

(No Model.)

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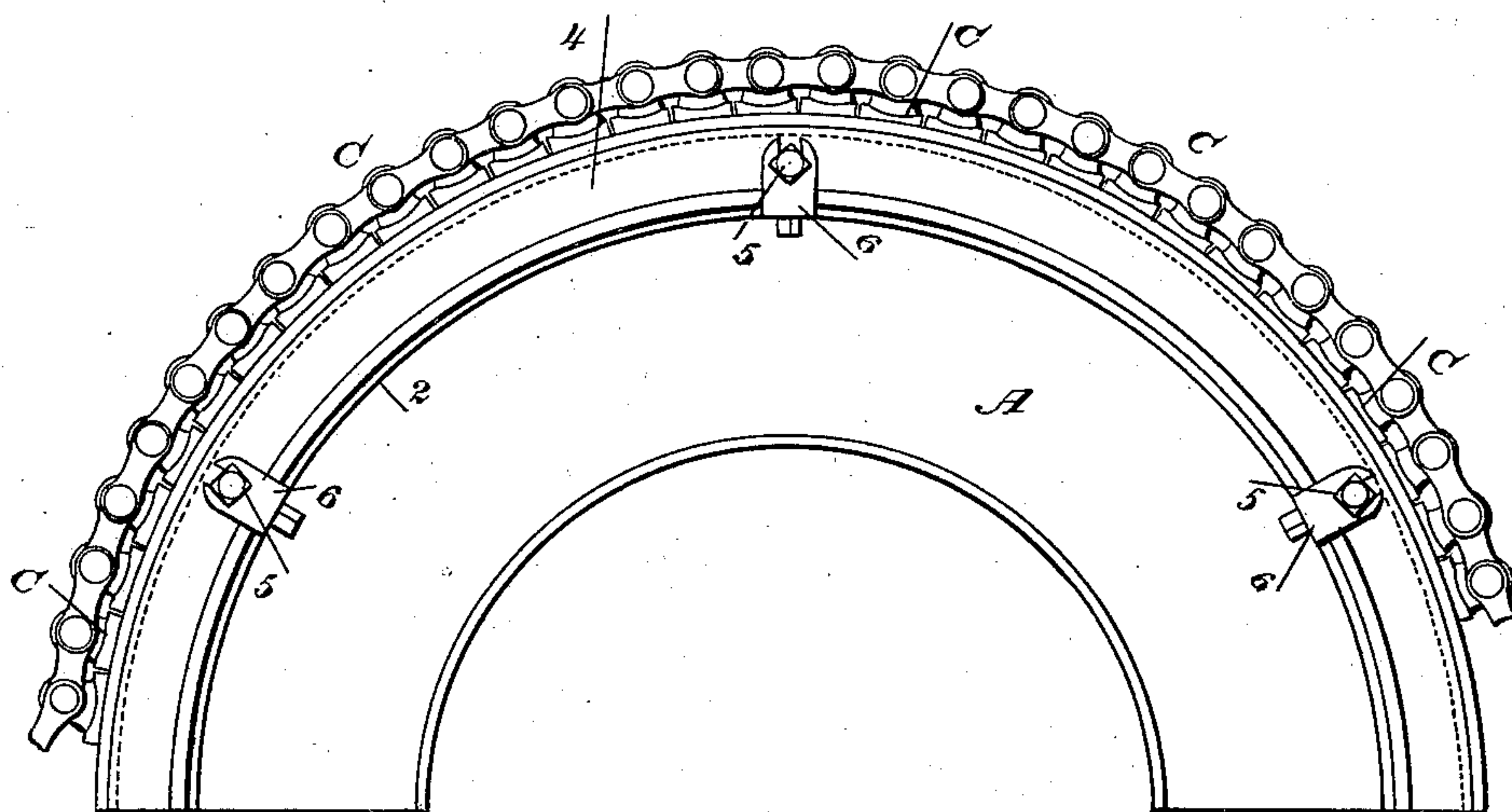
F. MILLS.

MACHINE FOR CARDING COTTON, &c.

No. 372,038.

Patented Oct. 25, 1887.

Fig. 1.



WITNESSES:

Arthur Hall

Spalley

INVENTOR:

Frederick Mills

(No Model.)

2 Sheets—Sheet 2.

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Fig. 3.

