

June 27, 1933.

F. S. WRIGHT

1,915,843

COVER, ENVELOPE, OR CONTAINER FOR BALLS OR COPS OF TWINE AND THE LIKE

Filed Jan. 27, 1932

3 Sheets-Sheet 1

Fig. 1.

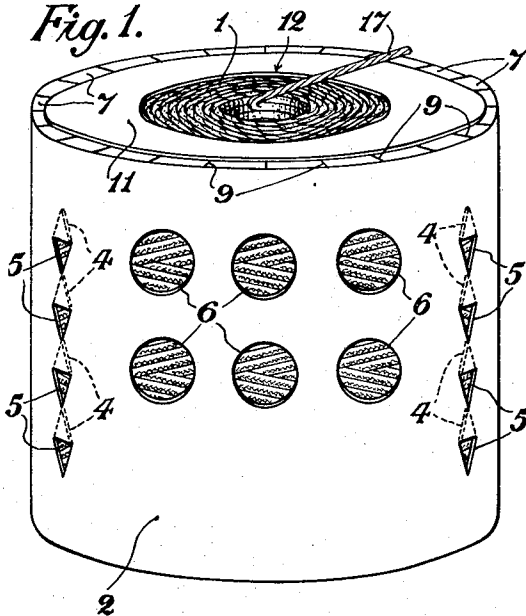


Fig. 2.

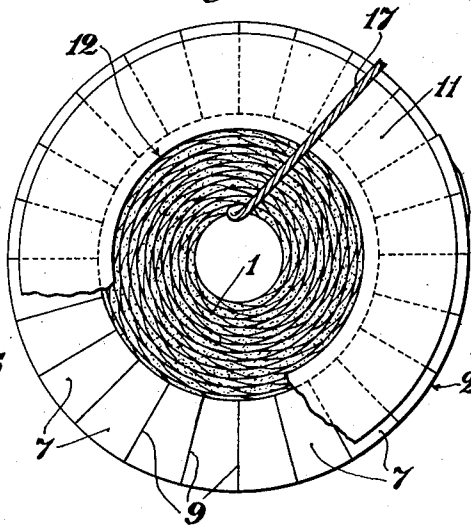


Fig. 3.

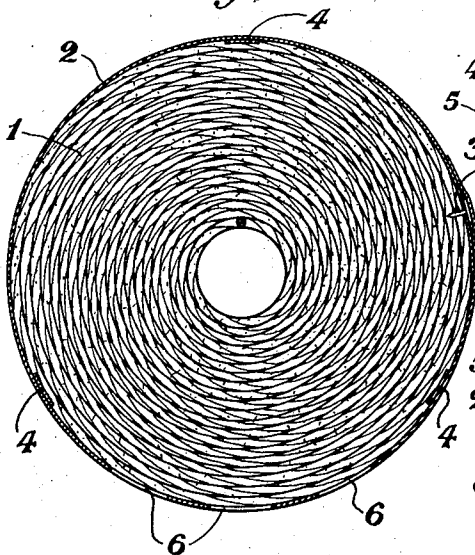
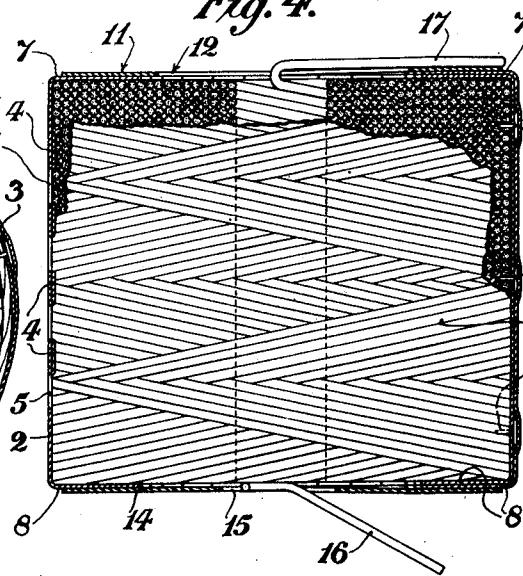


Fig. 4.



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Fig. 5.

