

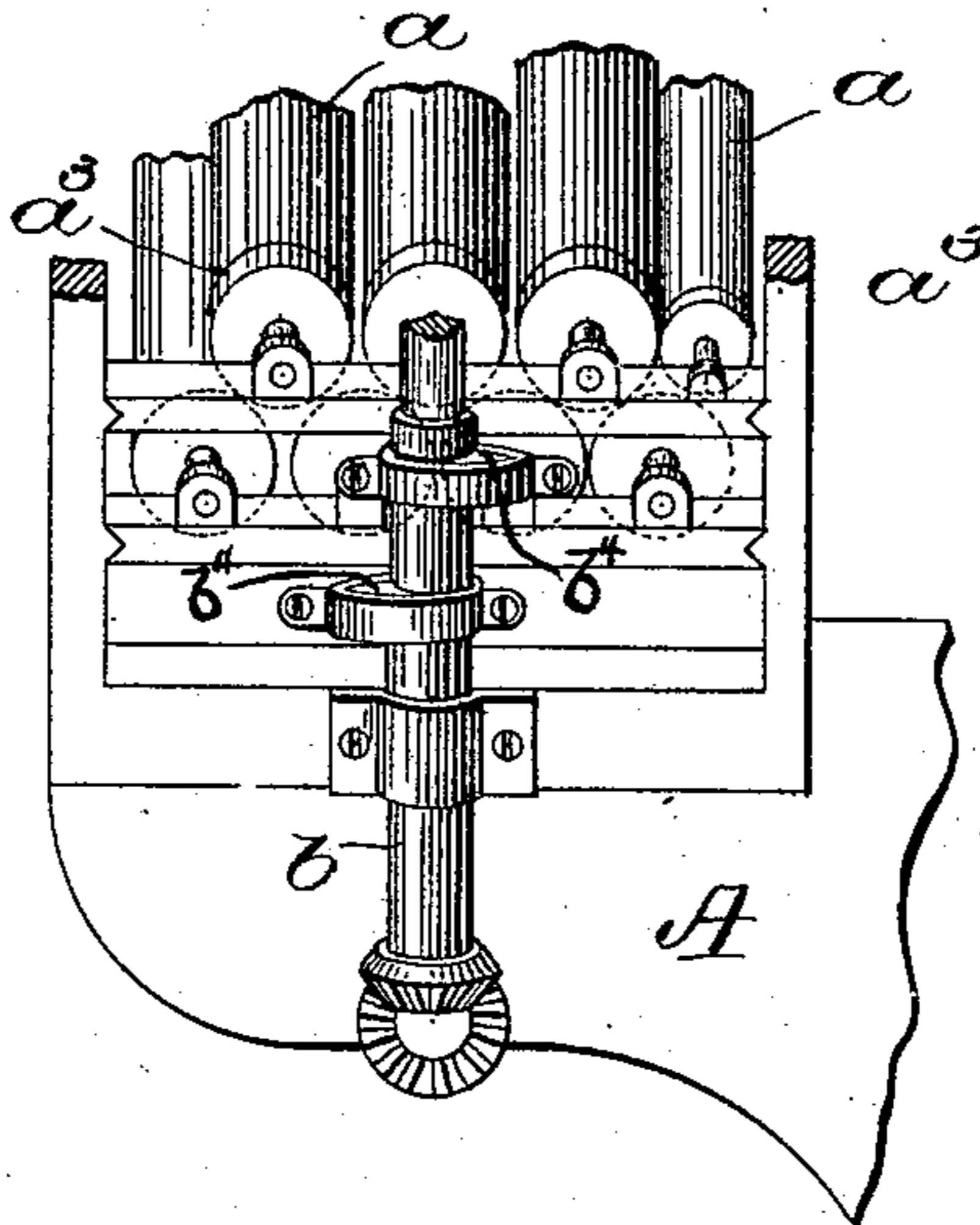
(No Model.)