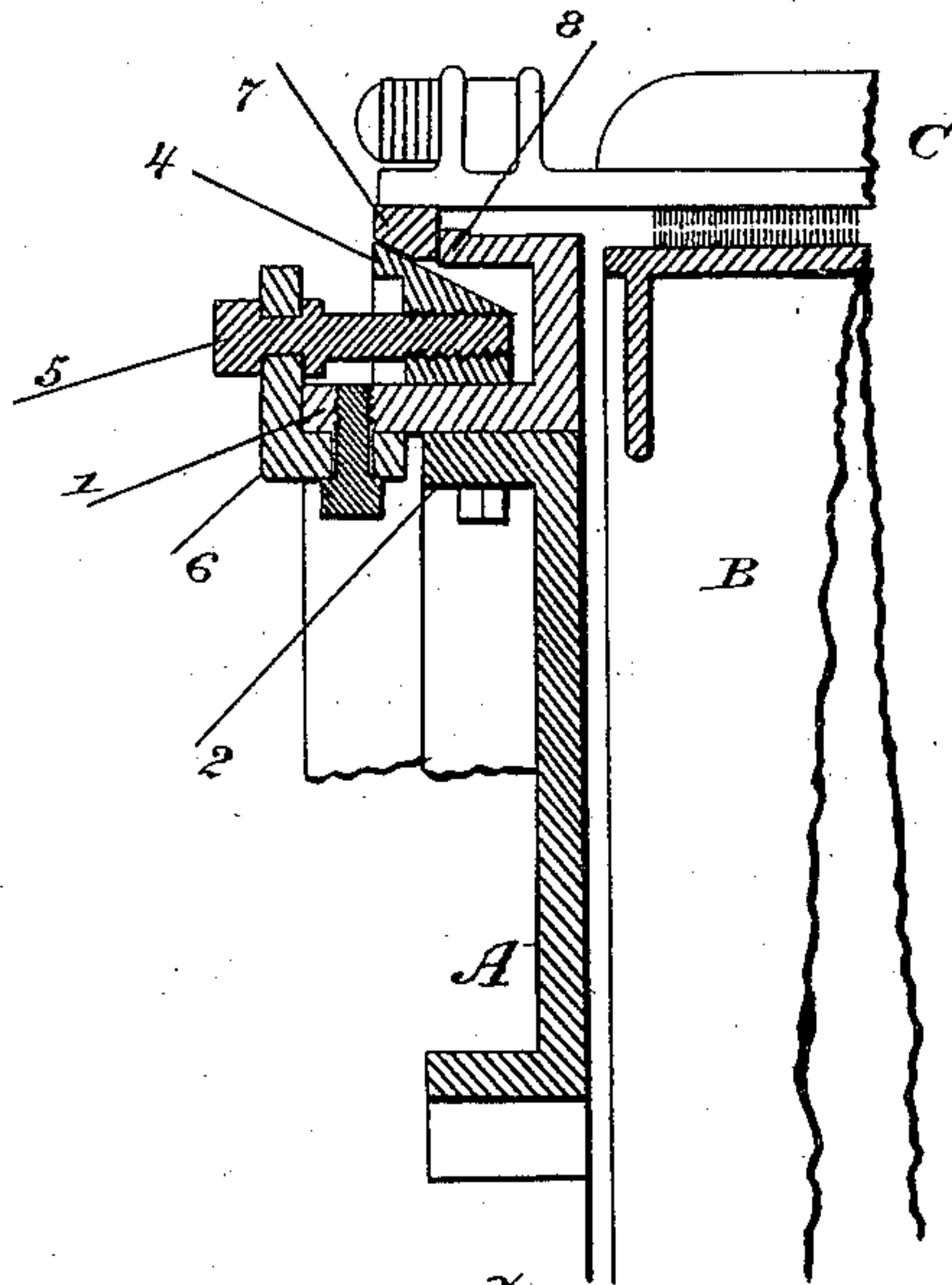
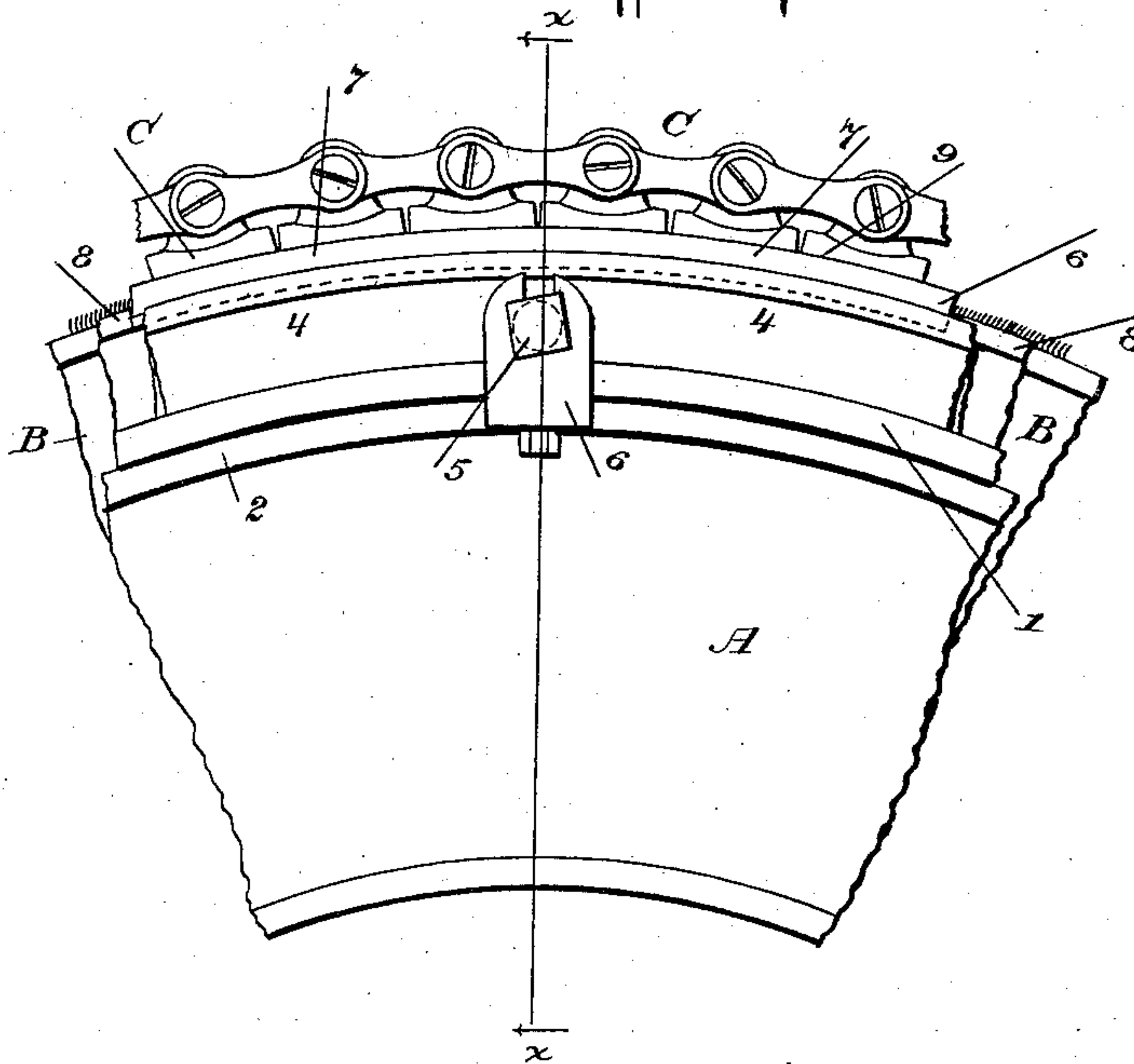