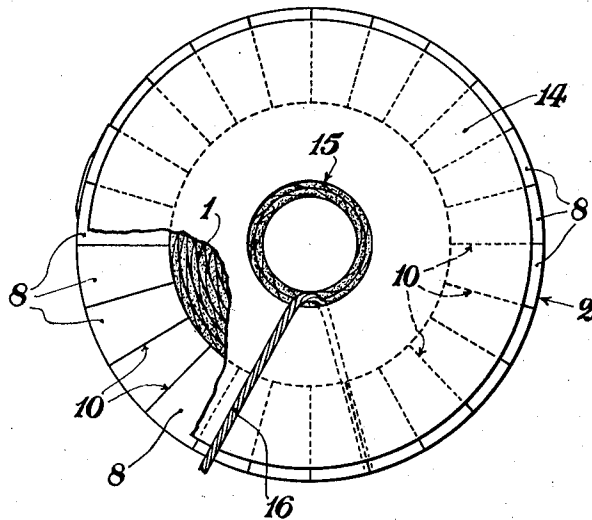


Fig. 6.

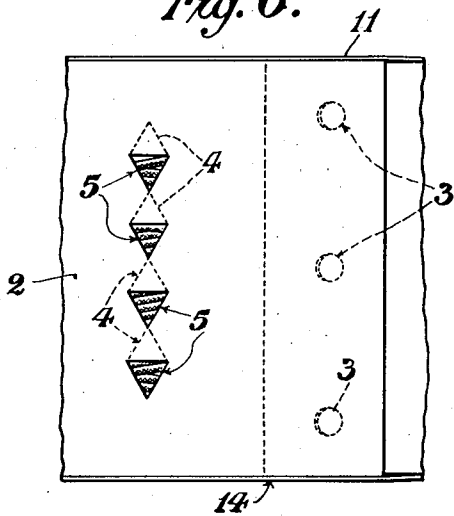
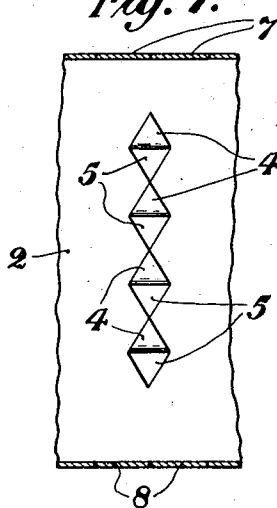


Fig. 7.



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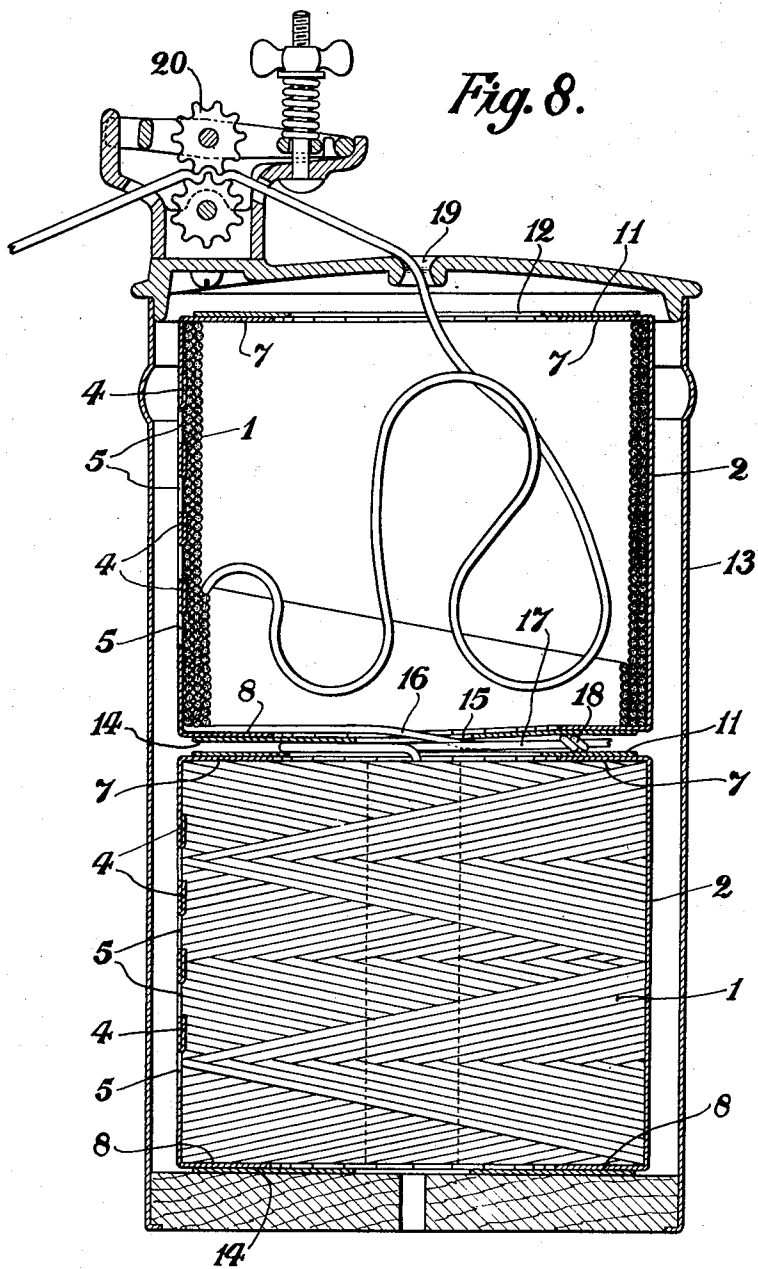
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COVER, ENVELOPE, OR CONTAINER FOR BALLS OR COPS OF TWINE AND THE LIKE

