

(No Model.)

2 Sheets—Sheet 1

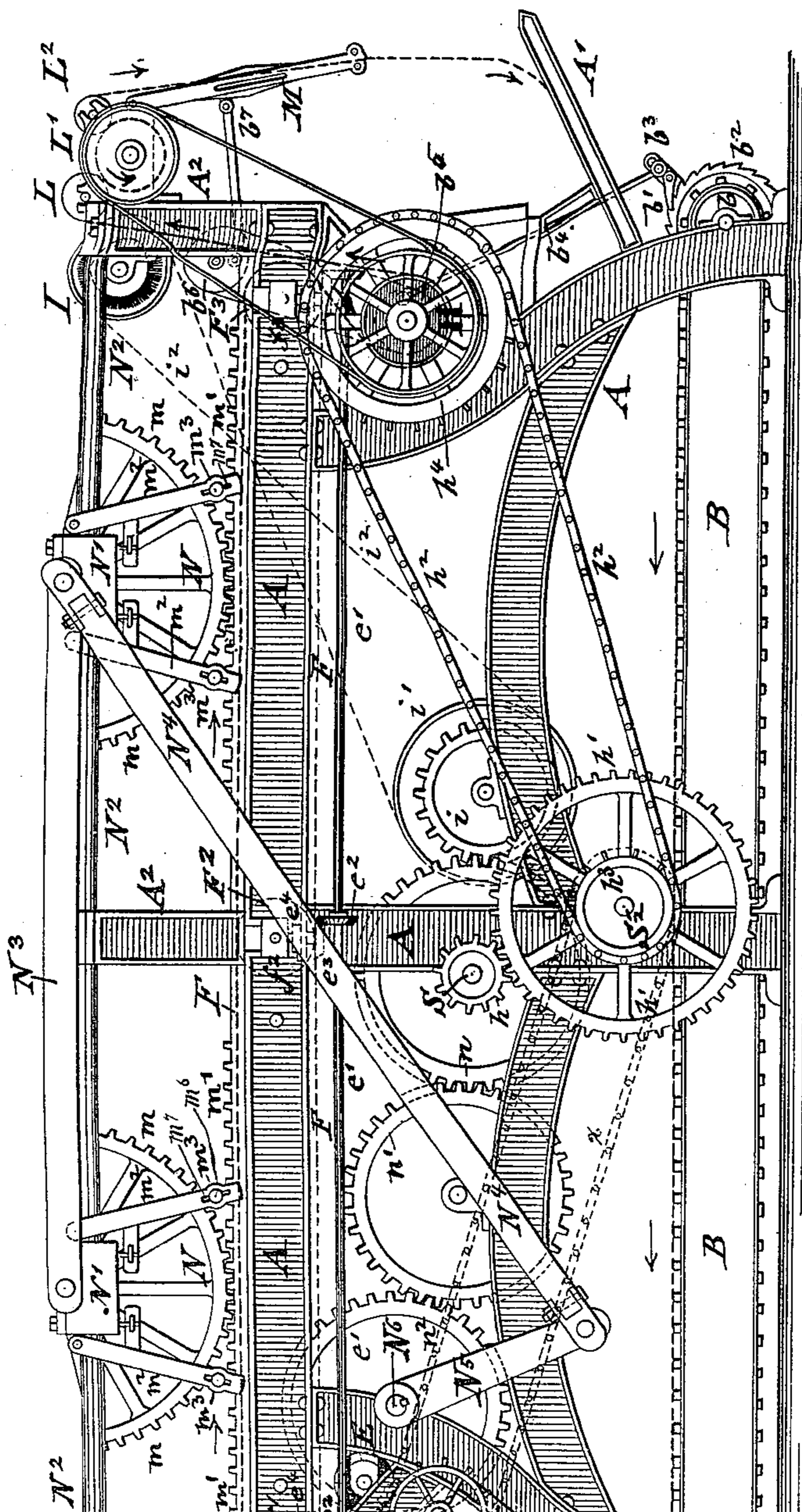
J. WOELFEL.

