

(No Model.)

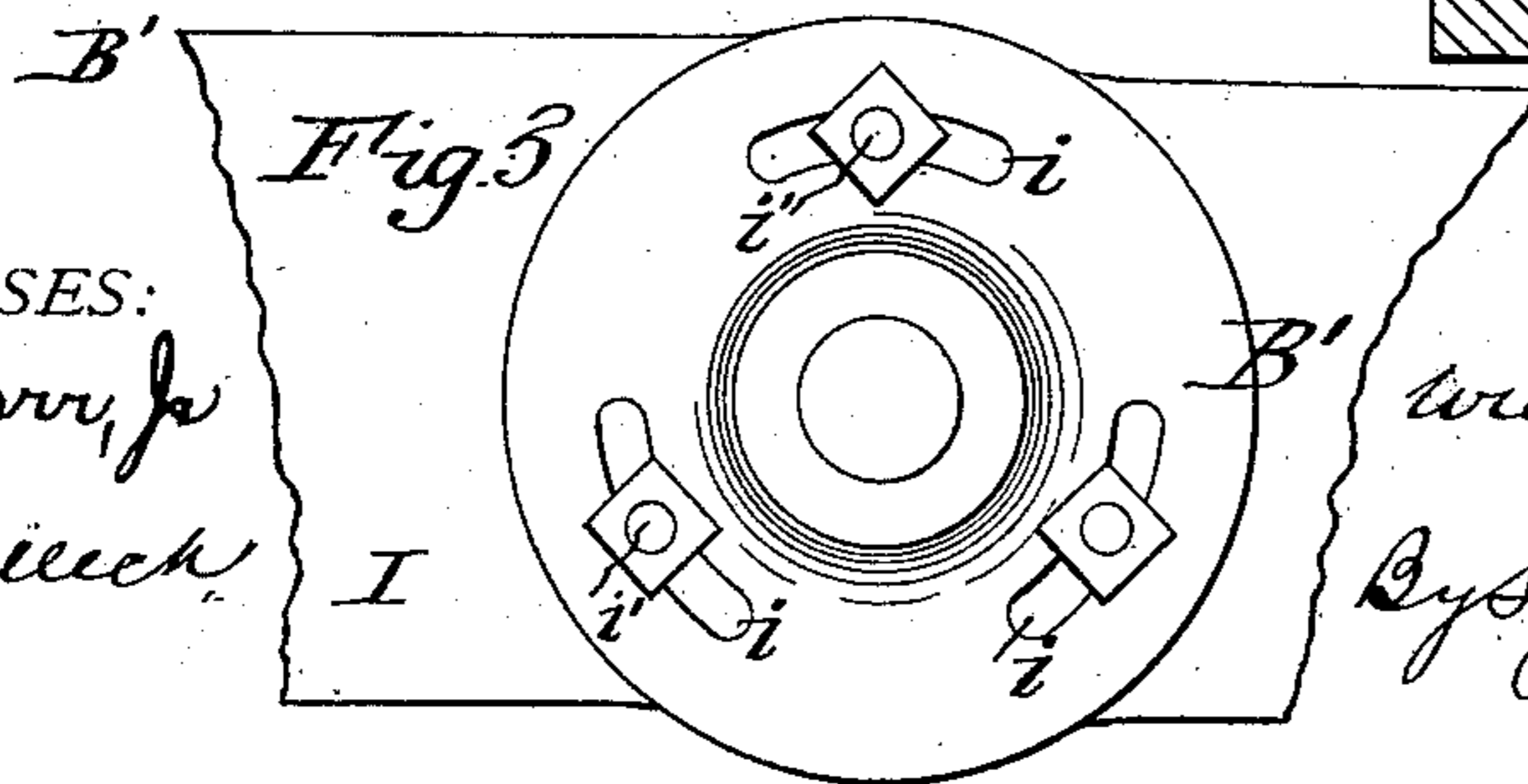
