

(Model.)

R. G. CAMPBELL.
TOP ROLL FOR TEXTILE MACHINES.

No. 546,639.

Patented Sept. 17, 1895.

Fig. 1

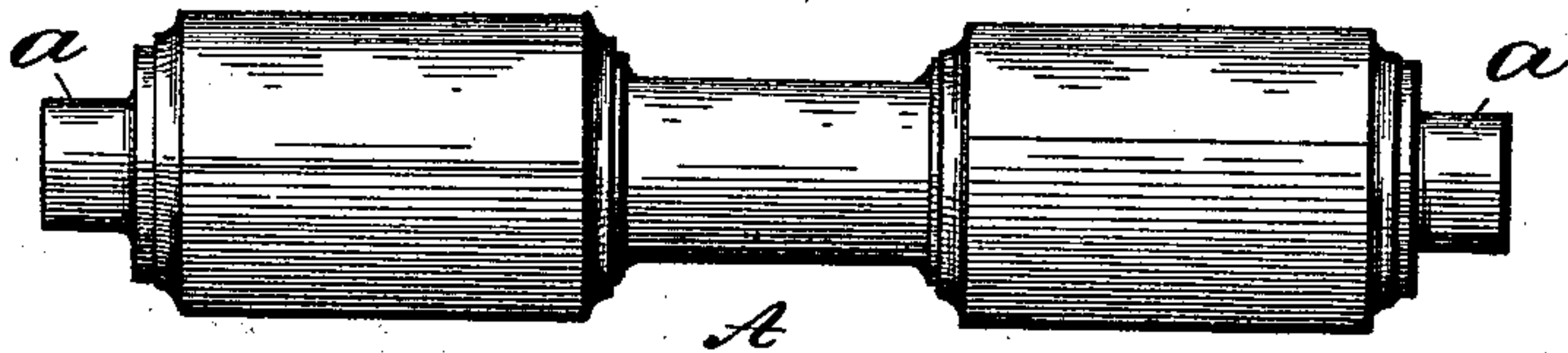


Fig. 2

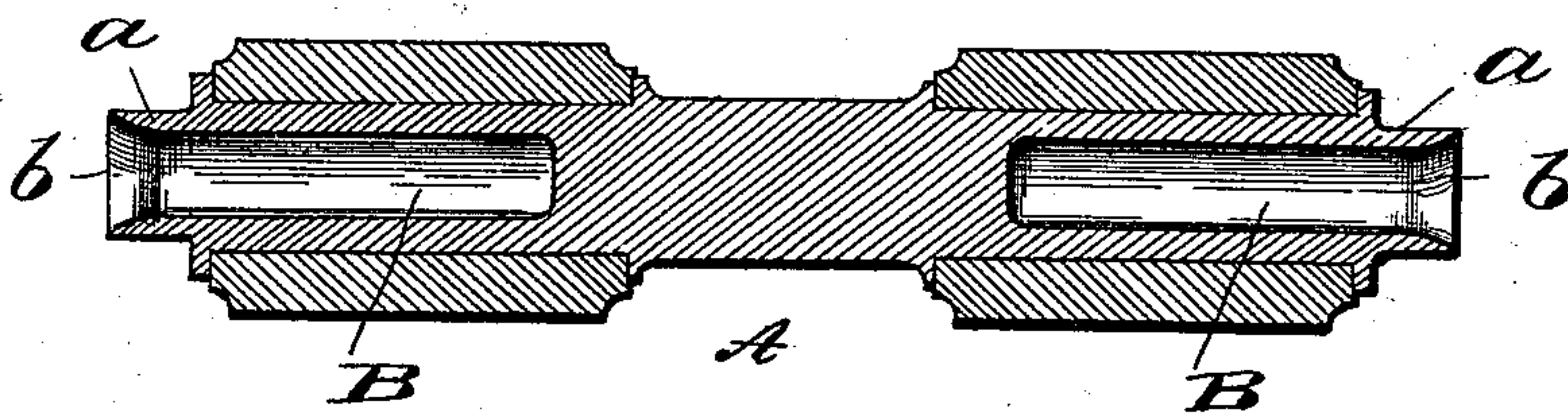
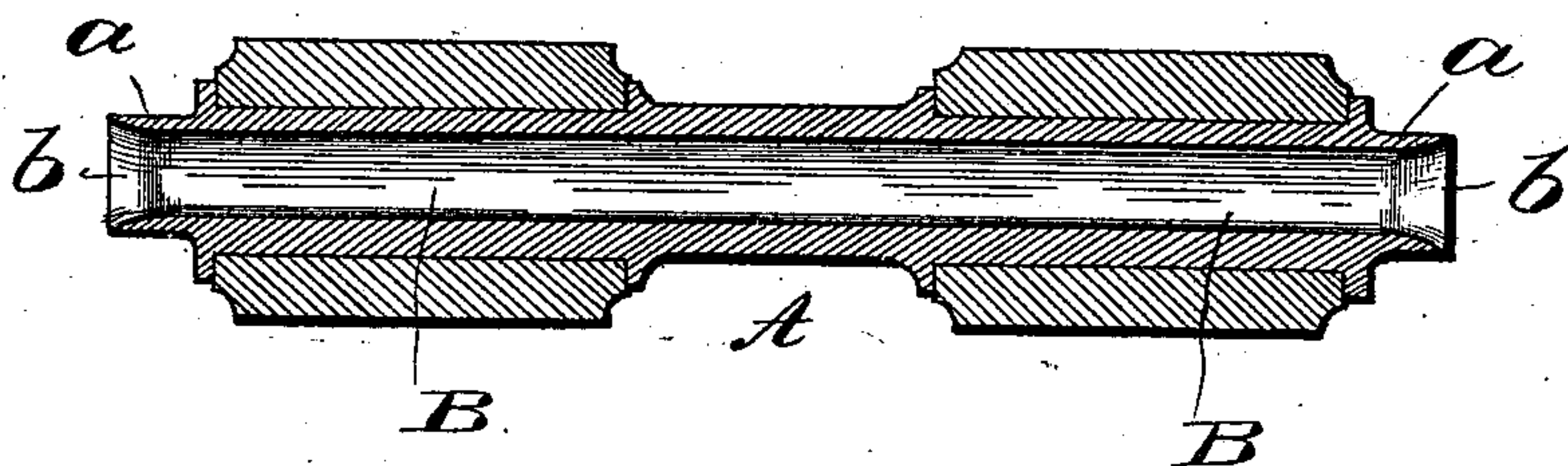


