

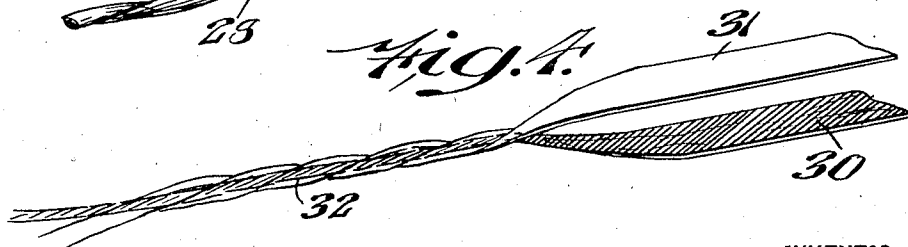
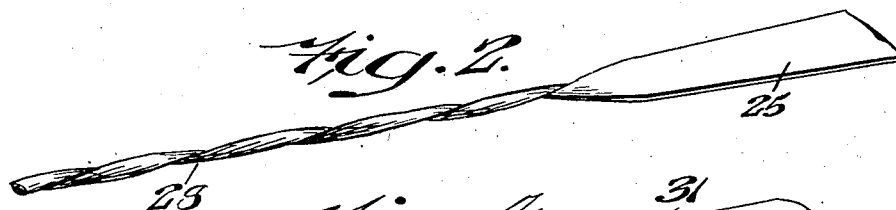
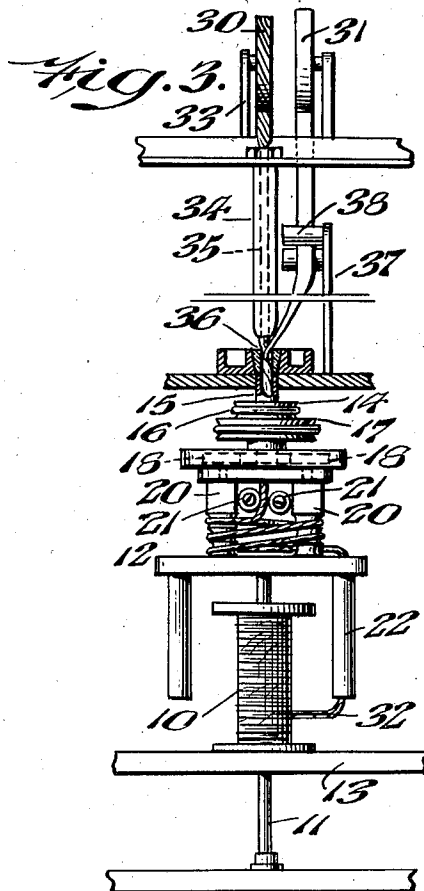
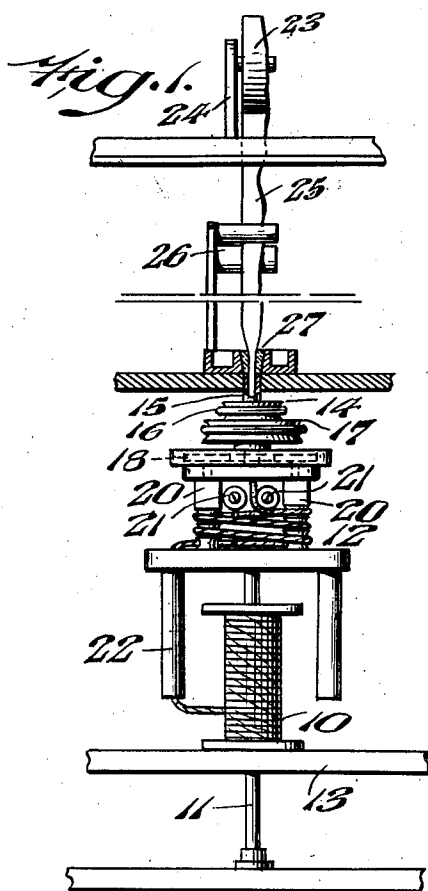
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E. W. TWITCHELL

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CELLOPHANE YARN

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INVENTOR.
Earl W. Twitchell,
BY
Robert M. Barr.
ATTORNEY.

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CELLOPHANE YARN

Earl W. Twitchell, Haddonfield, N. J.

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2 Claims. (Cl. 117—52)

The present invention relates to the art of spinning and more particularly to the formation of a strand of material sold under the trade-mark "Cellophane" from a flat strip of such material.

Some of the objects of the present invention are to form a strand or thread from cellophane material; to provide a cellophane strand suitable for products formed by weaving, braiding, folding, and twisting; to provide a product made heretofore of waste cellophane which is commercial and capable of wide use; to provide means of spinning a strip of cellophane of varying width into a strand of substantially uniform diameter; to provide a strand of material having the attractive appearance of a cellophane product by spinning or twisting cellophane with another material; to provide a strand of material having the appearance of a predetermined solid or mixed color strand but embodying an exposed uncolored strip of cellophane; to provide a new article of manufacture which is cheap, strong, has ornamental characteristics and is capable of a wide range of use; and to provide other improvements as will hereinafter appear.

In the accompanying drawing Fig. 1 represents a front elevation of a spinning machine embodying one form of the present invention; Fig. 2 represents a strand of cellophane as the product of the machine of Fig. 1; Fig. 3 represents a front elevation of a modified form of the invention; and Fig. 4 represents the product made by the modified form of the invention.

