J. A. BRANDT.

COLLAPSIBLE SPOOL.

APPLICATION FILED APR. 11, 1917.

1,287,857. Patented Dec. 17, 1918.

FIG. 1

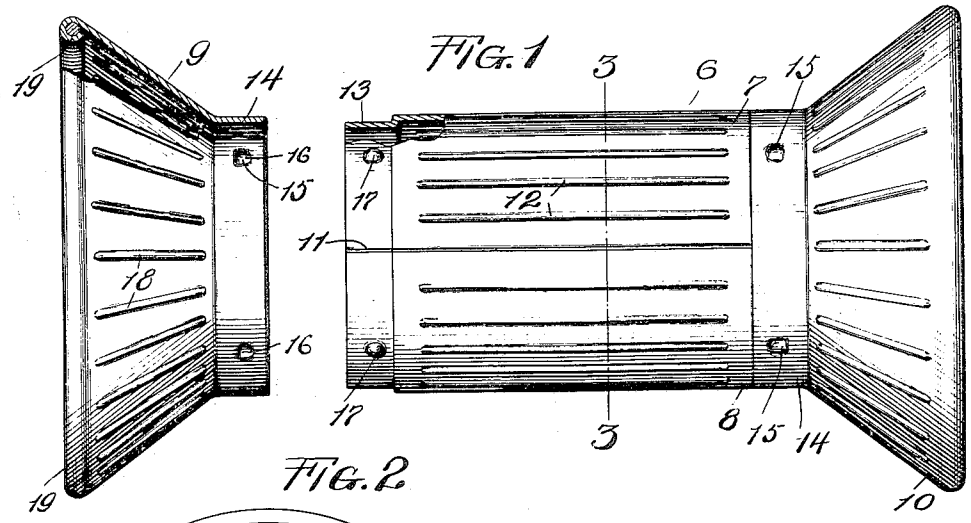


FIG. 2

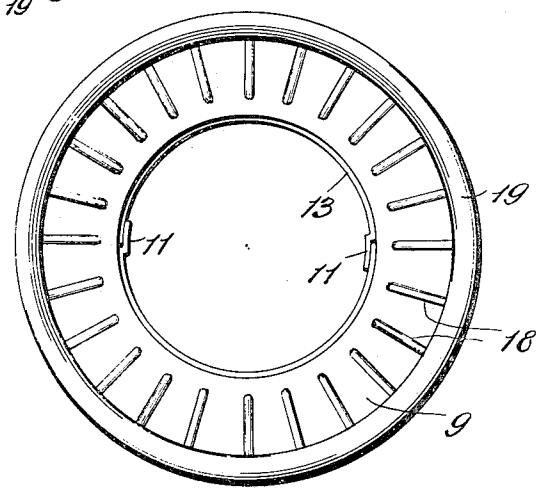


FIG. 3

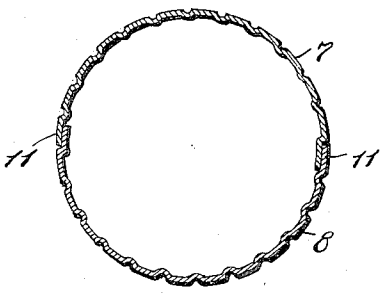


FIG. 5

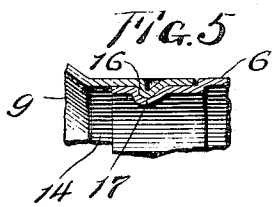
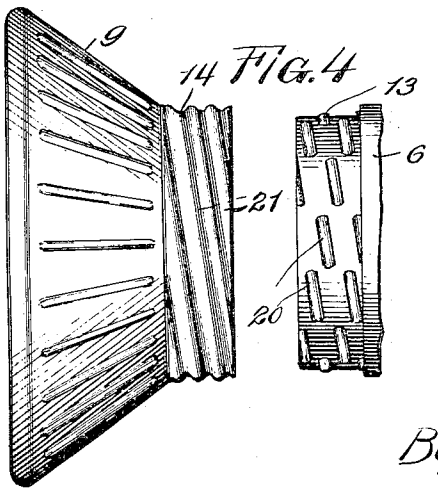


FIG. 4



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COLLAPSIBLE SPOOL.

1,287,857. Specification of Letters Patent. Patented Dec. 17, 1918.

Application filed April 11, 1917. Serial No. 161,340.

To all whom it may concern:

Be it known that I, JOHN ARTHUR BRANDT, a citizen of the United States, and resident of St. Louis, Missouri, have invented certain new and useful Improvements in Collapsible Spools, of which the following is a specification containing a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to improvements in spools.

The object of my invention is to provide a collapsible spool; one that when in use shall be rigid and firm and that may be taken apart quickly and the parts of which will nest into each other exactly or approximately when assembled in large numbers for shipping.