Application filed January 27, 1932, Serial No. 589,089, and in Great Britain March 24, 1931.

This invention relates to balls or cops of twine, yarn and the like, and particularly refers to balls or cops of binder twine such as are used in harvesting machines, the same being wound so as to be adapted to be paid out or unwound from the centre towards the periphery. When such balls or cops are being unwound or run off under tension from the usual receptacle upon the harvesting machine, the twine has a swirling or gyratory motion as it leaves the ball or the like, and if too much tension is applied snarling is liable to occur, and when the outer layer is reached such layer is liable to collapse due partly to the weight of the twine and partly to the snarling action, frequently resulting in an entanglement of the twine and stopping the machine. Further, two balls or the like are usually superimposed within the container, the inner end of the bottom ball being joined to the outer end of the top ball, and before the lower ball or the like is exhausted it is usually withdrawn and placed upon the top of a new ball or the like. In thus lifting out the said lower ball or the like it is liable to collapse.

The principal object of the present invention is to protect a ball or cop of twine, yarn or the like against collapse while being unwound.

Another object is to enable the whole of the twine or the like to be unwound from the centre to the periphery without entanglement occurring due to snarling or to other causes.

Figure 1 of the accompanying drawings represents a perspective view of a ball or cop of binder twine contained within an envelope or wrapper in accordance with this invention.

Figure 2 is a plan thereof, with part of the top annulus of the envelope broken away.

Figure 3 is a horizontal section through the ball and envelope.

Figure 4 is a vertical section.

Figure 5 is an underside plan of the ball and envelope.

Figure 6 is an exterior elevation of a part of the covered ball showing more clearly the

means for positively supporting the outer layers of twine.

Figure 7 is an interior elevation of part of the wall of the wrapper, showing the bent-back tongues for engaging the exterior of the ball.

Figure 8 shows two balls in use in the container of a harvesting machine, the said box and top ball being shown in section, and the said top ball being represented as being nearly unwound.

Referring to the drawings which show the invention in connection with a ball or cop of binder twine for use in a harvesting machine, the said ball or cop 1 may be wound in any suitable manner, such as with a universal winding as shown, or with an ordinary ball winding, or with an inner universal winding and an outer ball or cover winding. This ball or cop 1 is enclosed or surrounded by a close-fitting cylindrical envelope, wrapper or cover made of stout paper, cardboard or fabric, the said envelope comprising a wrapper band or strip 2 which is passed around the ball or cop so that its ends overlap and are suitably secured together, such as by adhesive. The said band or strip carries three or more vertically spaced pins 3 which penetrate the outer layers of the ball or cop, these pins having their heads enclosed between the overlapping ends of the cover band, as shown. At intervals around the said cover band vertical or other rows of spaced triangular or other shaped tongues 4 are punched inwards and bent back towards the inner face of the wrapper band. Triangular apertures 5 are thus left in the wrapper and the bent-back tongues 4 bear against the outer layer of the ball or cop as clearly shown in Figure 4 and thus frictionally support the said layer against collapse while the ball or cop is being unwound. Apertures 6 are also provided to enable the user to ascertain the progress of unwinding of the outer layer.

