

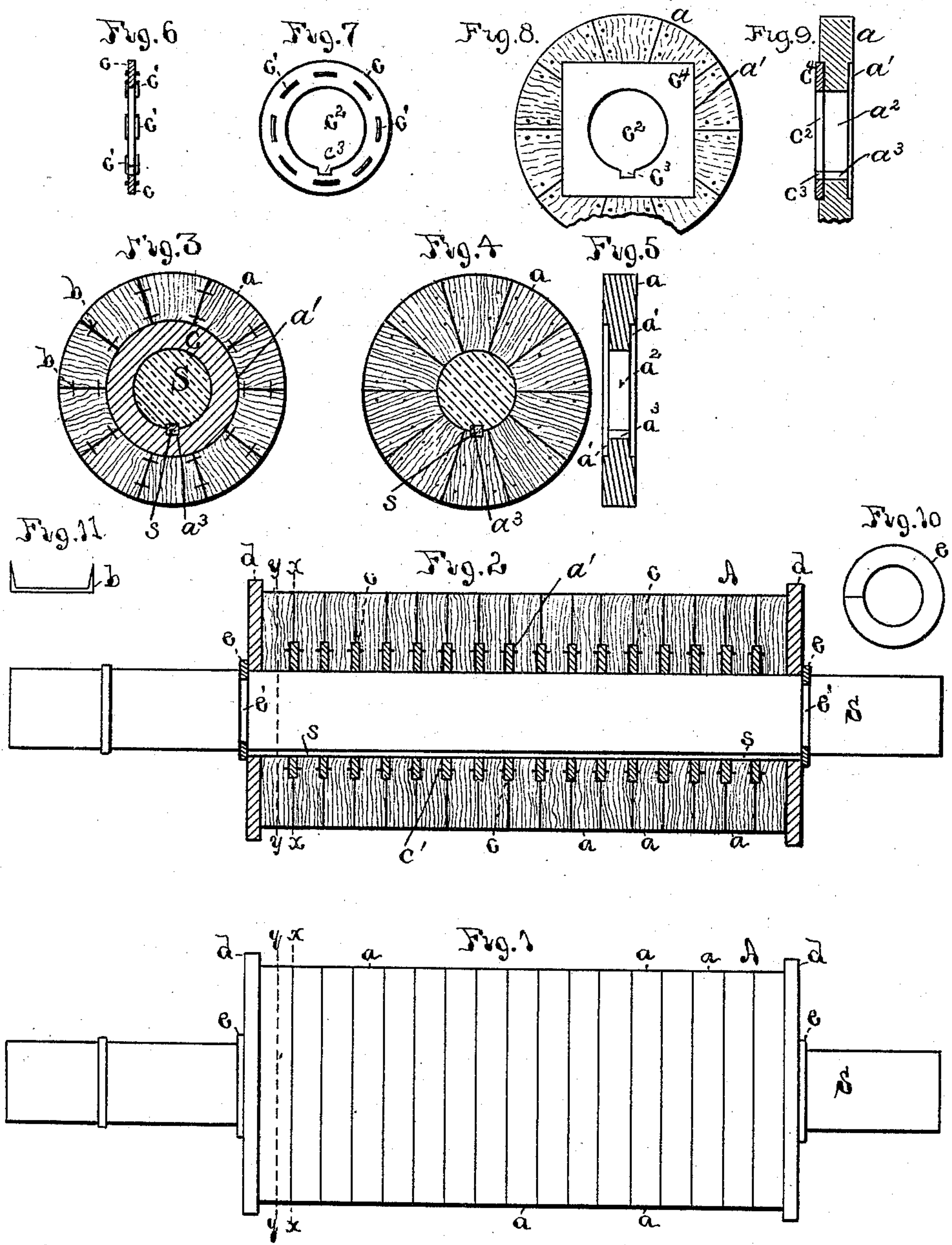
(No Model.)

F. G. & A. C. SARGENT.

SQUEEZE ROLLS FOR WOOL WASHERS AND SIMILAR MACHINES.

No. 431,174.

Patented July 1, 1890.



Witnesses

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UNITED STATES PATENT OFFICE.

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SQUEEZE-ROLL FOR WOOL-WASHERS AND SIMILAR MACHINES.

SPECIFICATION forming part of Letters Patent No. 431,174, dated July 1, 1890.

Application filed November 15, 1889. Serial No. 330,376. (No model.)

To all whom it may concern:

Be it known that we, FREDERICK G. SARGENT and ALLAN C. SARGENT, of Graniteville, in the county of Middlesex and State of Massachusetts, have made a new and useful Improvement in Squeeze-Rolls for Wool-Washers and Similar Machines, of which the following is a specification.

Our invention relates to squeeze-rolls for wool-washing and other similar machines; and it consists in certain improvements in the construction and combination of the parts of said rolls for such machines, substantially as hereinafter described and claimed.