At the present time millions of wooden and metal spools are used but once in the textile and shoe industries, owing to the excessive freight charges because of the bulkiness of the spools. Owing to the conformation of the conventional spool, relatively few can be placed in a given volume, such as a freight car.

After their use the spools are destroyed, because the freight back to the factory to which they must be sent to be rewound with thread, exceeds the cost of the spools. With the increasing cost of wood, pulp and metal, this loss in the shoe industry alone represents hundreds of thousands, if not millions of dollars, annually. My principal object is to eliminate this loss.

Other objects are to design a spool that can be cheaply manufactured by an automatic or semi-automatic machine, and that can only be taken apart after the thread has been removed; one that will remain rigid when put together, with the fewest number of simple parts, light in weight, and interchangeable; one that the spool parts when "knocked down" will nest together making it possible to pile a large number in a minimum volume.

An additional object is to provide a spool, the parts for which may be stamped, drawn or punched out of metal or other material.

With the above purpose in view, my invention consists in certain novel features of construction and arrangements of parts as will be hereinafter more fully described, pointed out in the claims and illustrated by the accompanying drawings in which—

Figure 1 is a fragmental sectional elevation of my device showing one flange detached.

Fig. 2 is an end elevation of my device.

Fig. 3 is a sectional elevation on the line 3—3 of Fig. 1.

Fig. 4 is a fragmental sectional elevation of a modified form of my spool.

Fig. 5 is a fragmental sectional detail on the line 5—5 of Fig. 1.

In the drawings numeral 6 designates a shank formed of two parts 7 and 8; 9 and 10 designate two flanges detachably secured to said shank. The two parts of the shank 6 are held in frictional engagement by the lap joint 11, forming a cylinder when in such position.

12 designates longitudinal flutes on the lateral surface of the shank, 6.

The two ends of the shank 6 are countersunk, an amount equal to the thickness of the material of which it is made as shown at 13. The flanges 9 and 10 are made of one piece of material, preferably metal, stamped and drawn to the proper flange conformation. The collars 14 of the flanges 9 and 10 have their diameters equal to that of the countersunk ends of the shank 6, so that the collar 14 can be slipped over the countersunk portion 13 of the shank 6 in such a manner as to produce a continuity of external surface on the collar 14 and the flange 6. The fit of the collar 14 on to the shank 6 is such as to hold them together frictionally. This frictional engagement has as ancillary means of securing the collar and shank, the snaps 15 which are shown best in Fig. 5. These snaps consist of male and female elements 16 and 17 respectively. The numeral 18 designates flutes on the flanges for the purpose of stiffness, rigidity and strength. 19 designate the curled edges of the flanges. By these means the flanges and shank are quickly detachable and the parts 7 and 8 of the shank 6 are held in engagement when the spool is assembled.

I do not wish to be limited to two parts, as any number of parts could be utilized equally well.

If greater rigidity and fixidity are required between the flange and shank the additional means as shown in my modified

form may be adopted. 20 designates threads on the portion 13 of the shank 6 and 21 designates threads of like pitch on the inner surface of the collar 14.

By means of these threads the flanges may be screwed into the shank until the collar 14 is seated securely in the countersunk portion 13 of the shank 6 and then the snaps 15 may be snapped into position.

When thread or cord is wound on the spool the snaps 15 are covered thereby, making it impossible for the spool to be accidentally disassembled by external contact with the snaps; when the spool is shipped the flanges can be nested into each other, as can also the shanks, making it possible to utilize all the space in the shipping car.

What I claim and mean to secure by Letters Patent is:

1. In a collapsible spool, a hollow cylindrical shank composed of segments, two detachable flanges of the approximate conformation of the frustum of a cone, the segments of said shank detachably fitting into each other along longitudinal axes, said flanges fluted on their lateral surfaces and detachably connected to said shank by the conventional clasp, so as to secure, detachably, the segments of the shank, said shank and said flanges becoming interchangeably detachable only when said spool is empty.

2. In a collapsible spool, a shank, two flanges, and engaging snaps, said snaps so secured to said flanges and said shank as to make the flanges and shank interchangeably detachable. .

3. In a collapsible spool, a hollow cylindrical shank composed of segments, two detachable flanges of the approximate conformation of the frustum of a cone, the segments of said shank detachably fitting into each other along longitudinal axes, said flanges fluted on their lateral surfaces and detachably connected to said shank by the conventional clasp, so as to secure detachably the segments of the shank, said shank and said flanges becoming interchangeably detachable only when said spool is empty.

In testimony whereof, I have signed my name to this specification in presence of two subscribing witnesses.

JOHN ARTHUR BRANDT.

Witnesses:
MINNIE FURMAN,
BENJAMIN WOLF.