

(No Model.)

W. NORRIS.
ROLL FOR RUBBER MIXING MILLS.

No. 540,269.

Patented June 4, 1895.

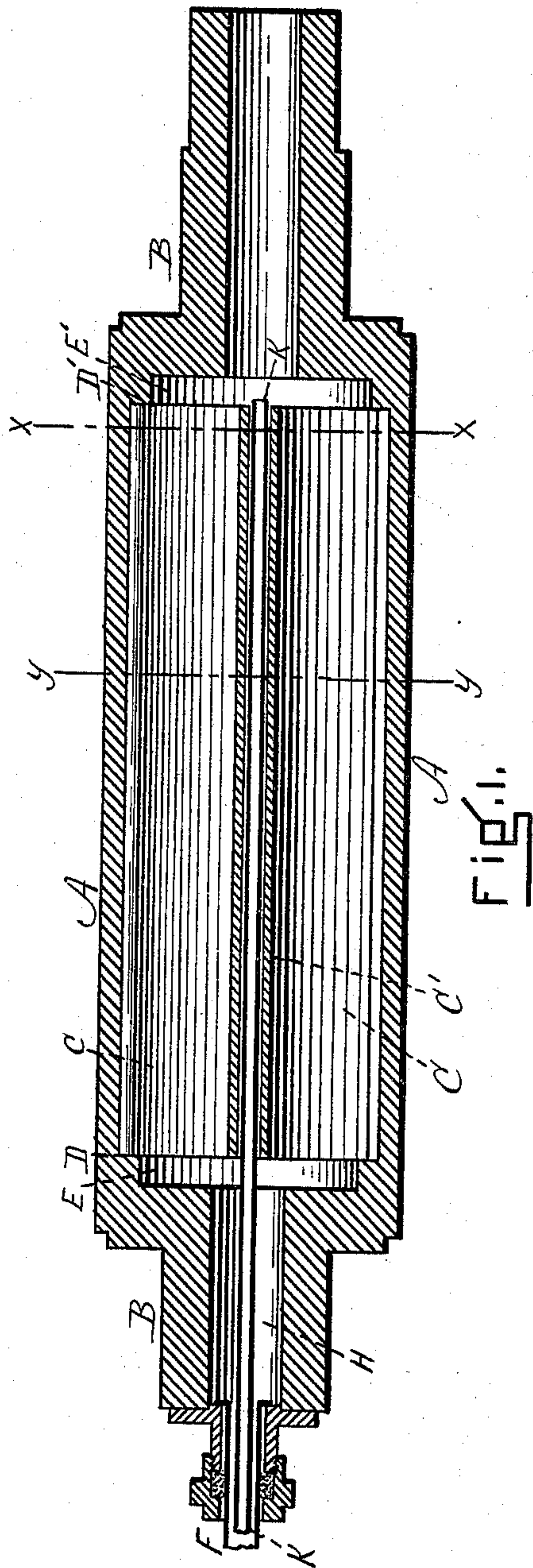


Fig. 1.