J. E. McWILLIAM.  
CONDENSER FOR WOOL CARDING MACHINES.

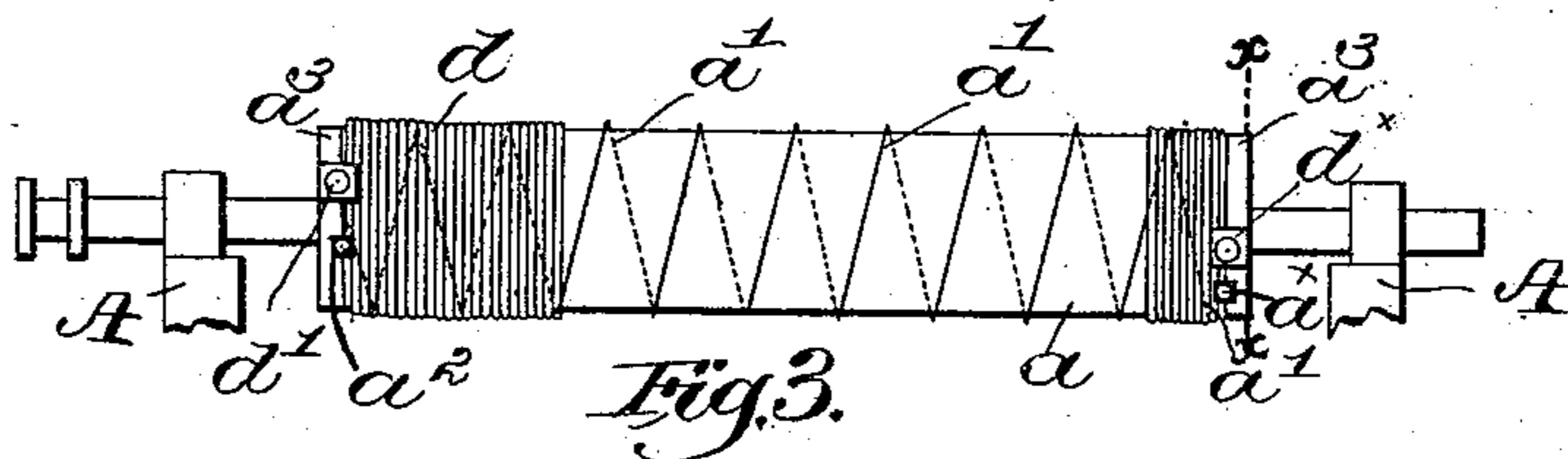
No. 472,740.

Patented Apr. 12, 1892.

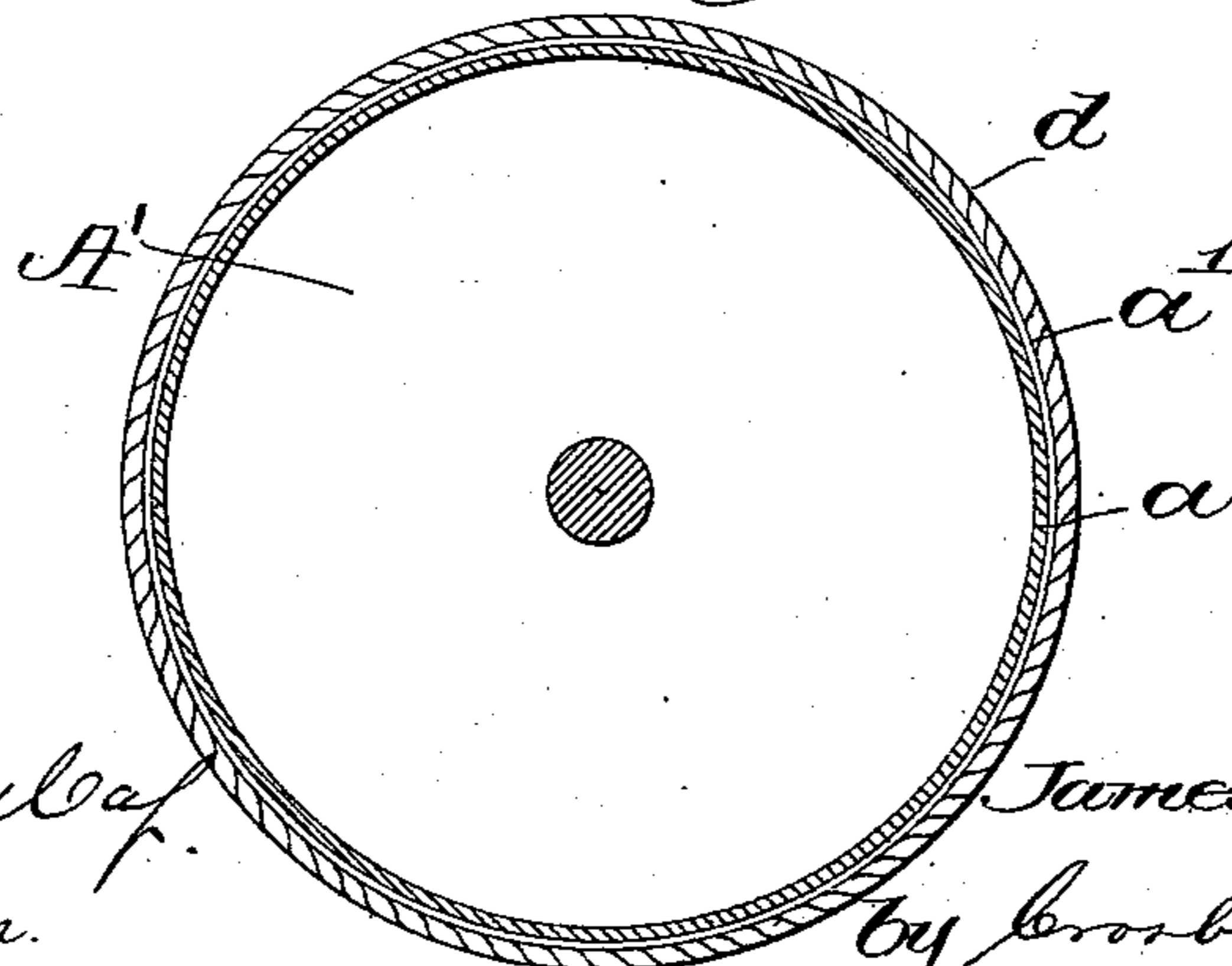
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



