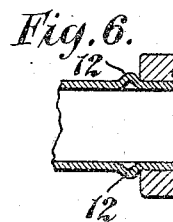
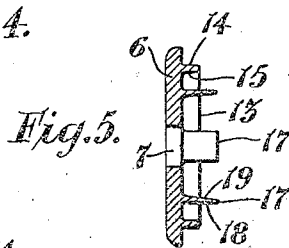
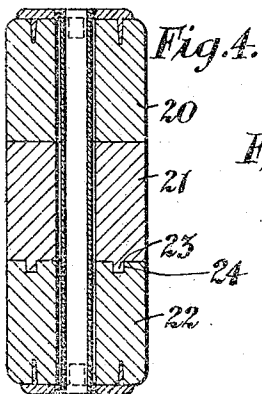
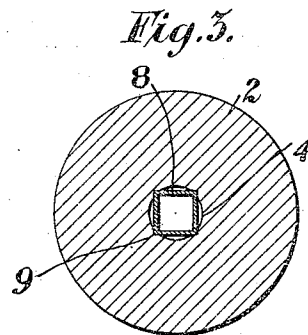
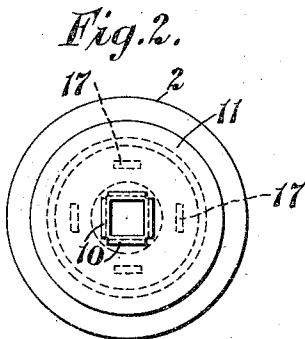
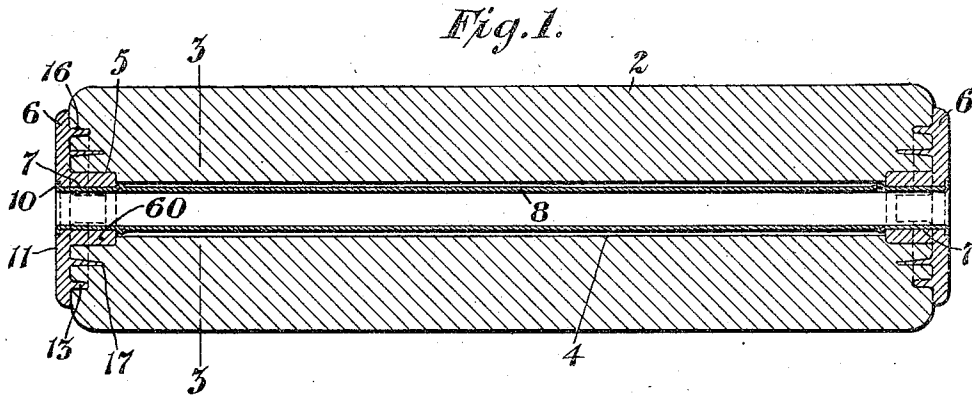


A. ZABRISKIE.
SHELL ROLL.
APPLICATION FILED JAN. 16, 1912.

1,046,532.

Patented Dec. 10, 1912.



Witnesses:

Chas. W. La Rue

Louis C. Fischer

Inventor:

Albert Zabriskie,
By Wilbur M. Stone,
Attorney.

UNITED STATES PATENT OFFICE.

ALBERT ZABRISKIE, OF PATERSON, NEW JERSEY, ASSIGNOR OF ONE-HALF TO
EDWARD D. CUNDELL, OF PATERSON, NEW JERSEY.

SHELL-ROLL.

1,046,532.

Specification of Letters Patent.

Patented Dec. 10, 1912.

Application filed January 16, 1912. Serial No. 671,494.

To all whom it may concern:

Be it known that I, ALBERT ZABRISKIE, a citizen of the United States, and a resident of Paterson, in the county of Passaic and State of New Jersey, have invented certain new and useful Improvements in Shell-Rolls, of which the following is a specification.

This invention relates to shell rolls and particularly to rolls of the class specified which are adapted for use by bleachers, dyers and fabric manufacturers.

My improved rolls are designed to be used for winding cloth thereon for use in dye vats, in cloth printing machines, in bleaching processes and the like. Such rolls must, because of the nature of their employment, present no metal parts for contact with the cloth as said metal parts are highly subject to rust from the dyeing and bleaching liquors and rusty metal is obviously injurious to fabrics.

It is customary and desirable to construct such rolls of wood and preferably of one piece. It is also customary and desirable to provide a square axial hole therethrough for the reception of a square bodied arbor, by which said roll is driven and which arbor may be readily inserted into and removed from said roll. Wooden rolls are obviously perishable and in the hard usage to which they are subjected rapidly deteriorate, become chipped and split, particularly at their ends. Also and particularly, the square hole therethrough is subject to constant chafing by the insertion of the square arbor, whereby said hole soon loses its proper and original shape and becomes obstructed by chips, cut or broken therefrom by said arbor. Various devices have been resorted to with more or less success for preventing or reducing in number such deteriorations but nevertheless such rolls are relatively short lived. My improvements are directed to the better prevention of these troubles, and comprise means set forth herein and illustrated in the drawing accompanying this specification wherein Figure 1 is a longitudinal section of a shell roll embodying my improvements. Fig. 2 is an end view thereof and Fig. 3 is a cross section on line 3, 3 of Fig. 1. Fig. 4 is a longitudinal section on a reduced scale of my improved roll illustrating modifications of construction. Fig. 5 is a longitudinal section of my improved roll flange

slightly modified from the showing of Fig. 1 and Fig. 6 is a longitudinal section on an enlarged scale of a detail of my improvements.

