

(No Model.)

A. E. HARDY.

MACHINE FOR FORMING FELT BOOT BLANKS.

No. 421,275.

Patented Feb. 11, 1890.

Fig 1

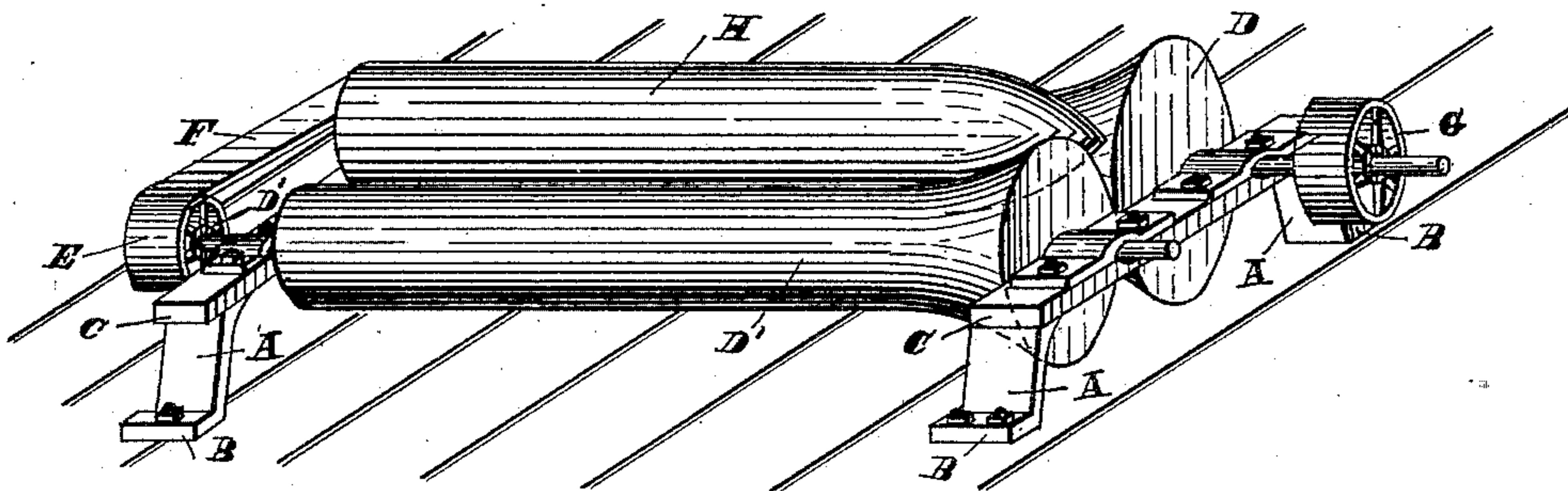


Fig 2

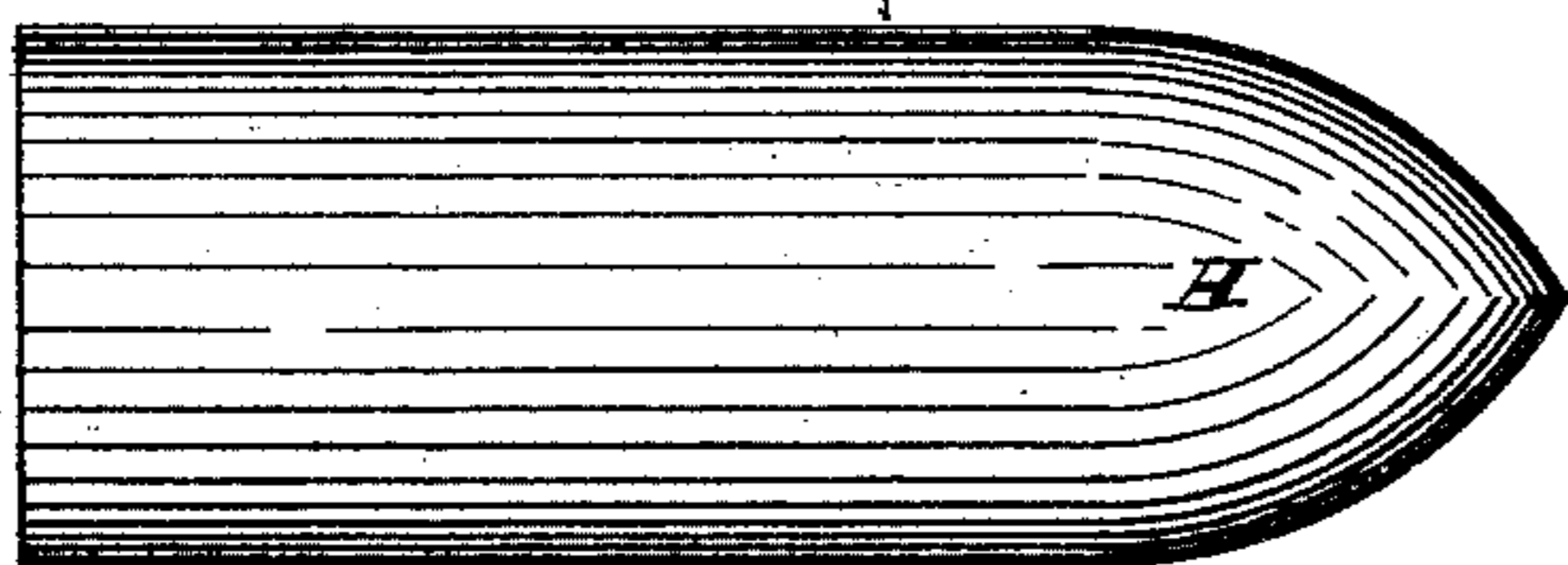
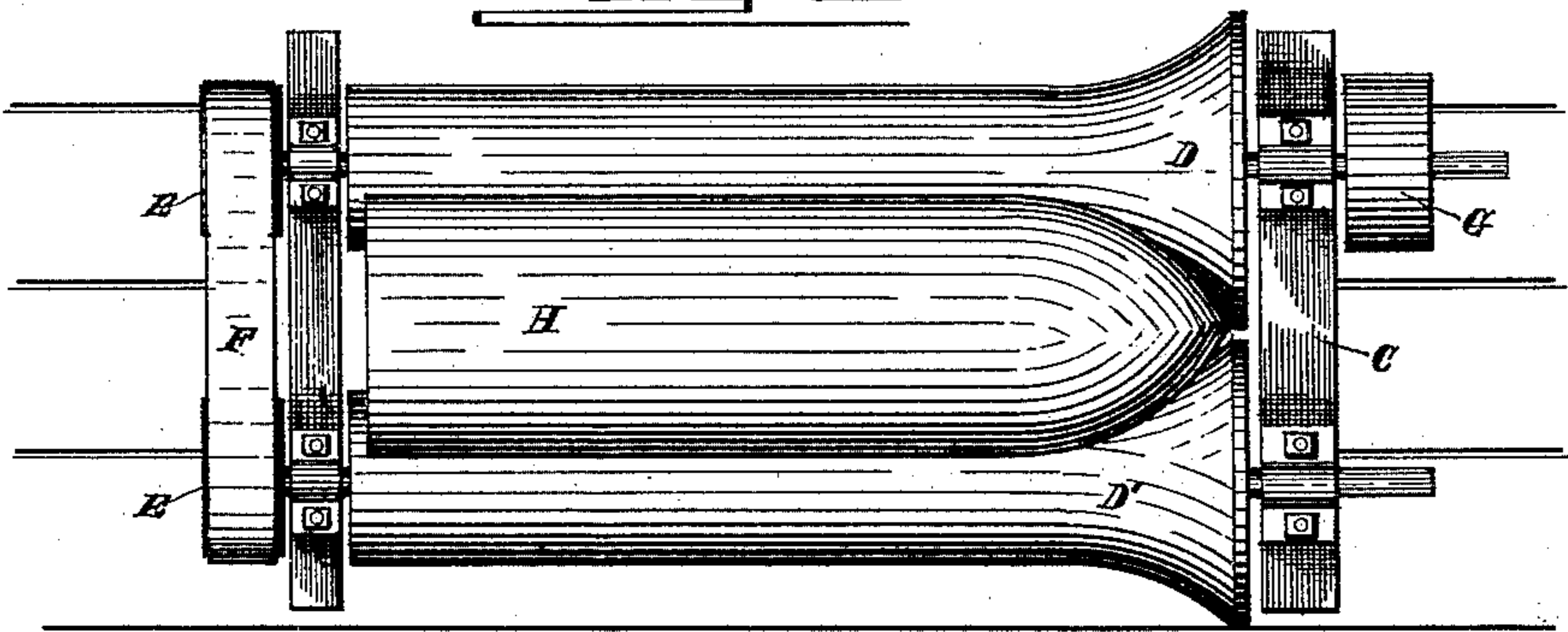