The upper and lower ends 7, 8, respectively of the wrapper band 2 extend beyond the ends of the ball or cop and are folded down on to the said ends, the said folded-over parts 7, 8, being slit, if necessary, as at 9, 10. At the upper end a ring 11 of paper, cardboard,

metal or other suitable material may be secured by adhesive or otherwise to the folded-over end 7 of the cover band to constitute an inwardly directed annular flange having a large central opening 12 which admits of the insertion of the hand. By means of this flange 11 the bottom ball or cop, when nearly unwound, may be readily lifted out of the receptacle 13 (Figure 8) without disturbing the outer windings, so that refilling of the receptacle can be readily effected without entanglement occurring.

Secured by adhesive or other means to the turned-over lower end 8 of the wrapper 2 is a disc 14 of paper, cardboard, metal or other suitable material, said disc having a small central aperture 15. The outer end 16 of the twine is passed from the periphery across the lower end of the ball above the disc 14 and out through the aperture 15, while the inner end 17 of the said twine is drawn out from the top of the ball through the opening 12 of the ring 11. In use, two balls 1, 1, are superimposed within the container 13 as shown in Figure 8, the outer end 16 of the top ball being tied to the inner end 17 of the bottom ball, so that the knot 18 lies below the disc 14 of the said top ball. The inner end of the top ball is taken out through the aperture 19 in the box 13 and through the tensioning device 20 to the binding mechanism. This Figure 8 illustrates the snarling or swirling action of the twine within the interior of the top ball and shows how the outer layers are supported and prevented from collapsing by the enclosing envelope. As the knot 18 joining the two balls lies below the bottom disc 14 of the top ball, it is isolated from the said top ball and this obviates liability of the twine of the said top ball or cop to become entangled with the knot during the unwinding process. It also prevents the twine from the lower ball or cop from being drawn out in excess of that required in the event of a jerk being applied, or from any other cause.

Having fully described my invention, what I desire to claim and secure by Letters Patent is:—

1. The combination with a ball or cop of twine, yarn or the like adapted to be un-

wound from the centre, of an encircling and close-fitting envelope having tongues punched inwards and bent back to engage the outer layer of the said ball or cop.

2. The combination with a ball or cop of twine, yarn or the like adapted to be unwound from the centre, of an encircling and close-fitting envelope carrying inwardly-projecting pins which engage the outer layer of the ball or cop to support the same.

3. The combination with a ball or cop of twine, yarn or the like adapted to be unwound from the centre, of an encircling and close-fitting envelope consisting of a paper or like band having overlapping ends, and headed pins carried by the band so as to project inwards and engage the outer layer of the ball or cop to support the same, the heads of the said pins being enclosed between the overlapping ends of the band.

4. The combination with a ball or cop of twine, yarn or the like adapted to be unwound from the centre, of an encircling and close-fitting envelope having tongues punched inwards and bent back to engage the outer layer of the said ball or cop, and also carrying inwardly-projecting pins engaging said outer layer.

5. The combination with a ball or cop of twine, yarn or the like adapted to be unwound from the centre, of an encircling and close-fitting envelope and a plurality of vertically and circumferentially spaced isolated members carried by said envelope and projecting inwards from the interior surface of the envelope, said members engaging the outer layer of the ball so as to support the said layer during unwinding.

6. The combination with a ball or cop of twine, yarn or the like adapted to be unwound from the centre, of an encircling and close-fitting envelope and a plurality of vertically and circumferentially spaced pointed members carried by said envelope and projecting inwards from the interior surface of the envelope, said members engaging the outer layer of the cop so as to support the said layer during unwinding.

In testimony whereof I have affixed my signature.

FRANCIS STANLEY WRIGHT.

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