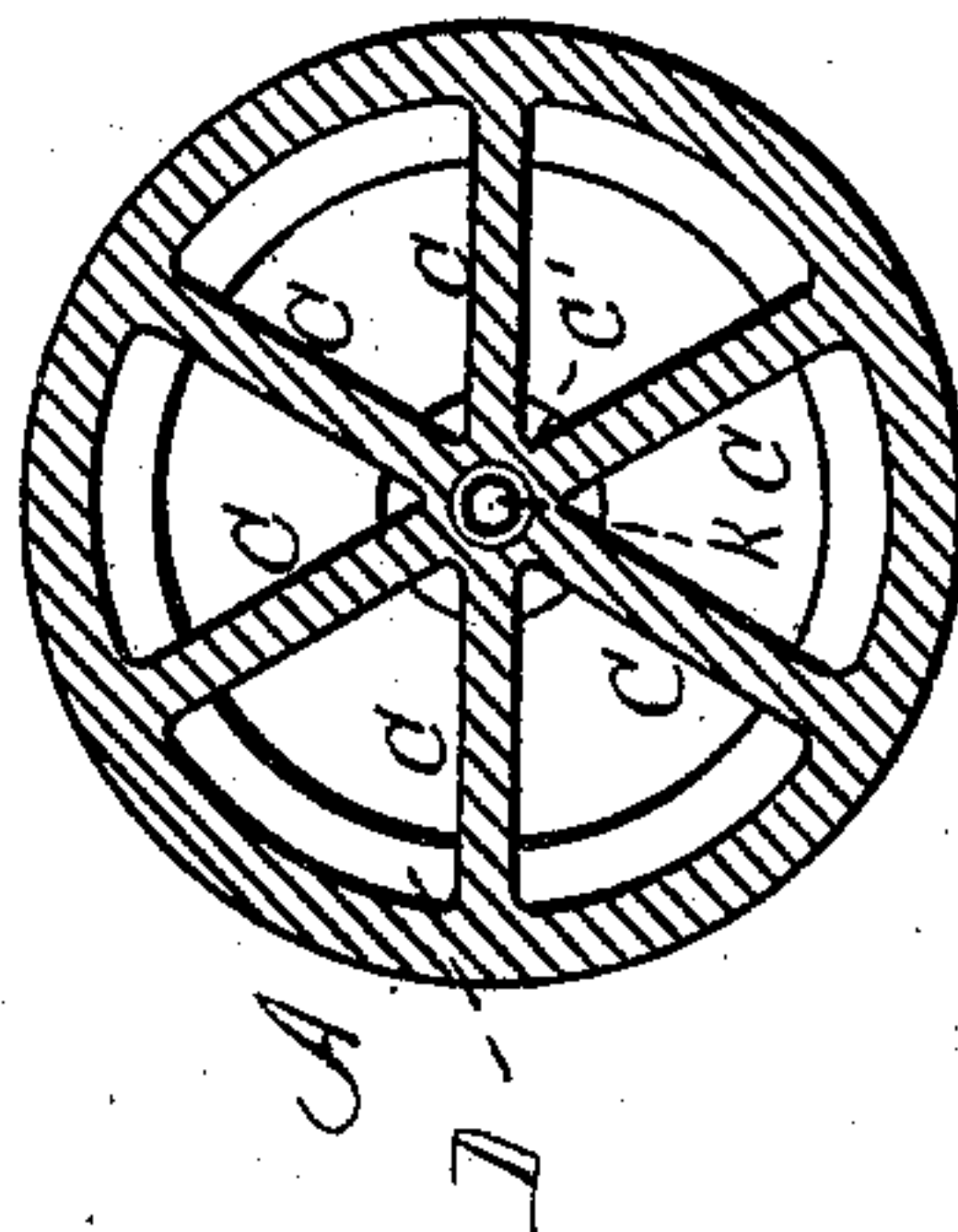


Fig. 3.

