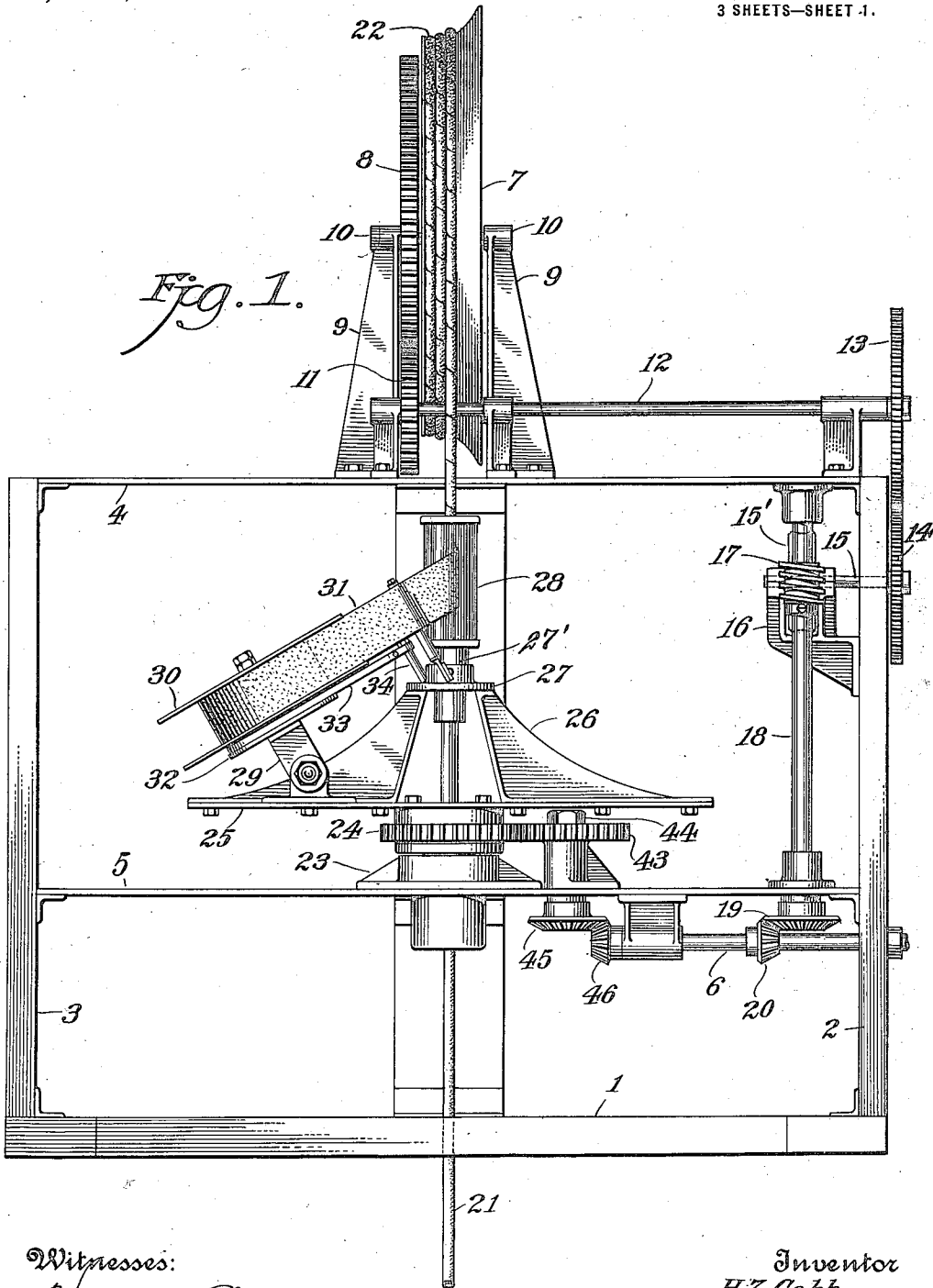


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MACHINE FOR WRAPPING HOSE AND SIMILAR ARTICLES.
APPLICATION FILED FEB. 4, 1915.

1,204,342.

Patented Nov. 7, 1916.
3 SHEETS—SHEET 1.



