J. W. ANDERSON.

DRIVING CYLINDER FOR SPINNING MACHINES.

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JOHN W. ANDERSON, OF PAWTUCKET, RHODE ISLAND.

DRIVING-CYLINDER FOR SPINNING-MACHINES.


To all whom it may concern:

Be it known that I, JOHN W. ANDERSON, a citizen of the United States of America, and a resident of Pawtucket, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Driving-Cylinders for Spinning-Frames and Kindred Machines, of which the following is a specification.

My invention relates to sheet-metal driving-cylinders adapted in use to carry the cords or bands which transmit motion to the spindles of spinning-frames and kindred machines.

In cylinders or drums of the class above referred to it is usual to construct them of a plurality of comparatively short sections, an end of each section being adapted to receive and be soldered to the adjacent end of the following section and forming a flush or smooth joint and provided interiorly with a series of sheet-metal disks or partitions located contiguous to and soldered to the said joint portion.

A journal or shaft is secured to and extends from the center of the outer ends of the cylinder, thereby adapting it to be revolvably mounted in suitable bearings. There are objections to such former sheet-metal driving-cylinders in that the percentage of labor and weight of stock entering into their construction materially increases the cost without corresponding advantages.

The object of my invention is to produce a driving cylinder or drum for spinning-machines, &c., in which the weight of material, the amount of solder used, and also the cost of labor are considerably less than is required in the production of cylinders hitherto employed. My improved cylinder also possesses the added advantage of greater strength or stiffness and efficiency.

In carrying out my invention each of the several cylindrical sections, or at least those comprising the main body portion of the cylinder, has one end thereof true and plain, the other end being turned to form an integral interior peripheral flange, the adjacent outer portion of this end of the section being reduced in diameter a short distance longitudinally to receive thereon the plain or unsquared end of the fellow section. The adjacent or contacting surfaces of the thus-reduced and inserted end portions of the adjoining sections are then soldered together to form a practically air-tight or solid joint, the several sections when thus joined together forming a cylinder having a smooth and straight exterior surface.

In the accompanying sheet of drawings, Figure 1 is a side elevation, in reduced scale, of a driving-cylinder embodying my improvement. Fig. 2 is an enlarged longitudinal sectional view taken through the body portion of the cylinder. Fig. 3 is a partial cross-sectional view taken on line o o of Fig. 2. Fig. 4 is a cross-sectional view, enlarged, taken on line x x of Fig. 1; and Fig. 5 is a longitudinal sectional view showing a slight modification.

A, referring to the drawings, indicates my improved driving-cylinder composed of a plurality of cylindrical sheet-metal sections a, soldered together and provided with end journals b. The sections a are usually made of sheet metal, as tin, one end d of the section (see Fig. 2) being a continuation of the normal diameter of the cylinder. The other or opposite end portion of the section is swaged or reduced in diameter at d′ to a cylindrical form to receive thereon the adjacent end d of the adjoining or fellow section. The stock or material of the front or outer end part of said reduced portion is turned inwardly and at right angles to the longitudinal axis to form the integral annular strengthening-flange f. The operation just referred to may be accomplished by what is termed a “metal-spinning” process, wherein the said end portion is gradually transformed by suitable tools from the cylindrical shape to form the intended integral flange f. I would state that the thickness of stock used in making driving-cylinders A is considerably less than as represented in Figs. 2 and 3, wherein the thickness is exaggerated. The adjacent surfaces of the parts d′ d″ of the sections are united by solder in a well-known manner.

While I prefer to make up the cylindrical units or sections a substantially alike—that is, each having one end reduced in diameter and turned to form the stiffening member f, the other end being of normal diameter—I may provide one section with members d′ and f at each end adapted to receive thereon and be soldered thereto plain or unsquared sections c, substantially as represented, sectionally, in Fig. 5.

I claim as my invention and desire to secure by United States Letters Patent—

In a sheet-metal driving-cylinder of the class described, the combination with a section or unit having a portion at one end thereof reduced in diameter and having the free
end of said reduced portion bent inwardly at substantially right angles the longitudinal axis of the cylinder to form an integral annular flange \( f \), of a fellow section having an end thereof arranged to receive therein said reduced portion of the first-named section and be soldered thereto, the reduced portion of each section being of considerable length whereby the flange on the end of the reduced portion of one section will lie within the engaging section a considerable distance from the end of said section, substantially as described.

Signed at Providence, Rhode Island, this 11th day of March, 1905.

JOHN W. ANDERSON.

Witnesses:

GEO. H. REMINGTON,
CALVIN H. BROWN.