Witnesses.

Fred S. Greenleaf.  
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# UNITED STATES PATENT OFFICE.

JAMES E. MCWILLIAM, OF HUBBARDSTON, MASSACHUSETTS.

## CONDENSER FOR WOOL-CARDING MACHINES.

SPECIFICATION forming part of Letters Patent No. 472,740, dated April 12, 1892.

Application filed October 30, 1891. Serial No. 410,324. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES E. MCWILLIAM, of Hubbardston, county of Worcester, State of Massachusetts, have invented an Improvement in Condensers for Wool-Carding Machines, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

Condensing-rolls now commonly employed in connection with wool-carding machines are usually covered with leather, which in use becomes glazed or smooth, so that the covering fails to properly engage the wool roving or slubbing when condensing the same, and as this leather covering becomes smooth it has frequently to be scraped and oiled. To obviate this and to provide a condensing-roll which shall always present a proper working surface suitable to correctly rub the rovings or slubbings, the condensing-roll is wound spirally with a metal strip or wire, over and upon which is wound from end to end of the roll a hard-twisted (preferably) silk and cotton cord. The surface of the roll will preferably be coated with a cement made from gum or varnish, which not only assists in retaining the outer cord in place, but prevents moisture from penetrating to the surface of the roll.

Figure 1 in perspective represents a sufficient portion of a condensing mechanism of a wool-carding machine to enable my invention to be understood. Fig. 2 shows one of the rolls detached and partially covered; and Fig. 3 is a section in the line  $x\ x$ , Fig. 2, but greatly enlarged.

Referring to the drawings, A represents a portion of the delivery end of a wool-carding machine, showing part of the usual condensing mechanism, consisting, essentially, of rolls  $a$ , actuated through eccentrics  $b^4$  on a shaft  $b$ , all as usual.

My invention does not relate to the means for actuating the condensing-rolls, but only to the covering, and the covering may be applied to any usual or well-known form of condensing-roll.

In accordance with my invention I take the condensing-roll of whatever form and connect thereto near one end, as herein shown, Fig. 2, by a clip or fastener  $a^x$  one end of a metallic, preferably copper, strip  $a'$ , which is thereafter wound spirally about the periphery of the

said roll, as shown, and fastened at or near the opposite end of the roll by a fastener  $a^2$ . Over this strip  $a'$  I wind spirally a hard-spun cord, preferably silk and cotton, as  $d$ , this cord being wound closely from end to end of the roll and having its opposite end secured in suitable manner, as by clips or fastenings  $d' d^x$ , as represented. The spirals of the strip and cord are of different pitch, so that the strip offers an obstruction to endwise movement of the superimposed cord-covering.

I find it advantageous to coat the surface of the cylinder A with some usual varnish having body, as the same forms a surface in which to embed the cord and prevent any moisture getting through to the tin surface of the roll, if it be made of tin.

The strip  $a'$  serves not only to retain the cotton cord  $d$  in place and prevent its slipping from the end of the roll, but the ends of the said strip are preferably connected with the metallic journals of the roll in suitable manner, as through the end plates or heads  $a^3$ , so that any electricity which may be generated during the action of the rolls will be carried off by the strip to the journals of the roll, thence to the frame of the machine, from which it may be directed into the ground or discharged from suitable discharge-points.

I claim—

1. A condensing-roll having a metallic retaining-strip wound spirally about its periphery, and an outer surface formed by a fibrous cord wound spirally and closely about the roll over and upon said retaining-strip, the superimposed spirals differing in pitch, substantially as described.

2. A non-metallic condensing-roll having a metallic conducting and retaining strip wound spirally about its periphery, and an outer surface formed by a fibrous cord wound spirally and closely about the roll over and upon said strip and embedded in varnish, the ends of the metallic strip being connected with the journals of the rolls, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JAMES E. MCWILLIAM.

Witnesses:

LOIS E. WARREN,  
LYMAN WOODWARD.