Witnesses:

Veronica Braun

B. V. Mohan

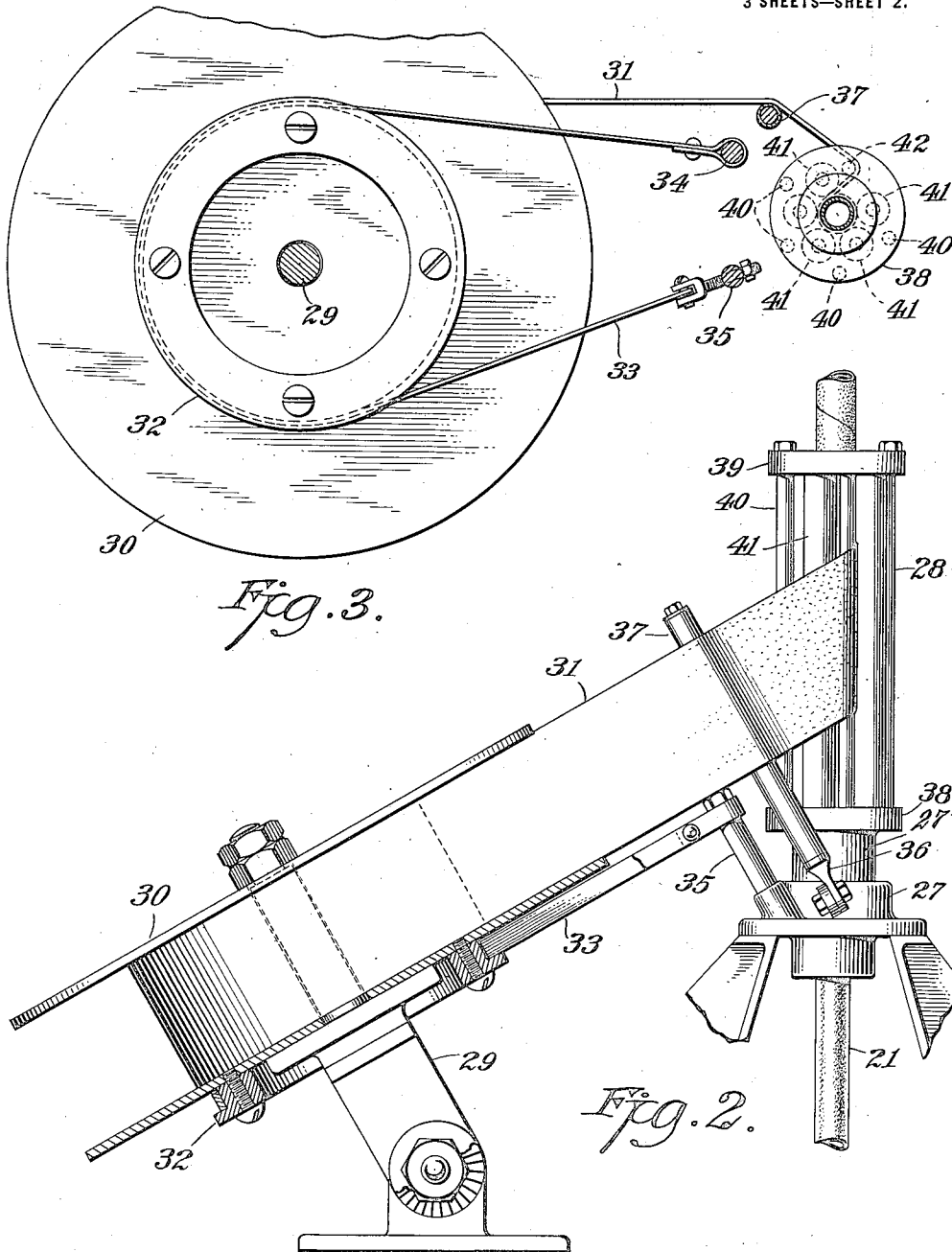
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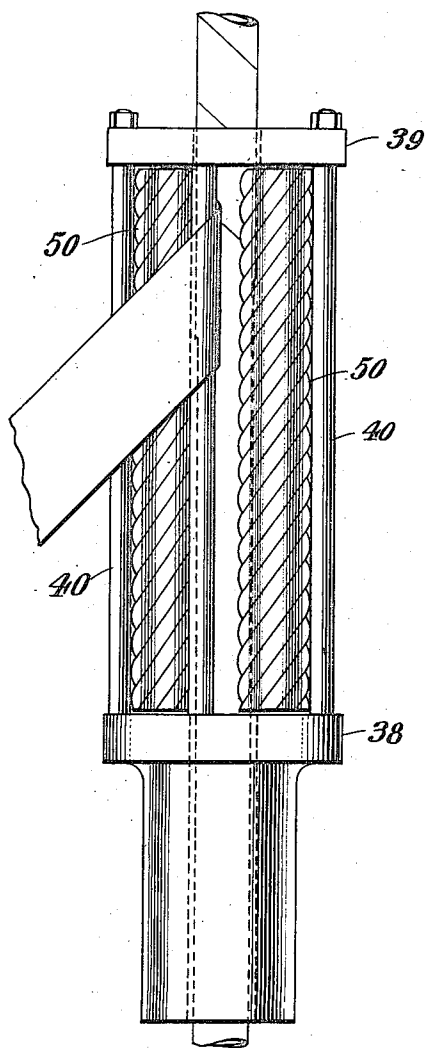


Fig. 4.