Fig. 2.



WITNESSES:

Arthur Hall

J. M. Alley

INVENTOR:

Frederick Mills

UNITED STATES PATENT OFFICE.

FREDERICK MILLS, OF HEYWOOD, COUNTY OF LANCASTER, ASSIGNOR TO
JOHN BULLOUGH, OF ACCRINGTON, ENGLAND.

MACHINE FOR CARDING COTTON, &c.

SPECIFICATION forming part of Letters Patent No. 372,038, dated October 25, 1887.

Application filed September 1, 1886. Serial No. 212,358. (No model.) Patented in England March 10, 1881, No. 1,029.

To all whom it may concern:

Be it known that I, FREDERICK MILLS, a subject of the Queen of Great Britain, residing in Heywood, in the county of Lancaster, England, have invented certain new and useful Improvements in Machines for Carding Cotton and other Fibrous Materials, (for which I have obtained a patent in Great Britain, dated March 10, 1881, No. 1,029) of which the following is a specification.

My invention relates to means for adjusting the top cards or card-flats of carding-engines.

Heretofore the card-flats of carding-engines have been adjusted by means of a screw-operated frustum of a cone mounted on a flange of the main bend of the machine, and acting to project or retract radial slides, which have enlarged heads, over which the card-flats travel.

The aim of my invention is to simplify and cheapen the card-flat-adjusting mechanism of carding-engines, and at the same time give a more accurate and reliable adjustment.