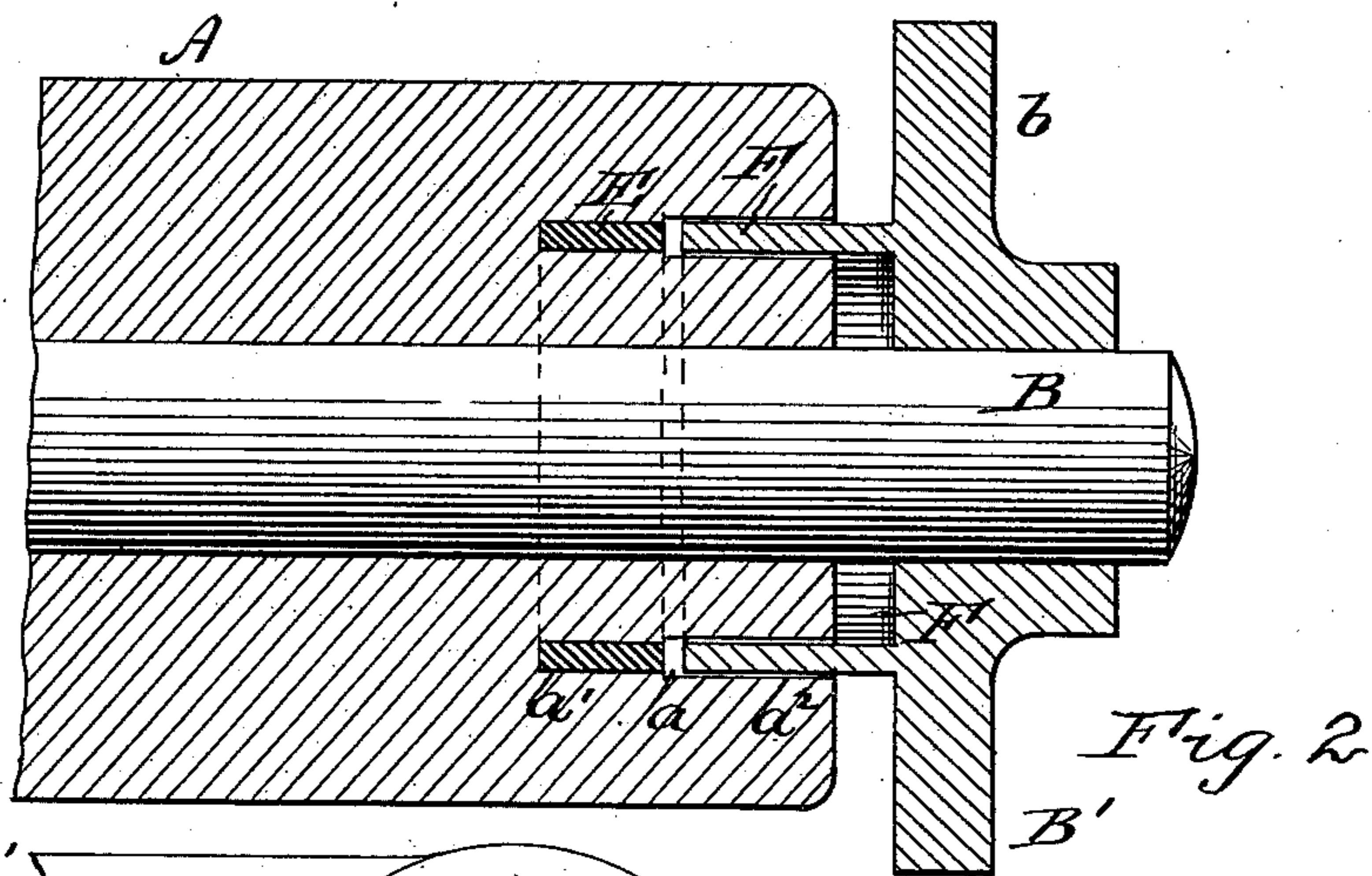
