all times.

The ribbon spool above-described is composed of three parts only, namely the members 6 and 7 and the bushing 5. The members 6 and 7 may be rapidly and cheaply produced from sheet metal stock by cutting and stamping or dieing operations and the bushing 5 consists of ordinary tubular metal stock of any desired material. The members 6 and 7 and the bushing 5 may be assembled and secured together by simple operations. The spool structure has the strength and rigidity to meet all requirements in recording machines and may be manufactured at a considerably reduced cost as compared with prior constructions.

It is to be understood that the invention is not limited to the particular construction and arrangement of parts of the illustrated embodiment of the invention but that the invention may be embodied in other forms within the scope of the claims.

Having explained the nature and object of the invention and having specifically described a construction embodying the invention in its preferred form, what is claimed is:

1. A ribbon spool comprising members made of sheet metal shaped to produce side flanges and interlocking projections stamped from the

sheet metal of the side flanges, wider at their portions remote from the corresponding side flanges and interfitting to form a complete hub portion and having their ends in engagement with the inner faces of the respective side flanges to space the same and a tubular bearing member engaging in central openings in the side flanges and riveted over the same to hold said members together.

2. A ribbon spool comprising opposed members made of sheet metal and having side flanges formed thereon and interfitting projections stamped from the sheet metal of the side flanges, extending laterally from said side flanges to form a barrel and having their edges in interlocking engagement, the projections being shaped to hold, by their contact, said members from relative movement in directions axially of the spool to carry the side flanges away from each other and having their ends in engagement with the inner faces of the respective flanges to space the same and a central tubular metallic bushing securing the said members together and forming a bearing portion for the spool.

3. A ribbon spool comprising two members made of sheet metal shaped to produce side flanges and interlocking complementary sector-shaped projections wider at their portions remote from the corresponding side flange stamped from the sheet metal of the respective side flanges, extending from the side flanges in interfitting relation and having their edges in engagement and their ends in contact respectively with the inner faces of the opposed side flanges and means independent of the projections to secure the two members together.

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