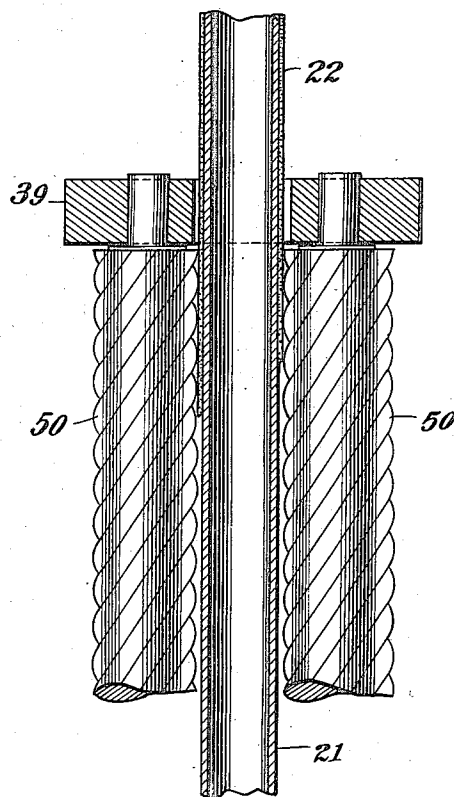


Fig. 5.

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UNITED STATES PATENT OFFICE.

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MACHINE FOR WRAPPING HOSE AND SIMILAR ARTICLES.

1,204,342.

Specification of Letters Patent.

Patented Nov. 7, 1916.

Application filed February 4, 1915. Serial No. 6,022.

To all whom it may concern:

Be it known that I, HENRY Z. COBB, a citizen of the United States, residing at Winchester, in the county of Middlesex, State of Massachusetts, have invented certain new and useful Improvements in Machines for Wrapping Hose and Similar Articles, of which the following is a full, clear, and exact description.

My invention relates to machines for wrapping fabric and other similar flexible materials about hose and other similar cylindrical bodies so that the same will be covered with a spirally wound layer or layers of such material.

The object of my invention is to provide a machine that will not only wind said material smoothly and evenly about such a cylindrical body as hose, but one that will cause said material to be drawn into position under a certain tension without distorting or otherwise injuring the article.

A further object of my invention is to provide a machine of the character mentioned which will overcome any difficulty owing to the use of so-called frictioned fabric or fabric coated with rubber stock or other tacky or sticky material.

A special feature of my invention is the production of a particular form of winding or laying-on device which will lay the fabric smoothly and tightly upon the hose or similar article having no stiffening core or mandrel and will at the same time prevent such article from being twisted or pulled out of line owing to the tension on the fabric.

For a detailed description of two forms of my invention, which I at present deem preferable, reference may be had to the following specification and to the accompanying drawings forming a part thereof, in which:

Figure 1 is a view in elevation of my improved machine; Fig. 2 is a side elevation of the winding head, together with the reel for the fabric, detached from the rest of the machine; Fig. 3 is a plan view of the winding head and fabric reel looking upward from the under side thereof; Fig. 4 is a side elevation of a modified form of winding head; and Fig. 5 is a vertical sectional view of the upper portion of the same.

Referring to Fig. 1 of the drawing, it will be seen that the frame of the machine

consists of a base 1, uprights 2 and 3, and transverse supporting bars or plates 4 and 5. The numeral 6 indicates a driving shaft which is the main shaft for supplying power to the various parts. The numeral 7 indicates a take-up drum or cone which has several turns of the hose being treated passed around the same and which it engages frictionally to draw the hose upward as the fabric is wrapped thereon. The rotation of the take-up drum is accomplished as follows: The numeral 8 indicates a gear which is fixed to rotate with the drum 7 and is carried in suitable bearings 10 on the supporting arms 9 fixed to the transverse plate 4. A gear 11 engages the gear 8 and is carried on one end of a horizontal shaft 12 which on its outer end is provided with a gear 13 which meshes with a similar gear 14 carried on the shaft 15 extending inwardly from the upright 2 and supported at its inner end by the bracket 16. The shaft 15 carries on its inner end a worm gear 15' which meshes with a worm or screw 17 on a vertical shaft 18. The lower end of this shaft carries a beveled gear 19 which meshes with a beveled pinion 20 on the main driving shaft 6. These parts constitute the well known take-up mechanism for such machines as those for making braided hose, cables, etc., and it is obvious that any other suitable form of take-up mechanism may be substituted therefor.