Body 2 is preferably of wood and integral, of cylindrical exterior and provided with an axial cylindrical hole 4 therethrough. In some cases I counterbore said hole at each end as at 5 for purposes hereinafter set forth.

At each end of body 2 I provide a flange as 6 having an axial hole 7 therethrough and extending through said body and flanges is axial tube 8. Means, more fully described hereinafter are provided for fastening said tube to said flanges. Body 2 is thus firmly held between said flanges which protect the ends thereof against injury and tube 8 protects hole 4 against abrasion by any arbor which may be thrust therethrough.

As it is customary to drive rolls of the class to which my improvements pertain by means of a polygonal arbor, commonly having four sides, tube 8 is of similar cross section and cylindrical hole 4 in body 2 is of such diameter relative to tube 8 as to permit the corners, as 9, of said tube to be sunk below the surface of said hole in engagement with said body 2. This arrangement tends to prevent turning of tube 8 in hole 4 when the roll is rotated by its supporting arbor. Also the holes as 7 in flanges 6 respectively are of the same profile as that of tube 8 whereby said flanges are also prevented from turning on said tube.

A convenient means of fastening tube 8 to flanges 6 is by turning over the ends, as 10, of its walls onto the faces, as 11, of said flanges. Also to locate said flanges inwardly on said tube 8 I may provide stops 12 pressed outwardly in the walls of said tube. To hold body 2 against splitting I provide an annular wall 13 inreaching from flange 6 and having its outer face 14 parallel with the axis of the roll and having its inner face 15 inclined outwardly so that when said wall is forced into annular channel 16 cut therefor, outside face 14 will slide into place without tending to split body 2 outwardly and inner face 15 will draw body 2 inwardly and hold it under tension against splitting. Between wall 13 and hole 7 I provide a plurality of inwardly reaching teeth as 17 preferably longer than the depth of wall 13, for engagement with the ends respectively of body 2,

to afford intimate connection between flange 6 and said body and to prevent the turning of one relative to the other. I preferably form outer face 18 of teeth 17 parallel with the axis of the roll and inner face 19 inclined outwardly, to assist in drawing body 2 inwardly.

Flange 6 may be provided with inreaching axial hub 60 for engagement on its outside with counterbored portion 5 of hole 4 and having its inner face coincident with hole 7 of said flange. Also I preferably make hub 60 longer than teeth 17 so as to guide flange 6 to its seat on and in body 2.

Directing attention now particularly to Fig. 4 I have there illustrated a roll built up of a plurality of annular members as 20 butted end to end and held together by means of flanges 6, 6 and tube 4. My improved construction is particularly adapted for such built up construction, as body members 20, 21, 22 are held securely together by tube 8 and flanges 6. Also for positioning said body members, as for instance 21, 22, relative to each other I may employ annular tongue 23 on member 21 engaging annular groove 24 in member 22.

I claim:—

1. A shell roll including in combination, a body, a metal flange on each end of said body having a plurality of inwardly reaching teeth and an annular inreaching wall encircling said teeth for engaging and drawing toward the axis said roll body, a tube extending axially through said body and into said flanges and means for fastening said tube to said flanges.

2. A shell roll including in combination, a cylindrical body of wood, having a cylindrical axial hole therethrough, a polygonal tube of metal through said hole, the corners of said polygonal tube being sunk below the surface of said hole in engagement with said body, a metal flange on each end of said body, and said tube extending through said flanges and fixed thereto.

3. A shell roll including in combination, a cylindrical body of wood having a cylindrical axial hole therethrough counterbored at its ends, a polygonal tube of metal through said hole, a metal flange on each end of said body, said flanges each having an axial inwardly reaching hub, the outside of which is cylindrical for engagement with the counterbored end of said body and having a polygonal axial hole therethrough corresponding in profile with said tube and said tube extending through said flanges and

having the ends of its walls turned over onto the faces respectively of said flanges.

4. A shell roll including in combination, a body, a metal flange on each end of said body, said flanges each having an inreaching annular wall for engagement with said body, a tube extending axially through said body and into said flanges and means for fastening said tube to said flanges.

5. A shell roll including in combination, a body, a metal flange on each end of said body having a plurality of inwardly reaching teeth for engagement with said body, a tube extending axially through said body and into said flanges and means for fastening said tube to said flanges.

6. A shell roll including in combination, a body, a metal flange on each end of said body, said flanges each having an inreaching annular wall for engagement with said body, said annular wall having its outer face parallel with the roll axis and its inner face inclined outwardly, a plurality of inwardly reaching teeth between said annular wall and axial hole for engagement with said body, each of said teeth having its outer face parallel with the roll axis and its inner face inclined outwardly, a tube extending axially through said body and into said flanges and means for fastening said tube to said flanges.

7. A shell roll including in combination, a body comprising a plurality of members of the same cross section, butted end to end, engaging annular tongues and grooves on the ends of said body members, a tube extending axially through said body and into said flanges and means for fastening said tube to said flanges.

8. A shell roll including in combination, a cylindrical body of wood, having a cylindrical axial hole therethrough, a polygonal tube of metal through said hole, the corners of said polygonal tube being sunk below the surface of said hole in engagement with said body, a metal flange on each end of said body, said tube extending through said flanges and secured thereto, and means on said flanges for engaging and drawing axially the roll body.

Signed at New York N. Y., this 15th day of January, 1912, before two subscribing witnesses.

ALBERT ZABRISKIE.

Witnesses:

CHAS. W. LA RUE,
LOUIS B. FISCHLER.