GIGGING MACHINE.

No. 308,227.

Patented Nov. 18, 1884.

Fig. 1.



# UNITED STATES PATENT OFFICE.

JOSEPH WOELFEL, OF MEDIA, PENNSYLVANIA.

## GIGGING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 308,227, dated November 18, 1884.

Application filed September 10, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH WOELFEL, of Media, Delaware county, State of Pennsylvania, have invented certain new and useful Improvements in Gigging-Machines, of which the following is a specification.

This invention has reference to that class of machines by means of which a uniform nap is obtained on the fabric, and light or heavy woolen or cotton fabrics may be napped in a reliable and effective manner; and it consists of the combination of an endless apron of semi-cylindrical shells, the shaft-bearings of which are reciprocated on longitudinal guide-rods of the supporting-frame and simultaneously oscillated by fixed longitudinal racks secured to the frame, that mesh with toothed segments of the semi-cylindrical shells. The endless apron, which presses the fabric to be napped against the shells, is adjusted higher or lower by a worm-gear engaging a longitudinal transmitting-shaft, which actuates by bevel-gears the bearings of the guiding-rollers of the apron. To the bearings of the semi-cylindrical shells are applied pivoted arms that carry transverse brushes for cleaning the individual cards. Each semi-cylindrical shell is provided at each edge with two narrow card-panels extending longitudinally of the shell through half the length thereof, their inner ends meeting at the center of the shell. These panels are provided, respectively, with teeth bent diagonally in outward direction, and the panels are movable longitudinally of the shells, (transversely of the machine,) for the purpose of stretching the fabric on the carrying-apron laterally to produce a more complete nap thereon.

In the accompanying drawings, Figure 1 represents a side elevation of my improved gigging-machine, and Fig. 2 is a detail vertical transverse section of one of the cylindrical shells. Figs. 3 and 4 are details of the laterally-movable card-panels at the ends of the semi-cylindrical shells, and Fig. 5 is a detail vertical transverse section of one of the brushes for cleaning the card-teeth of the semi-cylindrical shells. Fig. 6 is a detail view showing the connection of the racks with the frame.

Similar letters of reference indicate corresponding parts.

A in the drawings represents an oblong sup-

porting-frame, of suitable size and strength, at the lower part of which is supported, on stretching-rollers *b b*, an endless conveying-apron, B, having transverse slats, upon which the fabric to be napped is placed and intermittently moved forward. From the endless apron B the fabric passes over a ribbed board, C, then around a tension-roller, D, which is retained by a suitable brake device, D', below the roller D, then past a roller, E, that serves to stretch the cloth in lateral direction, whence it is conducted to an endless apron, F, at the upper part of frame A. The endless apron F is stretched and guided on rollers *F' F<sup>2</sup> F<sup>3</sup>*, which are supported in suitable bearings, *f' f<sup>2</sup> f<sup>3</sup>*, of frame A. The cloth passes at the opposite end of the apron F downward and around a drawing-roll, H, then in upward direction past a revolving brush, I, and around the rollers *L L' L<sup>2</sup>* to the oscillating folding mechanism M, by which it is folded onto an inclined table, A', and then returned to the opposite end of the endless apron B at the lower part of frame A, as will appear clearly by reference to Fig. 1, in which the course of the cloth is indicated by arrows and dotted lines. The endless apron F can be stretched tightly in longitudinal direction on the end rollers, *F'* and *F<sup>3</sup>*, by means of arms *d*, that are applied to the shaft of the roller *F'*, guided in eyes *d'* of frame A, and adjusted by screw-nuts *d<sup>2</sup>* at the threaded ends of the arms, whereby the shaft of the roller *F'* can be adjusted in horizontal slots of the bearings *f'*. The endless apron F can further be vertically adjusted so as to be set closer to or farther from the semi-cylindrical napping-shells N by means of a hand-wheel, O, the shaft of which turns in bearings at one end of frame A, and carries a worm that engages a pinion, *e*, at the end of a longitudinal shaft, *e'*, which turns in suitable bracket-bearings of frame A. To the shaft *e'* are keyed bevel-wheels *e<sup>2</sup>*, which mesh with bevel-wheels *e<sup>3</sup>*, the vertical shafts of which are threaded and extended through fixed nuts *e<sup>4</sup>* of the bearing of the frame A, so as to abut against the bottom of the bearings *f' f<sup>2</sup> f<sup>3</sup>* of the stretching-rollers *F' F<sup>2</sup> F<sup>3</sup>*, as shown in Fig. 1. The bearings *f' f<sup>2</sup> f<sup>3</sup>* are guided in recesses of the frame A, that admit the up-and-down motion of the bearings.

