(No Model.)

J. HAMER.

BAND CYLINDER FOR SPINNING AND TWISTING MACHINES.

No. 456,765. Patented July 28, 1891.

Fig. 1.

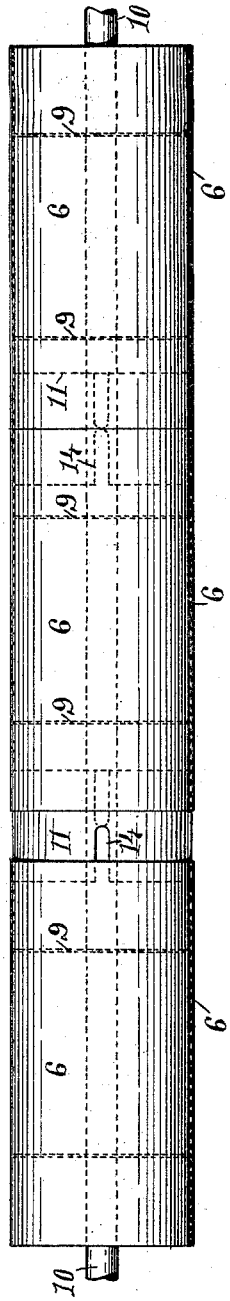


Fig. 5.

Fig. 4.

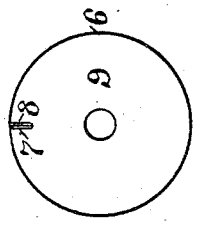


Fig. 3.

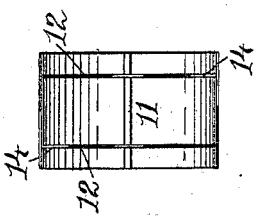
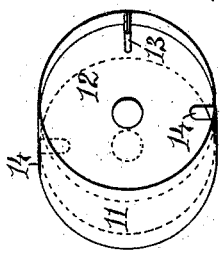


Fig. 2.



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UNITED STATES PATENT OFFICE.

JOHN HAMER, OF PROVIDENCE, RHODE ISLAND.

BAND-CYLINDER FOR SPINNING AND TWISTING MACHINES.

SPECIFICATION forming part of Letters Patent No. 456,765, dated July 28, 1891.

Application filed June 10, 1889. Serial No. 313,662. (No model.)

To all whom it may concern:

Be it known that I, JOHN HAMER, of the city and county of Providence, and State of Rhode Island, have invented a new and useful Improvement in Band-Cylinders for Spinning and Twisting Machines; and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

This invention has reference to improvements in cylinders used for transmitting power in spinning and twisting machines; and it consists in the peculiar and novel construction of the shell of the cylinder and the connecting-sleeve, as will be more fully set forth hereinafter.

In mule spinning-machines, as well as in other spinning and twisting frames, sheet-metal cylinders of great lengths are used to transmit motion to the spindles. The driving-bands pass around one or more of these cylinders and around the whirls on the spindles, thus imparting rotary motion to the spindles. It is essential that the spindles should run with absolute steadiness, so as to produce yarn of uniform fineness. The pull of the driving-band draws the spindle against the bolster-bearing of the spindle, and the slightest uneven surface of the cylinder causes the band to vibrate, which vibration is imparted to the spindle and is very objectionable. These cylinders are usually constructed of tin-plated sheet metal, the joints of which are usually made by butting the edges of the sheets forming the cylinder and soldering the same to strips of tin-plate placed on the inside of the cylinder. The longitudinal seams so formed are liable to form flattened places on the cylinders, as the soldering-iron bearing on these plates depresses the surface and the solder secures the edges in this position.

The object of this invention is to avoid these defects and secure a perfectly-round cylinder, the alignment of the several sections of which shall be perfect and which shall be more rigid than cylinders as heretofore constructed.

Figure 1 is a view of a length of three sections of my improved cylinder. Fig. 2 is a perspective view showing the coupling-sleeve for connecting two sections of the cylinder together. Fig. 3 is a sectional view of the coupling. Fig. 4 is an end view of the cylinder, and Fig. 5 is an enlarged view of the joint by which the end edges of the sheet forming the cylinder are united.

Similar numbers of reference indicate corresponding parts throughout.

Each one of the sections of the cylinder indicated by the number 6 is made by bending a sheet of metal into the form of a perfect cylinder. One of the edges 7 is bent sharply inward at such an angle that the inwardly-projecting edge is on a line radial from the center of the cylinder. The other edge 8 is also bent sharply inward and then bent upward, so as to form a narrow trough or groove, into which the inwardly-projecting edge 7 extends. The two edges are then brought together and secured by solder. The fluid solder runs into the trough or groove formed by the bending of the edge 8, firmly uniting the surface of the edges together and forming a strong rigid joint. Two heads 9, provided with a central hole to receive the shaft 10, are secured in the section 6 at such distance from the ends as will permit the entrance of the coupling 11. The coupling 11 is a short cylinder of slightly less diameter than the main cylinder, so as to enter into the same and form a strong support for the outer cylinder, as is shown in Fig. 1, where the section 6 on the left hand of the drawing is shown partly extending over the coupling 11. The coupling is formed of sheet metal, united by a joint in the same manner as the main cylinder. It is provided with two circular heads 12, each of which has the slot 13 to receive the inwardly-projecting joint formed by the edges 7 8 and the slit 14, which connects with a slit in the cylinder of the coupling to receive the inwardly-projecting joint of the sections 6 of the main cylinder. The heads 12 are each provided with a central hole to fit the shaft 10.

The construction of the cylinder is as follows: The sections 6, having been properly formed and soldered, and the circular heads 9 secured in them, and the couplings 11 constructed as described, one of the sections 6 is placed on the shaft 10 and a coupling 11 is placed on the shaft and entered into one end of the section 6. The next section 6 is now

pushed over the projecting end of the coupling 11, as is shown in Fig. 1, and forced inward until the edges of the sections practically join, when they are secured together by solder, so as to make a smooth continuous surface. Another coupling 11 is placed on the shaft, followed by another section 6 until the desired length is reached. The slits 14 in the coupling are placed on opposite sides of the coupling as well as on the opposite ends, and the inwardly-projecting joints in the cylinders are placed alternately in opposite positions. By this construction an absolutely perfect cylinder is produced, on which the bands run perfectly steady, the draft on the spindle-whirls is uniform, and the spindles run more steadily. The cylinder is more rigid, and longer cylinders can be used, supported on end bearings only, than is possible with the old construction.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, with the sections 6, provided with inwardly-projecting joints, of the coupling 11, provided with the heads 12, and the slits 14, constructed to unite the sections and support the cylinder, as described.

2. In a cylinder for spinning and twisting machines, the combination, with the sections 6, formed of sheet metal and having their edges united by the joint formed by the inwardly-bent edges 7 and 8, secured by solder, of the couplings 11, the heads 9 and 12, the latter provided with slots 14, and the shaft 10, as described.

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