Referring to the drawing one form of the invention as exemplified by Figs. 1 and 2 consists in the formation of a strand 10 of cellophane from a strip of cellophane having a varying width. In the ordinary spinning or twisting operation as heretofore practiced paper and other material has been twisted into a thread or strand but always by the use of material of uniform width, and it has not been obvious how a material such as cellophane strips of varying width could be spun or twisted into a thread or strand. As a result of this inobviousness, rolls of cellophane of varying width have heretofore been a waste product in the manufacture of cellophane. It may here be explained that in the winding of cellophane upon spools or rolls it is impossible to do so and maintain a straight edge at an end of the roll. As a result it is necessary to trim the edge square by cutting off the irregular end which as severed is in the form of a rolled strip of cellophane varying in width from practically nothing up to a possible maximum of two or three inches. The annual loss due to this waste of material runs into

thousands of dollars. Generically considered, therefore, the present invention as shown in Figs. 1 and 2 is for a new article of manufacture, namely a strip of cellophane spun or twisted into a thread or strand suitable for weaving, braiding, or any other use. More specifically considered the present invention as shown in Figs. 1 and 2 is for a new article of manufacture in the form of a thread or strand constructed from a strip of cellophane of varying width.

One form of machine for spinning a cellophane strip of varying diameter into a twisted strand is shown in Fig. 1 wherein certain adjuncts may be the same as those commonly employed upon spinning machines used in the production of paper thread or strands. Thus a spool 10 is mounted for free vertical sliding movement upon a spindle 11 which carries the rotatable flyer mechanism 12. A bar 13 is suitably operated to cause the proper reciprocation of the spool 10 as the thread or strand is wound thereon. The flyer mechanism is rotated by the driven pulley 14 keyed to a tubular spindle 15 projecting from the upper end of the flyer mechanism 12 and is driven by a belt 16 from any suitable source of power. A second pulley 17 is loosely mounted upon the spindle 15 and actuates a train of gears 18 to cause rotation of two capstans 20 about which the material feeds to be twisted in accordance with the rotational speed of the parts. Preferably the pulley 17 is driven by the same belt 16 which drives the pulley 14. The material enters the flyer mechanism 12 through the spindle 15 passes about one or the other of two guide rolls 21 to wind around the two capstans 20 and be guided by one of the tubular legs 22 to the spool 10.

In order that the desired drawing and twisting of a cellophane strip 23 of varying width may be successfully accomplished, the roll of material is mounted to rotate freely upon a bearing support 24 and the strip 25 of irregular width led therefrom between guide fingers 26 in a properly positioned manner to enter guide 27 which directs the strip 25 into the tubular spindle 15. The guide 27 is in the form of a bushing preferably formed of a material having a low coefficient of friction while its through opening has an entrance diameter which bears a direct relation to the width of the strip 25. Thus to successfully draw a flat strip of cellophane through the guide it has been found necessary to devise a special bore through the bushing of such a diameter as will not only fold the sides of a narrow width of cellophane inwardly but likewise and in the same efficient manner fold in the portions of the

strip of greatest width, both without crimping or
damaging the strip for clear twisting and wind-
ing. Thus the bore of the bushing has a di-
ameter proportioned with respect to the greatest
width of the strip being twisted and preferably
tapering to a smaller diameter at its discharge
end. A strip of cellophane of uneven diameter
will leave the machine in the form of a twisted
strand 28 such as shown in Fig. 2.

10 In the form of the invention shown in Figs. 3
and 4 a machine generally similar to that shown
in Fig. 1 is employed to carry out the spinning and
twisting of two separate strips of material 30 and
31 into a single strand 32. Those parts in Fig. 3
15 which correspond to the same parts in Fig. 1 are
given the same reference numerals and the same
description will serve also to thus avoid repeti-
tion. In this form of the invention the strip 30 is
preferably paper or some other material cheaper
20 than cellophane and it is wound in a roll of uni-
form width which is mounted upon a bearing
support 33 in such a position that the material
leaves the roll to enter a tube 34 having a bore
35 of such diameter as to fold in the sides of the
strip 30. The construction is such that the strip
25 30 leaves the tube 34 as a core of less diameter
than the original width of the strip 30. The
tube 34 is mounted in coaxial relation with a
bushing guide 36 which leads the core to the
30 spindle 15 and initially causes the strip 31 of cel-
lophane to wind about the core. The strip 31
is led from the roll, (carried by the support bear-
ing 37), to guide fingers 38, and thence directly
35 into the guide 36. As here shown the core mate-
rial 30 is of a color contrasting with the natural
color of the cellophane so that where the latter
is twisted over and about the core the complete
strand product will have the appearance of a

wholly dyed strand. Thus not only is a strand
formed of two different materials but it is one
in which the glistening ornamental characteris-
tics of cellophane are completely preserved. In
referring to the formation of a strand of two
different materials reference has been to the use
of paper as a core about which a strip of cello-
phane is twisted to form a unitary strand, but it is
to be understood that this associated strand may
be of cotton, jute, hemp, rope, or any other ma-
terial used for spinning in conjunction with a
strip of cellophane, any of which so associated
will give all of the appearance, working qualities,
and greater strength than a strip of cellophane
alone.

While in the foregoing reference has been made
specifically to the material known as cellophane,
it is to be understood that this nomenclature is
to be taken in a broad sense and that the inven-
tion comprehends the use of any kind of regener-
ated cellulose material of a similar nature to that
hereinbefore referred to.

I claim:

1. A new article of manufacture consisting of a
strand formed by twisting a ribbon of sheet celu-
lose, said strand in untwisted form having a
straight edge and an irregular edge and when
twisted being of substantially uniform diameter
but varying in flexibility throughout its length.
2. A new article of manufacture consisting of
a strand formed by twisting a ribbon of regener-
ated cellulose, said strand in untwisted form hav-
ing a straight edge and an irregular edge and
when twisted being of substantially uniform di-
ameter but varying in flexibility throughout its
length.

EARL W. TWITCHELL.