By turning the hand-wheel O in one or the

chine can be regulated by changing the size of the sprocket-wheel, by which motion is transmitted to the drawing-roll H. When moist goods have to be carded, the brake-roller D can also be used as a drawing-roll, in which case it is connected, by a direct chain,  $x$ , (shown in dotted lines, Fig. 1,) and sprocket-wheels, to the shaft  $S^2$ .

The advantages of my improved gigging-machine are:

First, owing to its simple construction, the same can be built at a considerably smaller expense than the more complicated gigging-machines heretofore in use.

Second, owing to the rolling motion of the napping-shells, a better entrance of the teeth of the cards into the cloth is obtained than by means of the reciprocating cards, and, consequently, a more uniform nap produced.

Thirdly, by the means employed for laterally carding and stretching the cloth, a fuller nap is produced, as the warp-threads are also raised or napped.

Fourthly, owing to the continuous clearing action of the brushes, the card-teeth enter and engage the cloth in a regular manner, as the filling up of the card-teeth is prevented.

Fifthly, the endless apron over which the cloth passes secures a uniform carding of the cloth, whether the same is creased or otherwise uneven.

Sixthly, the machine can be built for any desired width without weakening the carding-strips, as these are attached to the shells at different points in a strong and reliable manner, so that no vibration or binding of the carding-teeth can take place.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination of an endless cloth-carrying apron, means for drawing the cloth over the apron, semi-cylindrical napping-shells, means whereby they are reciprocated, and means whereby they are simultaneously oscillated on their axis, substantially as set forth.

2. The combination of an endless cloth-carrying apron, means for vertically adjusting the same, means for drawing the cloth over the apron, semi-cylindrical napping-shells supported in bearings above the cloth, means whereby they are reciprocated, and means whereby they are simultaneously oscillated in their bearings, substantially as specified.

3. The combination of an endless cloth-carrying apron, means for drawing the cloth over the apron, semi-cylindrical napping-shells, means for imparting a rolling motion to the same, and transverse brushes for cleaning the card-teeth of the shells, substantially as set forth.

4. The combination of an endless cloth-carrying apron, means for drawing the cloth over the apron, semi-cylindrical napping-shells, means for imparting a rolling motion to the shells, transverse cleaning-rollers provided with projecting brushes, and pivot-arms extending from the bearings of the shells for supporting said rollers, substantially as set forth.

5. A roller-brush for cleaning the teeth of the napping-shells, constructed of a longitudinally-slotted cylindrical shell, projecting bristles, and interior semicircular clamping strips, substantially as set forth.

6. A semi-cylindrical napping-shell provided with fixed card strips or panels and with transverse, centrally-divided, and laterally-movable panels, substantially as specified.

7. A semi-cylindrical napping-shell provided with fixed card strips or panels and with centrally-divided transverse panels having diagonal cards, said panels being connected by pivot-links to fixed strips of the shell and by lateral tension-springs, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

JOSEPH WOELFEL.

Witnesses:

GEO. B. BOWDEN,  
RALPH BUCKLEY.



(No Model.)