The numeral 21 indicates the hose or similar article before it is wound, and the numeral 22 indicates the same after it is wound and passes over the take-up cone 7. The hose 21 passes upward through a vertical thrust-bearing 23 in the form of a collar upon which bears a ring having a gear 24 carried on its external surface. Fixed to the upper end of this ring is a plate 25 in the form of a disk which has fixed thereon the angle irons 26 which support a flanged collar 27 at their upper ends. Attached to this flanged collar by means of a sleeve 27' is the winding head 28. The disk 25 carries an adjustable support 29 for the reel 30 carrying the fabric 31 to be wrapped about the hose or other article. The reel 30 is provided with a grooved flange 32 over which passes a brake band 33 attached at one end to the fixed post 34 and having its opposite end adjustably connected with the post 35 so that the tension

on the brake band may be varied to produce the requisite tension during the winding of the fabric about the hose. (See Figs. 2 and 3). Adjustably mounted on the
 5 flanged collar 27 is a post 36 which carries a tubular roller 37 over which the fabric 31 passes as it is fed to the winding head 28.

The winding head 28 is constructed as follows: The lower end consists of a flanged
 10 collar 38 which is rigidly connected with the flanged collar 27. The upper end consists of a disk 39 which is held in position the requisite distance from the flanged collar 38 by the supporting rods 40. In suitable
 15 bearings in the collar 38 and the disk 39 are vertical rollers 41, each of which is tangent to a cylindrical surface slightly less in radius than the radius of the hose being wound. The numeral 42 indicates a fixed
 20 guide rod extending between the collar 38 and the disk 39 and over which the fabric 31 passes as it is fed between the body of the hose 21 and the rollers 41. The winding head 28 and the reel 30 on the disk 25
 25 are rotated by any suitable means such as by the gear 43 meshing with the gear 24 carried on the end of a vertical shaft 44, to the other end of which is attached bevel gear 45 which meshes with the beveled
 30 pinion 46 carried on the main driving shaft 6.

The operation of the machine will be clear from a consideration of Fig. 1. Supposing the reel 30 to be advancing toward
 35 the observer and turning from left to right, the frictioned fabric will be wrapped upon the hose 21 in a series of overlapping helical turns as the take-up drum 7 draws the hose upward at a constant predetermined rate
 40 having a fixed relation to the rotation of the reel 30. The hose is preferably inflated by atmospheric or other suitable fluid pressure so that it is forced with some pressure against the rolls 41 on the head 28.

45 In Figs. 4 and 5 I have illustrated a modified form of winding head in which the rollers are grooved or helically corrugated, as indicated at 50, so that there is a tendency to force the fabric in an upward direction
 50 which tends to smooth out the same and prevent any wrinkles, particularly at the overlapping portions of the successive turns.

vent any wrinkles, particularly at the overlapping portions of the successive turns.

Having thus described these forms of my invention, I do not wish to be understood as being limited to the details of form and arrangement of parts herein set forth, for various changes may be made without departing from the spirit and scope of my invention. However, as a result of my researches relative to this machine I have found that the above described forms give the best results, particularly as overcoming any tendency of the hose to twist while the fabric is being wrapped around the same. I have even found by the above described form of winding head that there is a slight tendency of the hose to twist in the opposite direction against the tension of the strip of fabric being placed thereon.

What I claim and desire to protect by Letters Patent is:

1. In a machine for wrapping ribbons of sheet material, in combination with means for feeding the article to be wrapped at a fixed rate, a support rotatable about said article, a spool for carrying a supply of said sheet material mounted eccentrically on said support, and a winding head connected with said support, said winding head comprising a circular series of parallel elongated pressure rolls and a fixed tension bar on said winding head adjacent one of the rolls of said series.

2. A winding head for wrapping ribbons of adhesive sheet material about a coreless elastic flexible article comprising a rotatable frame, a series of parallel elongated anti-friction rolls carried thereby and adapted to hold said article from bending and to force said material into intimate contact with said article, and a tension and guiding bar located between two of said rolls over which said material is adapted to pass and be immediately set under pressure by said rolls.

Signed this 19th day of Jan. 1915.

HENRY Z. COBB.

Witnesses:

E. L. STICKNEY,
 E. E. JONES.