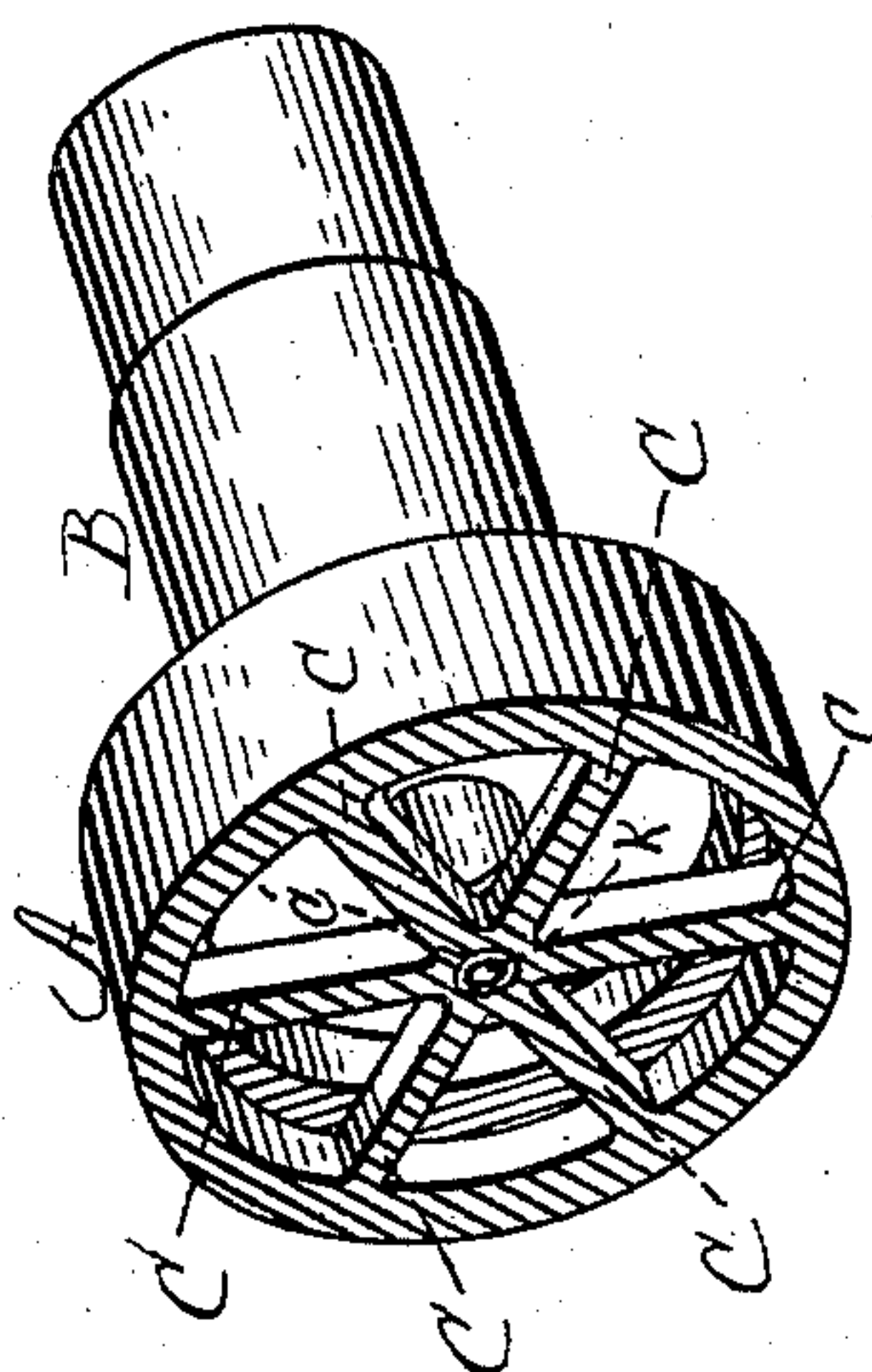


Fig. 2.

WITNESSES

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WEBSTER NORRIS, OF MELROSE, ASSIGNOR TO THE BOSTON RUBBER SHOE COMPANY, OF BOSTON AND MALDEN, MASSACHUSETTS.

ROLL FOR RUBBER-MIXING MILLS.

SPECIFICATION forming part of Letters Patent No. 540,269, dated June 4, 1895.

Application filed March 15, 1895. Serial No. 541,902. (No model.)

To all whom it may concern:

Be it known that I, WEBSTER NORRIS, a citizen of the United States, residing at Melrose, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Rolls for Rubber-Mixing Mills, of which the following is a specification.

This improvement relates to hollow metallic rolls used in rubber mixing mills, and intended to be kept at a desired temperature (according to the work to be performed) by the introduction of steam or hot or cold water; and it is the object of this improvement to so construct the roll that it will admit of being made with a much thinner outer shell, with the effect that the surface of the roll, which is the location of the working temperature, can be much more quickly heated or cooled, as desired.

The nature of the invention is fully described below, and illustrated in the accompanying drawings, in which—

Figure 1 is a longitudinal section of my improved rubber-mixing-mill roll. Fig. 2 is a perspective view and section on line *x*, Fig. 1. Fig. 3 is a section taken on line *y*, Fig. 1.

Similar letters of reference indicate corresponding parts.

A represents the shell of the roll, made comparatively thin, as shown, and B the bearing ends thereof.

C C are radial partitions extending longitudinally from a central hub C'. These partitions do not extend the entire length of the roll, but end at the shoulders D D', beyond which are chambers E E'.

F is an inlet pipe extending to the passage H which connects with the chamber E.

K is an outlet tube which extends into or through the hollow or tubular hub C', thus connecting with the chamber E'.

The steam, or hot or cold water is admitted through the pipe F and passes through the passage H into the chamber E, and thence comes in contact with the shell A within the chambers formed by the radial partitions C, thus heating or cooling the shell evenly and uniformly. Thence the steam or water passes into the chamber E' and out through the outlet tube K. The effect of these partitions C which extend from the hub C' is to so thoroughly brace the shell A of the roll, that instead of being made thick and heavy, it can be made very much thinner than as usual, without weakening it or rendering it liable to break or become crushed by the severe work required of it in a rubber factory, and the result of constructing a roll with such a thin shell is that its temperature can be controlled much more absolutely and raised or lowered much more quickly than is the case where a thick shell is necessary.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

The hereinbefore described improved rubber-mixing-mill roll, comprising the thin shell A, the tubular longitudinal hub C', the radial longitudinal partitions C extending from said hub to said shell, the ends of said partitions being at a short distance inward from the ends of the chamber produced by the hollow roll, whereby intermediate chambers E E' are produced, an inlet tube leading to the first intermediate chamber E, and an outlet tube connecting with the second intermediate chamber E' through the said tubular hub, substantially as described.

WEBSTER NORRIS.

Witnesses:

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