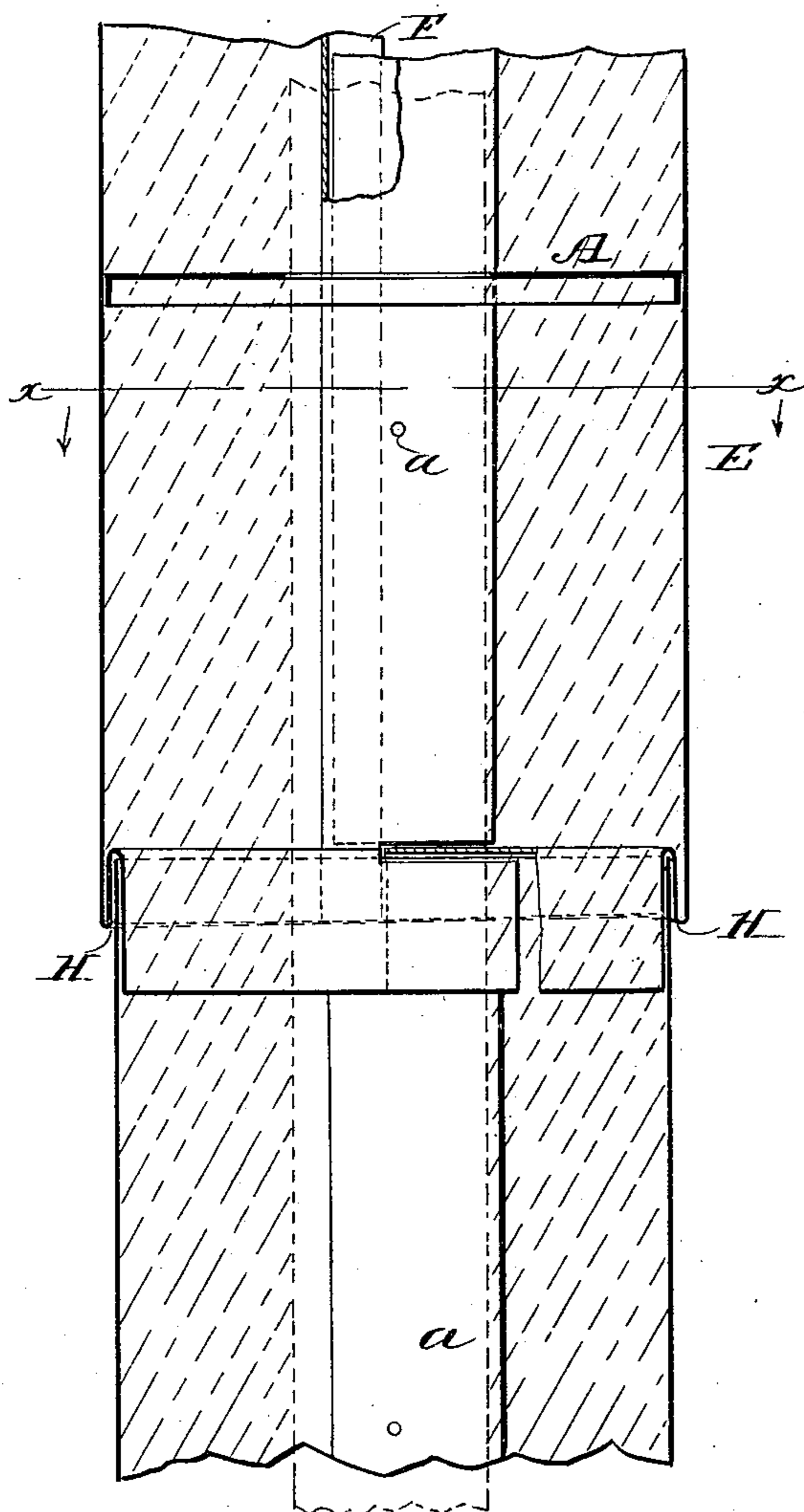
JAMES F. & JOHN F. WOOD.

CASING FOR PIPES.