Fig. 3



Witnesses

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UNITED STATES PATENT OFFICE.

ROBERT GILMORE CAMPBELL, OF SALISBURY, NORTH CAROLINA, ASSIGNOR
OF ONE-HALF TO F. J. MURDOCH, OF SAME PLACE.

TOP ROLL FOR TEXTILE-MACHINES.

SPECIFICATION forming part of Letters Patent No. 546,639, dated September 17, 1895.

Application filed March 5, 1896. Serial No. 840,609. (Model.)

To all whom it may concern:

Be it known that I, ROBERT GILMORE CAMPBELL, a citizen of the United States, residing at Salisbury, in the county of Rowan and State of North Carolina, have invented certain new and useful Improvements in the Top Rolls of Machinery Used in Manufacturing Wool, Silk, Cotton, Jute, Hemp, Flax, and other Fibers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My present invention relates to machinery used in the manufacture of sliver, roving, and yarn of wool, silk, cotton, jute, hemp, flax, and other fibers, such as railway-heads, drawing-frames, slubbers, speeders, fly-frames, mules, jacks, and ring-spinning frames, and has especial reference to the top roll used in these machines; and it consists in certain features of construction, which will be fully disclosed in the following specification and claims.

In the accompanying drawings, which form part of this specification, Figure 1 represents a side elevation of my improved roll for a ring-spinning frame; Fig. 2, a vertical longitudinal section, and Fig. 3 a like view of a modified construction.

Top rolls used in manufacturing the fibers named are of two kinds—namely, shell-rolls and solid rolls. The former revolve on a small shaft that is known as a “mantle.” The latter revolve on journals at their ends.

The great difficulty in managing top rolls that have integral journals is that the lint of the material which is being operated upon accumulates on the ends of the revolving journals of the rolls and forms wads which impede and at last stop the motion of the rolls.

When the motion of a roll is impeded, a thin place is made in the roving passing beneath it, which spoils the yarn. When the top roll stops the roving is broken, the top roll is worn out by the steel roll beneath it, and power is wasted in driving the machine.

In my improved roll a chamber is formed in each end of the roll extending from the outer end of the journal inward, and, if desired, the chamber may extend throughout

the length of the roll and its journals. The lint that forms the wads on the ends of the common rolls works its way into the chambers of my improved rolls, into which chambers the lint is pressed as it collects between the ends of the roll and the end wall of the ordinary journal-bearing used for the support of this class of rolls. As the lint collects on the outer side of the wad the wad is pressed into the lint-chambers and continues to accumulate in the chamber or chambers until the chamber or chambers are filled, so that the motion of the rolls is not impeded for a much longer time, as compared with the operation of the common solid rolls in use.

When the roll is provided with a separate chamber at each end, it may be cleaned by the use of a suitable hook; but when the chamber is continuous from end to end of the roll the accumulated lint may be blown out by the mouth of the operator or pushed out by the use of a rod.

Reference being had to the drawings and the letters thereon, A indicates the roll, which in its external construction does not differ from rolls of this kind in common use. At each end of the roll is a lint-chamber B B, which may extend partly through the roll, as shown in Fig. 2, or it may extend through the roll from end to end, as shown in Fig. 3. The entrance to the chambers or chamber is at the outer end of the journals *a a* of the rolls, and said entrance is preferably made to flare outwardly, as shown at *b b*, to guide the wads as they form on the ends of the journals into the chambers B B, where the lint continues to accumulate until the chambers have become filled, which in practice I have found requires several weeks. This accumulation of the lint in the roll has been demonstrated to relieve the roll from being retarded by the accumulation of the wads upon the ends of the journals of the rolls, and consequently there are no uneven places in the sliver, roving, or yarn, and the durability of the roll is greatly increased by being relieved of the grinding action of the lower roll when the top roll has been stopped by the accumulated lint on the ends of the journals.

Having thus fully described my invention, what I claim is—

1. A top roll for textile machinery having journals integral with the roll and provided with open lint chambers in the journals at each end of the roll.
- 5 2. A top roll for textile machinery having journals integral with the roll and provided with open lint chambers in the journals at each end of the roll and said chambers having flaring outer ends.
- 10 3. A top roll for textile machinery having journals integral with the roll and provided with open lint chambers at each end of the roll which extend throughout the length of the roll.

In testimony whereof I affix my signature 15
in presence of two witnesses.

ROBERT GILMORE CAMPBELL.

Witnesses:

O. D. DAVIS,

JAS. M. DAVIS.