

Nov. 13, 1951

J. SALKIN
SPOOL WITH REMOVABLE HEAD
Filed Oct. 4, 1949

2,575,131

Fig. 1.

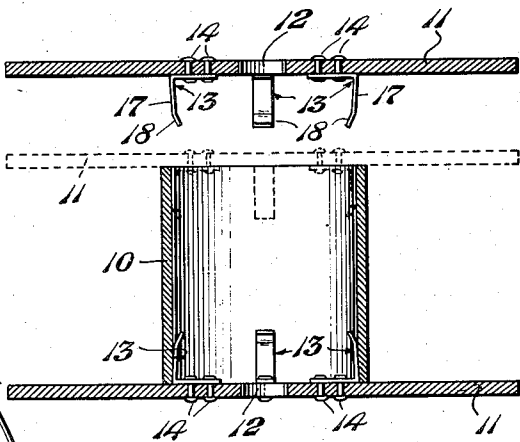
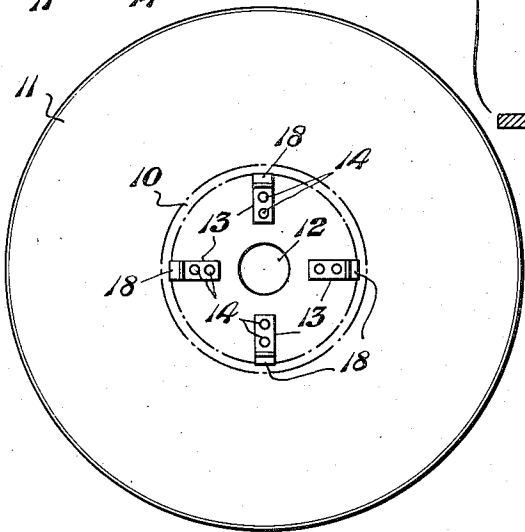
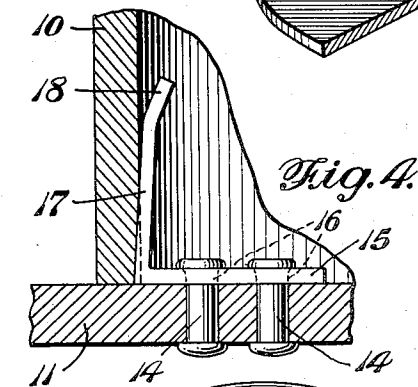
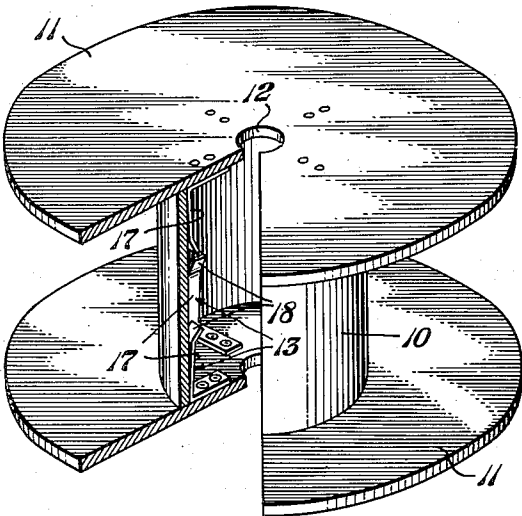


Fig. 2.

Inventor
Jerome Salkin,

By
Flocks and Simon

ATTORNEYS

UNITED STATES PATENT OFFICE

2,575,131

SPOOL WITH REMOVABLE HEAD

Jerome Salkin, Odenton, Md., assignor to The
National Plastic Products Company, Odenton,
Md., a corporation of Maryland

Application October 4, 1949; Serial No. 119,504

6 Claims. (Cl. 242-124)

1

This invention relates to improvements in reels or spools and more particularly to the provision of means for detachably securing together a barrel or core and the end flanges of a reel or spool.

It is an object of the present invention to provide a reel or spool with detachable flanges that may be readily attached or detached from the barrel or core thereof.

It is a further object of the invention to provide flanges for a reel or spool that can be readily attached or detached from the barrel thereof and used again with another core.