In the drawings, Figure 1 is a side elevation of a squeeze-roll removed from the wool-washing machine and constructed substantially in accordance with our present invention. Fig. 2 is a longitudinal central section of the roll, showing the method of construction and combination of the several parts. Fig. 3 is a transverse section of the roll on line *x x* of Figs. 1 and 2, showing the construction and application of the sections of the roll and the flanges which retain it upon the shaft. Fig. 4 is a section of the same on the dotted line *y y*. Fig. 5 is a transverse section across one of the sections of the roll removed from its shaft and connected parts. Fig. 6 is a transverse section through one of the metal flanges which hold the sections of the roll in position upon the shaft. Fig. 7 is a face view of the same. Figs. 8 and 9 are similar face and sectional views of a modified form of this metal flange. Fig. 10 is a face view of the steel ring or flange cut through at one side, used to hold the sections together on the shaft and form the roll. Fig. 11 is one of the double-pointed tacks or hooks used to secure the different segments forming each section of the roll together to complete the section.

A is the body part of the completed roll, formed of a series of wooden sections *a a*, constructed as hereinafter described. These sections are made of segments of wood, which we prefer shall be cut so that the grain of the wood radiates outward substantially from the center of the shaft. Each section is formed of a number of these segments, cut so as to form a complete disk or ring, as shown. The

different segments are connected together, as shown in Fig. 3, by a series of double-pointed tacks *b b*, similar to that shown in Fig. 11. After the segments are put together they have recesses *a' a'* formed in their opposite faces, as shown in Fig. 5, of a suitable size to receive the metal disks or rings *c c*, so that one-half the thickness of each disk may lie in each section of the roll. This construction is important, as the sections *a a* must abut against each other at their outer peripheral edges to form a continuous surfaced roll, as any crack or space would wind full of wool fiber and destroy the efficiency of the roll. These disks *c c* have projections *c' c'* on their opposite faces, which are intended to be forced into the wood of the section against which they press, and afford an additional security against the movement of any part of those sections when mounted upon the shaft. These projections are of circumferential form and embrace part of the wood of the disks between them and the shaft. These disks may, however, be made plain, if desired, and of rectangular shape outside, as shown in Figs. 8 and 9, designated by the letter *c'*. In all cases, however, they are provided with a hole *c'*, fitting the shaft *S* of the roll, and have a slot *c'* on one side of this hole adapted to fit the spline *s* on the shaft. The sections *a* of the roll also have holes *a'*, fitting snugly upon the shaft and a slot *a'* for the spline.

After the wooden sections are made, with the segments of dry wood secured together by the double-pointed tacks or hooks, as described, they are then soaked in oil for a number of hours, and the oil may be heated with steam or by other means, in order to cause it to penetrate the wood better, or be applied to the disks under pressure, if preferred. This filling of the pores of the wood with oil prevents the water from soaking into it and causing the disks to shrink or swell too much after they are inserted into the roll.

d d are heads or disks fitting the shaft at each end of the sections forming its body after they are put together, and these are held in place by the steel collars or rings *e*, which are cut through one side and sprung over the roll into the circumferential grooves *e'*, in

which position they hold the heads d , the sections of the roll, and the disks together, as shown in Figs. 1 and 2.

The roller constructed as herein shown and 5 described, when employed in a wool-washing machine, is mounted in connection with a companion roller of ordinary construction and of a somewhat shorter length, enabling it to revolve between the end flanges d during the compressing operation. The rolls 10 being made of these sections, which are themselves formed of segments thoroughly kiln-dried before being used, there is no liability of shrinking and checking or cracking in the different segments, and hence the roll is very 15 durable and retains its surface substantially cylindrical and unaffected by this action of the wood, which is liable to occur in the alternate wetting and drying of the roller when 20 used in a wool-washing machine. The employment of separate segments of wood to form each section allows it to be more thoroughly seasoned than if made of one piece. At the same time the grain of the wood af- 25 fords a slightly-roughened surface, which seizes upon the wool as it leaves the greasy liquor of the wool-washer without liability of slipping, which prevents the washed wool from passing through between ordinary 30 squeeze-rolls, and the roughened grain of the wood on the roll-surface is less affected by the greasy liquor squeezed from the wool than almost any other material. At the same time the different parts of the roll are prevented 35 from turning on the shaft and twisting or straining on each other by the metal disks, which, being splined onto the shaft and carried with it, afford a large frictional and hold-

ing surface bearing against the wooden sections at a distance from the shaft radially 40 outward. The large bearing-surface of the segments against each other outside of the disks also aids to hold them firmly in place.

These various advantages of construction enable us to provide wool-washers with rolls 45 very durable and effective and possessing a superior capacity of seizing upon and squeezing the wool under the varying conditions of use to which they are subjected.

What we claim as new and of our inven- 50 tion is—

1. The roll A for wool-washing machines, having a continuous surface formed of a series of separate wooden sections or disks of annular form constituting its outer cylindrical 55 surface, and each being complete in itself and each presenting the end of the grain of the wood radially outward upon all points of such peripheral surface, and all clamped and compressed together on a central shaft with disks 60 between them, substantially as described.

2. The roll A for wool-washing machines, formed of separate wooden sections or disks constituting its outer cylindrical surface and presenting the end of the grain of the wood 65 radially outward upon such surface, in combination with the metal disks c c , splined to the shaft of the roll and provided with projections c' c' of circumferential form embracing the wood between them and the shaft of 70 the roll, substantially as described.

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