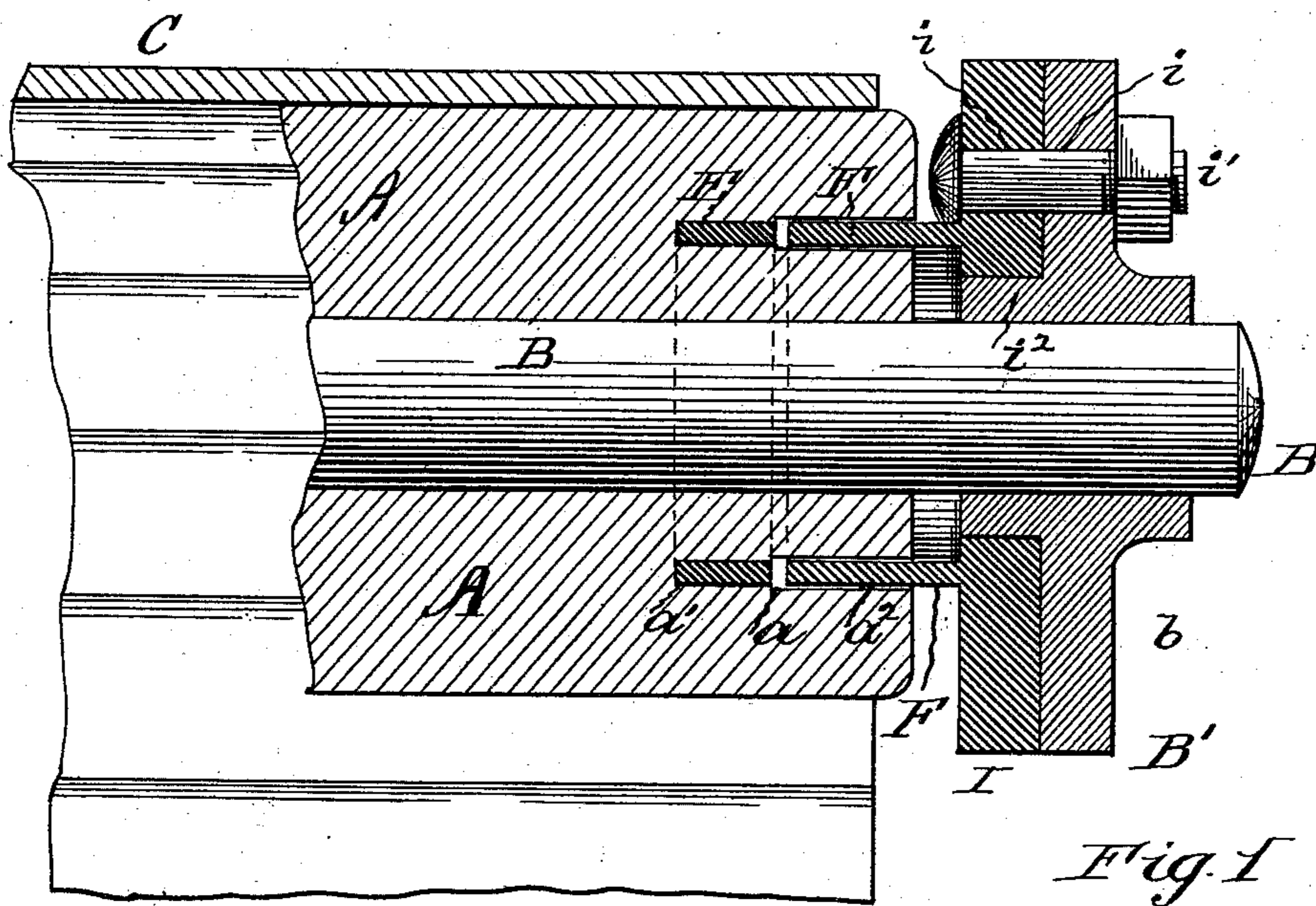
2 Sheets—Sheet 1.