It is a still further object of the invention to provide prongs attached to the flanges of a reel or spool to permit attachment and detachment of the flanges to the core of a spool or reel.

Other objects and the nature and advantages of the instant invention will be apparent from the following description taken in conjunction with the accompanying drawings, in which:

Fig. 1 is a perspective view of an assembled spool, partly cut away to better illustrate the invention;

Fig. 2 is a vertical "exploded" sectional view illustrating the assembly;

Fig. 3 is an end view in elevation of one of the end flanges; and

Fig. 4 is an enlarged fragmentary sectional view illustrating the assembly.

Spools of the type herein disclosed are intended primarily for use in factories and serve as temporary holders for narrow fabrics, wire, belting, window screen spline, yarn, and the like, in the factory, or for shipment, as the case may be. In the past, it has been customary to ship the material from the supplier to the consumer wound on a large spool or reel. When the material was used up, the large spool was returned. There are many disadvantages attending this method of operation. In the first place, spools require a relatively large capital investment on the part of the supplier, and are subject to depreciation and damage in shipment. In addition, when the material is shipped wound on spools, transportation charges must be paid on the spool as well as on the material; and if the spool is to be returned to its starting point, additional transportation charges are incurred.

Using the present invention, namely a spool or reel with detachable flanges, the spool or reel is supplied only once to the consumer. Thereafter, the material is shipped wound onto a disposable core, and the consumer attaches the same flanges to each core received. When the

2

material on the core has been used up, the flanges are removed and placed on a new core, and the old core, which may be inexpensive, is disposed of.

In carrying out the several features of the invention, the present applicant has devised a novel and improved means for securing the flanges to the end of the tubular barrel or core which permits the assembly of the spool at any time into a rigidly complete whole merely by the operation of pushing or driving the end flanges into place on the ends of the barrel or core. This device comprises broadly the securing of a plurality of attaching or uniting members to each flange which are so disposed that they will engage the inner surface of the barrel or core when pushed or driven therein so as to rigidly unite the flange to the core.

Referring more specifically to the drawing which illustrates a spool embodying the several features of the present invention, a barrel or core is indicated at 10, and the flanges of the spool at 11. The barrel or core is preferably constructed of some light and inexpensive fibrous material such as paper or cardboard. The end flanges may be made of any suitable material such as wood, metal, plastic, cardboard or the like, and each flange is provided with a small hole 12 at the center. A plurality of metallic members 13 are attached to each end flange 11 by means of rivets 14. The members 13 may be attached to the flanges by any other suitable means such as by bolts, welding, and the like. The members 13 are made of spring metal and each comprises a flat bottom portion 15 provided with rivet holes 16, and a prong 17 bent to an angle of slightly less than 90° to the bottom portion 15. The upper end 18 of the prongs 17 may be bent inwardly slightly from the side portion. A bend of approximately 30° is shown in the drawings, this angle being sufficient so that the outer ends of the prongs will not engage the inner wall of the core upon assembly. The metallic members 13 are arranged on the flange so that the approximately 90° bends of the members lie on the periphery of a circle of a diameter slightly greater than the inner diameter of the core 10. Thus, a circle drawn to include points on the prongs about halfway between the flange and the outer ends 18 of the prongs is approximately equal to the inner diameter of the core. Upon inserting the prongs on the flange into the core, the prongs will extend into the core for a distance of approximately one-half their length. Upon driv-

ing the end flange further into the core, the prongs will be sprung inwards slightly and will also dig into the fibrous core, so that when the end flange is flush with the core, a tight contact has been made between the clips and the core to give a rigid unitary structure. This inward movement of the prongs is facilitated by the resilient character of the fibrous core, the inner surface of which will readily yield to permit the passage of the prongs without in any way disturbing the shape of its outer surface. Any tendency of the core to rotate with respect to the flanges is arrested by the digging-in action of the prongs.

After the material wound on the core has been used, the end flanges may be removed from the empty core. The metallic members will spring back into their original position, and the end flanges may then be inserted into a loaded core to form a spool therewith.