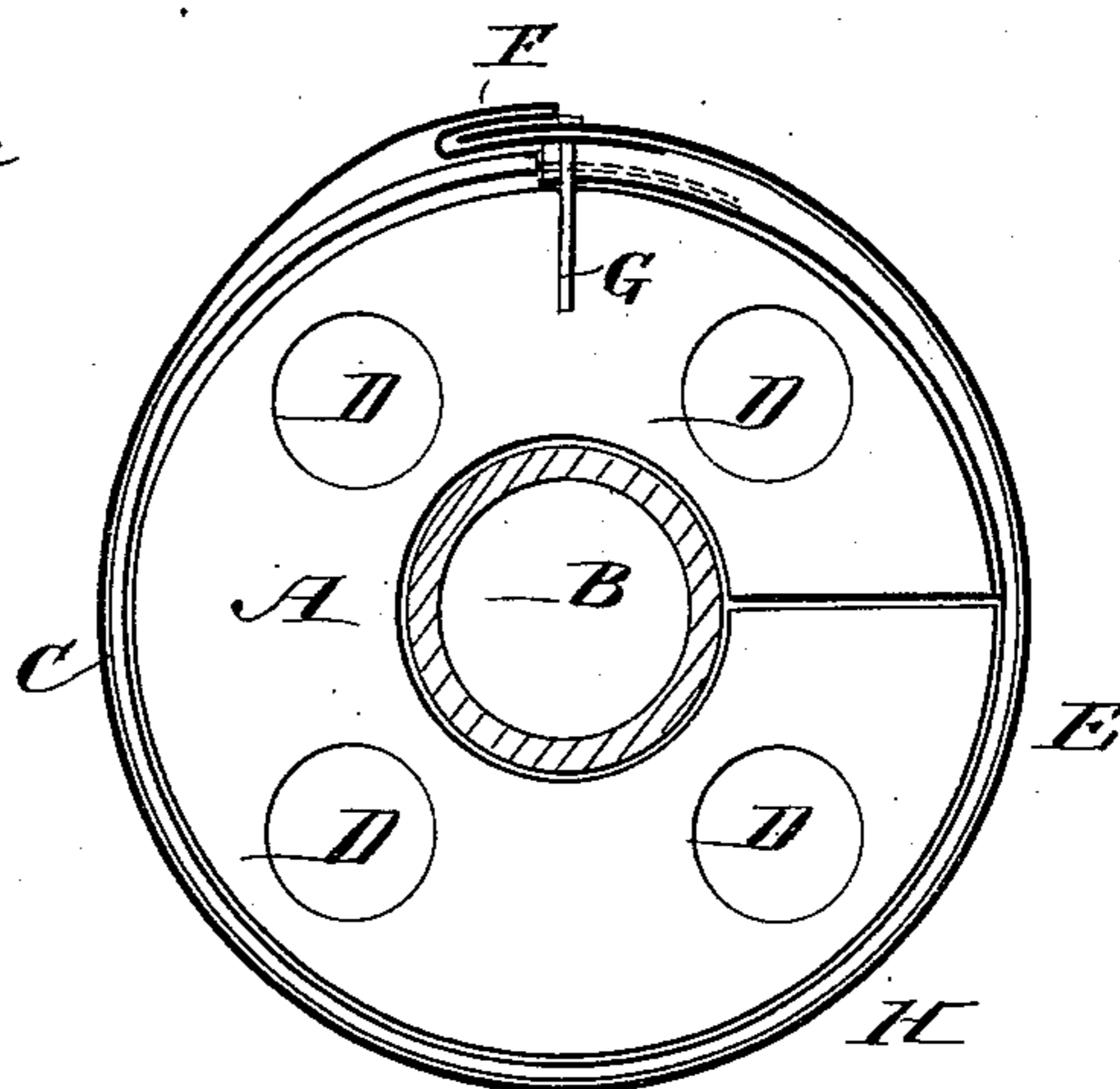
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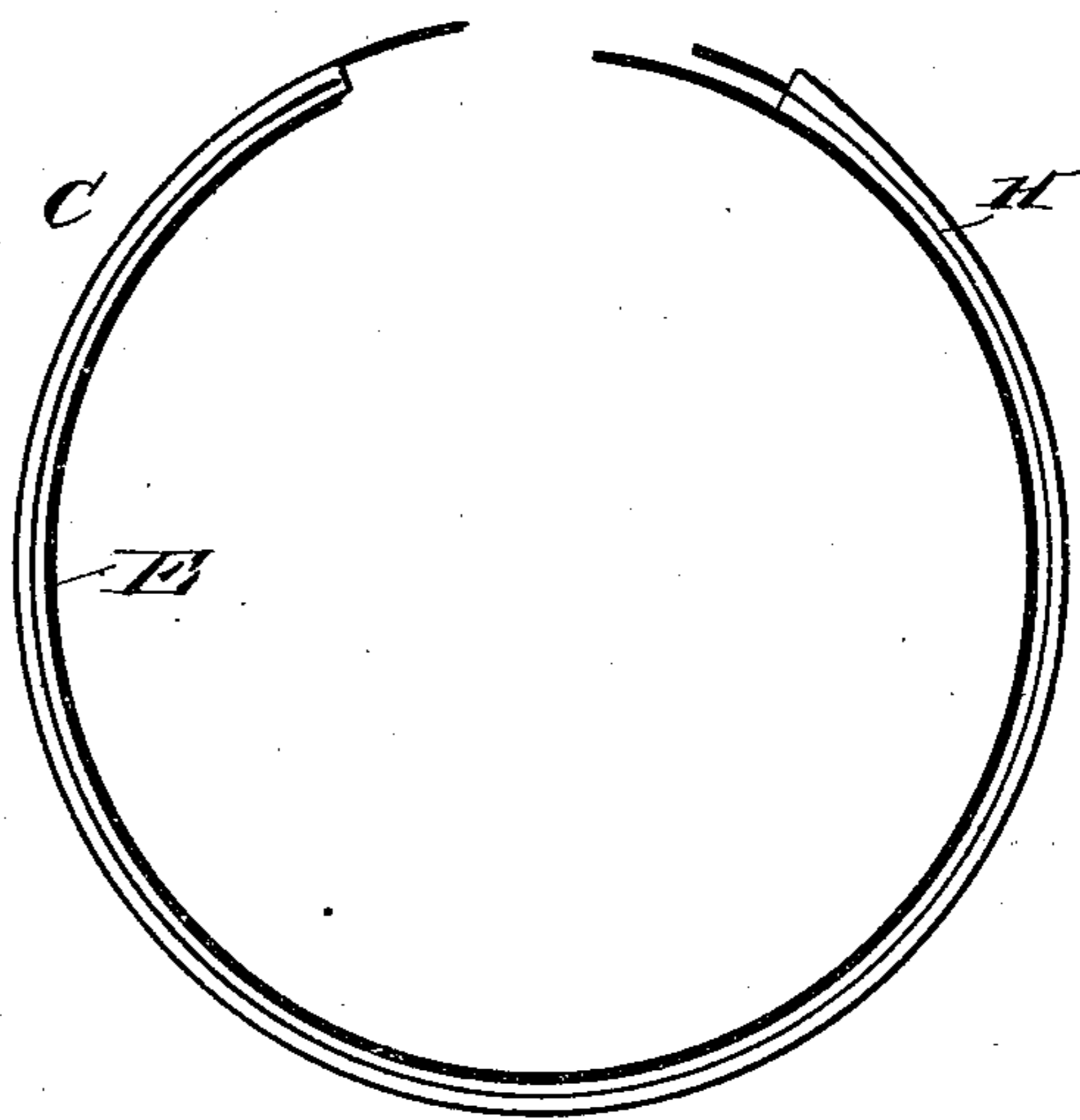
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



WITNESSES:

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