W. SCHOFIELD.

ROLLER FOR ENDLESS APRONS FOR CARDING MACHINES, &c.

No. 351,531.

Patented Oct. 26, 1886.



WITNESSES:

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(No Model.)

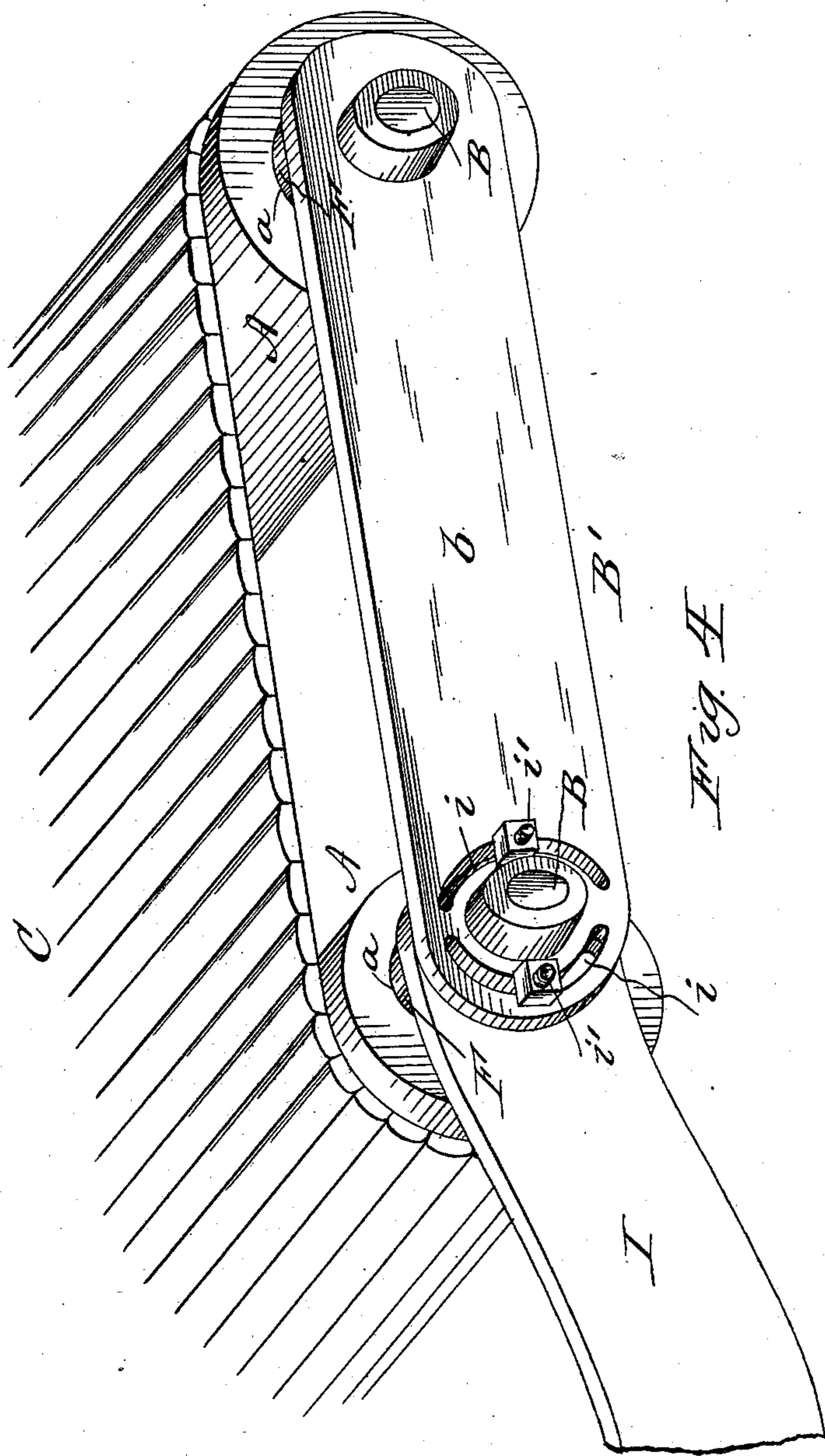
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Witnesses
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UNITED STATES PATENT OFFICE.

WILLIAM SCHOFIELD, OF PHILADELPHIA, PENNSYLVANIA.

ROLLER FOR ENDLESS APRONS FOR CARDING-MACHINES, &c.

SPECIFICATION forming part of Letters Patent No. 351,531, dated October 26, 1886.

Application filed May 29, 1886. Serial No. 203,656. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM SCHOFIELD, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Rollers for Endless Aprons for Carding and other Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention has relation, generally, to rollers for endless aprons, but more particularly to the rollers for endless aprons used in carding or other like machines for transferring the stock, web, or fiber from one part of the machine to another; and it has for its object to prevent stray stock or fiber gaining access to and accumulating on, within, or about the gudgeons or journal-bearings of the rollers. Heretofore these journals and their bearings have mainly been so constructed that the loose fibers or stray stock has easy access to the journal-bearings, and winds about the journals or accumulates thereon within the journal-bearings to such extent as to materially interfere with the freedom of rotation of the roller, and oftentimes ultimately stops its rotation. In many cases, however, before the accumulation of stock or fiber on the journal stops the rotation of the roller, the undue friction induced by such stock generates heat sufficient to ignite the same, and thereby endangers the safety of the building in which the devices are located. My improvements, in preventing the accumulation of stray fibers about the roller-journals and their bearings, secure, therefore, freedom of rotation of the rollers at all times, and avoid all liability of fire or like accidents.

My invention accordingly consists of a roller having at its ends, or between its gudgeons or journals and its periphery, cups or guard-rings, which provide a tortuous path for the passage of stray stock to the roller-journal bearings, and which keep such stock near to the roller periphery, so that the same may from time to time be easily removed to avoid undue accumulation about said rings. These rings or guards are preferably formed on or secured to the inner sides of the parts of the roller-frame adjacent to the ends of the roller, and they

enter annular recesses bored or made in the roller-ends. To compensate for the loss of strength at the ends of the rollers due to boring the annular recesses therein, the latter are sunk into the roller-ends for a considerable depth, and are preferably of a less width in cross-section at their inner ends than at their outer ends, and annular metal bands are tightly inserted or driven into the recesses in advance of the guard-rings to form interior clamping-bands to strengthen the roller-ends.