The number of metallic members provided, and their size, will depend upon the size and weight of the core and material used. In the drawings, four metallic members 13 are shown on each flange equally spaced around the center hole 12, although in certain cases three members, or more than four can be used.

With the construction and arrangement of parts above described and illustrated, it will readily be seen that a simple yet sturdy spool is obtained which required only the very simple operation of driving the flange into the end of the core for assembly of the parts, and when once in place provides a rigid sturdy unit of great strength that may also be readily disassembled into the original parts when desired.

It will be obvious to those skilled in the art that various changes may be made without departing from the spirit of the invention and therefore the invention is not limited to what is shown in the drawings and described in the specification but only as indicated in the appended claims.

I claim:

1. A spool having in combination with a core of fibrous or similar material, a flange unit comprising a flange and a plurality of metallic members rigidly secured thereto having prongs projecting inwardly from the flange towards the axis of the spool at an angle slightly less than 90° to the flange, said metallic members being arranged on said flange so that the base of the prongs are arranged on the periphery of a circle of a diameter slightly greater than the inner diameter of the core, said prongs adapted for biting engagement at their bases with the inner wall of the core upon assembly to obtain rigid assembly of the flange and the core.

2. A spool having in combination with a core of fibrous or similar material, a flange unit comprising a flange and a plurality of metallic members rigidly secured thereto, said metallic members being bent so as to include an angle of slightly less than 90°, said metallic members being arranged on the flange so that the bend in each member coincides with the periphery of a circle of a diameter slightly greater than the inner diameter of the core, said members adapted for biting engagement at their bases with the inner wall of the core upon assembly to obtain a rigid assembly of the flange and the core.

3. A spool having in combination with a core of fibrous or similar material, a flange unit comprising a flange and a plurality of metallic members, each metallic member comprising a flat

strip of spring metal bent once near the middle thereof so as to include an angle of slightly less than 90° and bent a second time near an end thereof through an angle of approximately 30°, the flat portion of each metallic member being rigidly secured to the inner face of the flange so that the point at which the first bend occurs on each member is located on the periphery of a circle of a diameter slightly greater than the inner diameter of the core, said first bent portions of the members being adapted to bite into the inner wall of the core upon assembly to obtain a rigid assembly of the flange and the core.

4. A spool having in combination with a core of fibrous or similar material, a flange unit comprising a flange and a plurality of metallic members rigidly secured to the inner face thereof with prongs projecting inwardly therefrom toward the axis of the spool at an angle slightly less than 90° to the flange, said metallic members being peripherally disposed equidistantly from the center of the flange so that the base of each prong is located on the periphery of a circle of a diameter slightly greater than the inner diameter of the core with which it is to be assembled so that the said prongs at their bases will bite into the inner wall of the core when assembled thereto to obtain a rigid assembly of the flange and the core.

5. A detachable flange unit adapted to be readily assembled and disassembled from a core of fibrous or similar material, comprising a flange and a plurality of metallic members rigidly secured thereto having prongs projecting inwardly from the flange toward the axis of the spool at an angle slightly less than 90° to the flange, said metallic members being disposed on said flange so that the base of the prongs are arranged on the periphery of a circle of a diameter slightly greater than the inner diameter of the core with which it is to be assembled, said prongs at their bases being adapted for biting engagement with the inner wall of the said core when so assembled.

6. A detachable flange unit adapted to be readily assembled and disassembled from a core of fibrous or similar material comprising a flange and a plurality of metallic members rigidly secured thereto and projecting inwardly therefrom toward the axis of the spool at angles slightly less than 90°, the end of each projecting portion being bent inward slightly towards the center of the flange, said metallic members being peripherally disposed equidistantly from the center of the flange so that the base of each projecting portion is located on the periphery of a circle of a diameter slightly greater than the inner diameter of the core with which it is to be assembled so that said projecting portions at their bases will bite into the inner wall of the core when so assembled.

JEROME SALKIN.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,542,611	Clark	June 16, 1925
1,919,270	Bird	July 25, 1933
2,314,749	Wilner	Mar. 23, 1943

FOREIGN PATENTS

Number	Country	Date
38,047	Austria	July 26, 1909