Fig 3

Witnesses

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# UNITED STATES PATENT OFFICE.

AUGUSTUS E. HARDY, OF MISHAWAKA, INDIANA.

## MACHINE FOR FORMING FELT BOOT-BLANKS.

SPECIFICATION forming part of Letters Patent No. 421,275, dated February 11, 1890.

Application filed November 1, 1889. Serial No. 328,897. (No model.)

*To all whom it may concern:*

Be it known that I, AUGUSTUS E. HARDY, of Mishawaka, in the county of St. Joseph and State of Indiana, have invented certain new and useful Improvements in Machines for Forming Felt Boot-Blanks; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification.

This invention relates to certain improvements in machines for forming felt boot-blanks, and it has for its objects to provide for wrapping and felting the felting material as it is delivered from the carding-machine automatically upon the former, so as to produce a blank of uniform thickness throughout.

In the accompanying drawings, forming part of this specification, Figure 1 represents a perspective view of a machine embodying my invention. Fig. 2 represents a top view of the same, and Fig. 3 represents a detached view of the former upon which the felt is wrapped and felted in the construction of the blank.

Referring to the drawings, the letter A indicates two standards, which are provided with bases B, which rest upon and are bolted to the floor of the building in which the machine is located, or to any other suitable support. The said standards are provided with bearings C for the journals of the shafts of the rollers D D'. These rollers are located parallel to each other, and the journals at one end project from their bearings and are provided with pulleys E, over which passes an endless band or belt F, so as to cause the rollers to move simultaneously when motion is imparted to one. The shaft of the roller D is provided with a pulley G, by means of which it may receive motion from a band connected with the driving-pulley of any suitable motor. The rollers D D' in longitudinal section are in the shape of parabolic conoids, their larger ends at their peripheries abutting or nearly abutting against each other.

The letter H indicates a loose roller which

is formed in the shape of a parabolic cone, so as to set accurately in the space between the rollers D D', its apex fitting between the larger abutting ends of the said rollers. The roller D is larger in diameter than the roller D', whereby, if desired, a drawing motion is given to the loose roller H when the machine is in operation; or they may be of same size.

The machine is so located with respect to the delivery or discharge portion of the carding-machine as to receive the felting material between the rollers D and H. The roller H, resting upon the rollers D and D', is held upon the same by its own weight, and rotated upon the same by frictional contact therewith, taking up the felting material as it is delivered and automatically wrapping it upon itself. The wrapping operation effects the felting of the felting material uniformly, and when a sufficient thickness has been produced upon the former or loose roller H it is removed and the felted blank drawn off for subsequent treatment.

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

1. In a machine for forming felt boot-blanks, the combination, with the rollers, of parabolic-conoidal shape in cross section, and the mechanism for operating the same, of the loose parabolic conical former or loose roller upon which the felting material is wrapped and felted automatically, substantially as specified.

2. In a machine for forming felt boot-blanks, the combination, with the parabolic-conoidal rollers of different diameters, of the loose parabolic conical roller, around which the felting material is automatically wrapped and felted, substantially as specified.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

AUGUSTUS E. HARDY.

Witnesses:

JAMES DUSHANE,  
WILL G. GRABILL.