Referring to the accompanying drawings, in which Figure 1 is a section showing one end of a roller, its gudgeon or journal, part of endless apron, part of the roller-frame, and my improvements. Fig. 2 is a like view showing my improvements applied to a modified form of roller-frame side-bar. Fig. 3 is a side elevation of frame side-bar shown in Fig. 1, and Fig. 4 is a perspective of part of apron, rollers, and roller-frame.

A represents one end of a wooden or other roller; B, its gudgeon or journal, inserted in the roller in the well-known manner; C, part of the endless apron, and B' part of a side-bar of the roller-frame.

In each end of the roller A, and surrounding the journal B, is bored or formed an annular recess, a , which is sunk into the roller for a considerable depth, and decreases in width or in cross-section as it is bored, so that it has an inner part, a' , of less width in cross-section than that of its outer part, a^2 . This difference in width or cross-section of the recesses is provided for at the time of boring by a suitably-shaped chisel or boring-tool.

In the inner or smaller part, a' , of the recess a is inserted, preferably, a metal band or ring, E, which is of such diameter that it tightly fits the inner end of the recess, and forms an interior clamping-band for strengthening the end of the roller, or it compensates for any weakness produced by boring the recess a , and also prevents the roller-end splitting or otherwise deteriorating.

When the roller A is in position upon its frame or bearings B', the outer ends, a^2 , of the recesses a receive the annular cups, sleeves, or rings F, formed on or secured to the adjacent inner sides of the frame B', and as these

recesses *a* at their outer ends are of a slightly larger width in cross-section than that of the cups *F*, and as the roller is supported upon its journals, the roller-ends rotate about the
5 cups or sleeves *F* without friction.

In Fig. 2 the cups or sleeves *F* are shown cast on or secured to the side-bars *b* of roller-frame *B'*. In Figs. 1 and 4, however, the sleeves or cups *F* are shown cast on or secured to bars
10 *I*, which project forwardly from the front ends of the roller-frame, which bars *I* may be used for the reception of a swinging frame, as shown in a pending application, filed by me the 30th day of March, 1886, and serial numbered
15 197,171. The bars *I* are connected to the forward ends of frame *B'* by means of registering-slots *i* in said bars *b* and *I*, which slots are concentric with the roller-journal *B*, and in said slots are bolts or screws *i'* with nuts, to admit
20 of adjusting said bars *I* and retaining them in position. In this case the side-bars *b* of frame *B'* have bearings for the journals of the rollers in a shoulder, *i²*, which also serves as a joint or swivel connection for the bars *I*, to which
25 is secured the cup or guard-ring *F*. By adjusting the bolts or screws *i'* the inclination of the bars *I* may be varied as desired.

The employment of the cups or guard-rings *F*, entering recesses *a* in the ends of the roller,
30 provide a tortuous path for the passage of the stray stock or fibers to the journal bearings, as such stock must pass into recess *a*, and thence around the edge of cup or guard-ring *F*, and out of the recess before it gains access to the
35 roller-journal bearings. Before doing this, however, it accumulates upon the periphery of the cup or guard-ring *F*, and as its periphery is near to that of the roller the accumulation of stray stock may from time to time be

easily removed by hand or any suitable tool. 40
The stray stock not being able to find its way into the roller-journal bearings, the rollers are free at all times to normally revolve, and all danger from fire or other like accidents is avoided by the use of my improvements. 45

What I claim is—

1. A roller having annular recesses in its ends and interior clamping or strengthening bands, in combination with a frame or support having cups or guard-rings *F* entering said re- 50
cesses, substantially as set forth.

2. A roller having end recesses, interior clamping bands, and guard-rings adapted to said recesses, substantially as and for the purpose set forth. 55

3. The combination of rollers *A*, having gudgeons or journals *B* and end recesses, *a*, the roller-frame *B'*, having bearings for said gudgeons, and adjustable bars *I*, having sleeves or guard-rings *F*, adapted to recesses *a*, substan- 60
tially as set forth.

4. In combination with a roller having end journals and recesses, clamping-bands in said recesses, and a frame or support having cups or rings projecting into said recesses, substan- 65
tially as set forth.

5. In combination with a roller having end recesses of different width in cross-section, clamping-bands in said recesses, and a frame or support having guard-rings for the ends of 70
said rollers, substantially as set forth.

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

WILLIAM SCHOFIELD.

Witnesses:

JOHN RODGERS,
S. J. VAN STAVOREN.