According to my invention the card-flats are mounted upon flexible rings or guide-rails, over which they travel, and which are forced outward from the axis of the carding-cylinder by the movement of a segment of a frustum of a cone, on which they are directly mounted, and which is supported by the main bend of the carding-engine.

In the accompanying drawings, Figure 1 is a side elevation of part of a carding-engine provided with my improvements. Fig. 2 is a fragmentary view similar to Fig. 1, but drawn to an enlarged scale; and Fig. 3 is a cross-section cut on line *xx* in Fig. 2.

Referring to these figures, A designates one of the side frames of the machine, the portion shown being that technically known as the "bend." B designates the carding-cylinder, and C C the top-flats.

1 represents an annular flange attached to the flange 2 of the bend A. This flange 1 is turned on its upper surface, and is set in position concentric with the axis of the cylinder, with its upper surface parallel therewith. Upon this flange rests an adjusting-ring, 4, (hereinafter called the "cone,") the upper side of which is beveled conically, the ring being, in fact, the segment of a frustum of a cone.

This cone is turned on its upper and under surfaces, and is adjustable to different positions on the flange 1 by means of a series of screws, 5, which are tapped into the cone 4 at intervals, and which work in retaining-brackets, 6, bolted to the under side of the annular flange 1, as best seen in Figs. 2 and 3. The brackets 6 are notched to receive the necks of the screws 5 and prevent their longitudinal movement. Mounted directly over the cone 4 is a flexible ring or guide rail, 7, the under side of which is beveled, and rests in contact with the beveled upper surface of the cone 4, while its inner side rests against a flange, 8, which is mounted on the bend of the machine. Thus the ring is guided laterally, being prevented from moving inwardly by the flange 8, and from moving outwardly by the beveled face of the cone 4. The outer surface of this ring 7, over which the card-flats travel, is dressed smooth and must be concentric with the axis of the carding-cylinder.

The setting or adjusting of the card-flats is accomplished by moving the cone 4 outwardly or inwardly by means of the screws 5. Thus the flexible ring 7 is contracted or expanded, moving toward or from the axial center, and consequently causing the top-flats to approach or recede from the cards on the cylinder. As the card-teeth are ground away in use, and it becomes necessary to adjust the card-flats nearer to the cylinder, the cone 4 is gradually adjusted outwardly.

The ring 7 is made thin, so that it will readily adapt itself to the varying radius of the cone 4 as the latter is moved in or out. The flange 8 may be cast in one piece with the flange 1, or may be separate therefrom, if preferred.

The length of the arc, both in the "ring" and the cone, should exceed that of the chain of flats simultaneously at work with the cylinder, so as to extend beyond the same at both ends and provide them with a safe and sufficient support.

By my invention the mechanism for adjusting the card-flats is greatly cheapened and simplified, since the one flexible ring 7 takes the place of the numerous radial sliding bars in the previous cone adjustments.

I am aware that such a flexible ring or guide

rail for the top-flats to travel on is not in itself new; but, so far as I am aware, it has heretofore been used only when mounted on the ends of a series of radial pillars, which are moved
5 by adjusting mechanism engaging their inner ends.

I claim as my invention—

1. The combination, with the side frame or bend, the carding-cylinder, and the top-flats
10 of a carding-engine, of a beveled adjusting ring or cone mounted on the bend and adjustable laterally thereon, means for adjusting said cone, the flexible ring over which the card-flats travel, mounted directly on and in con-
15 tact with the beveled surface of said cone, and adapted to be displaced radially by the lateral adjustment thereof, and means for preventing the lateral displacement of said ring, substan-
tially as set forth.

20 2. The side frame or bend, carding-cylinder, and top-flats of a carding engine, in combination with a beveled adjusting ring or cone mounted on the bend and adjustable laterally

thereon, adjusting-screws for adjusting said cone, a fixed flange mounted on said bend, and
25 the flexible ring against which the top-flats travel, said ring being mounted directly on and in contact with the beveled surface of said cone, whereby it is adapted to be displaced radially by the lateral adjustment of the cone,
30 and being held between the beveled surface of said cone and said fixed flange, whereby it is retained from lateral displacement, substantially as set forth.

3. The combination, with the bend A, cyl-
35 inder B, and top-flats C, of the flanges 1 and 8, the ring 7, the cone 4, and means for adjusting said cone, substantially as specified.

In witness whereof I have hereunto signed
my name in the presence of two subscribing
40 witnesses.

FREDERICK MILLS.

Witnesses:

ARTHUR C. HALL,
I. SMALLEY.