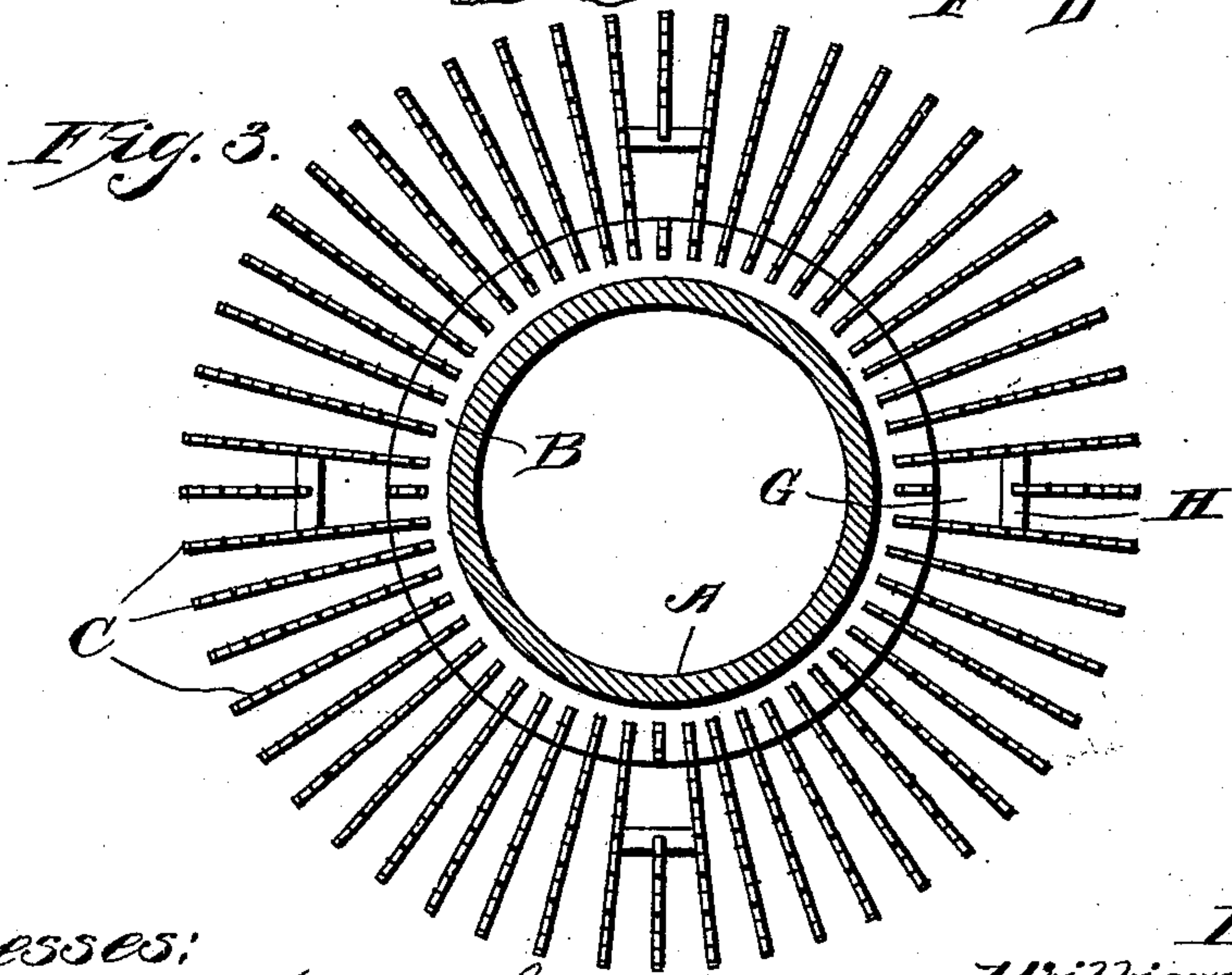
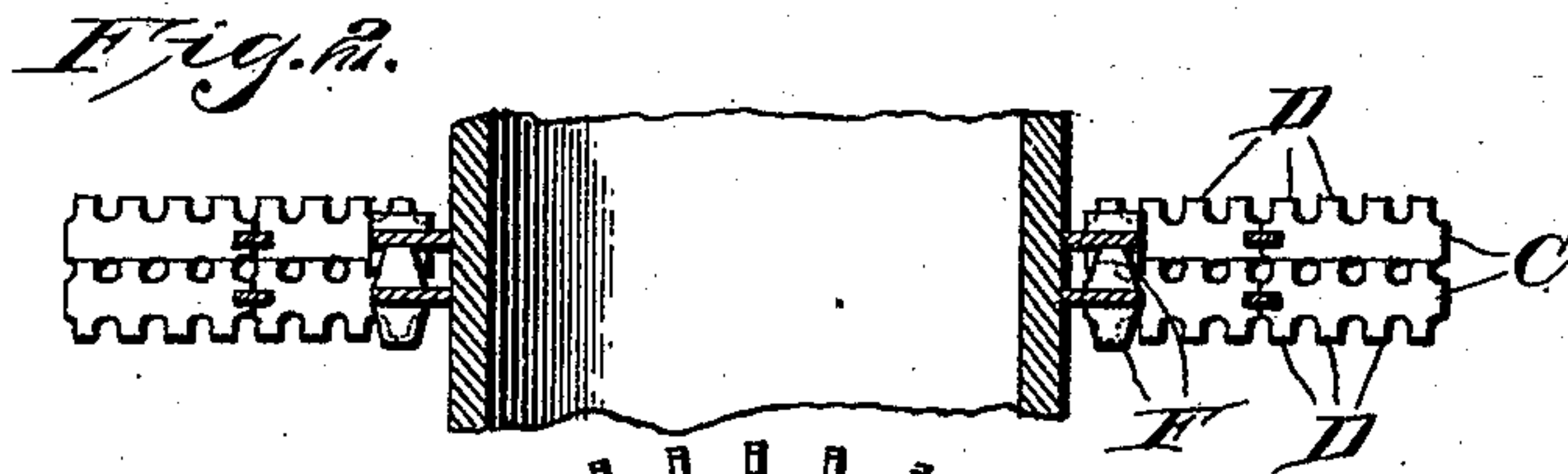
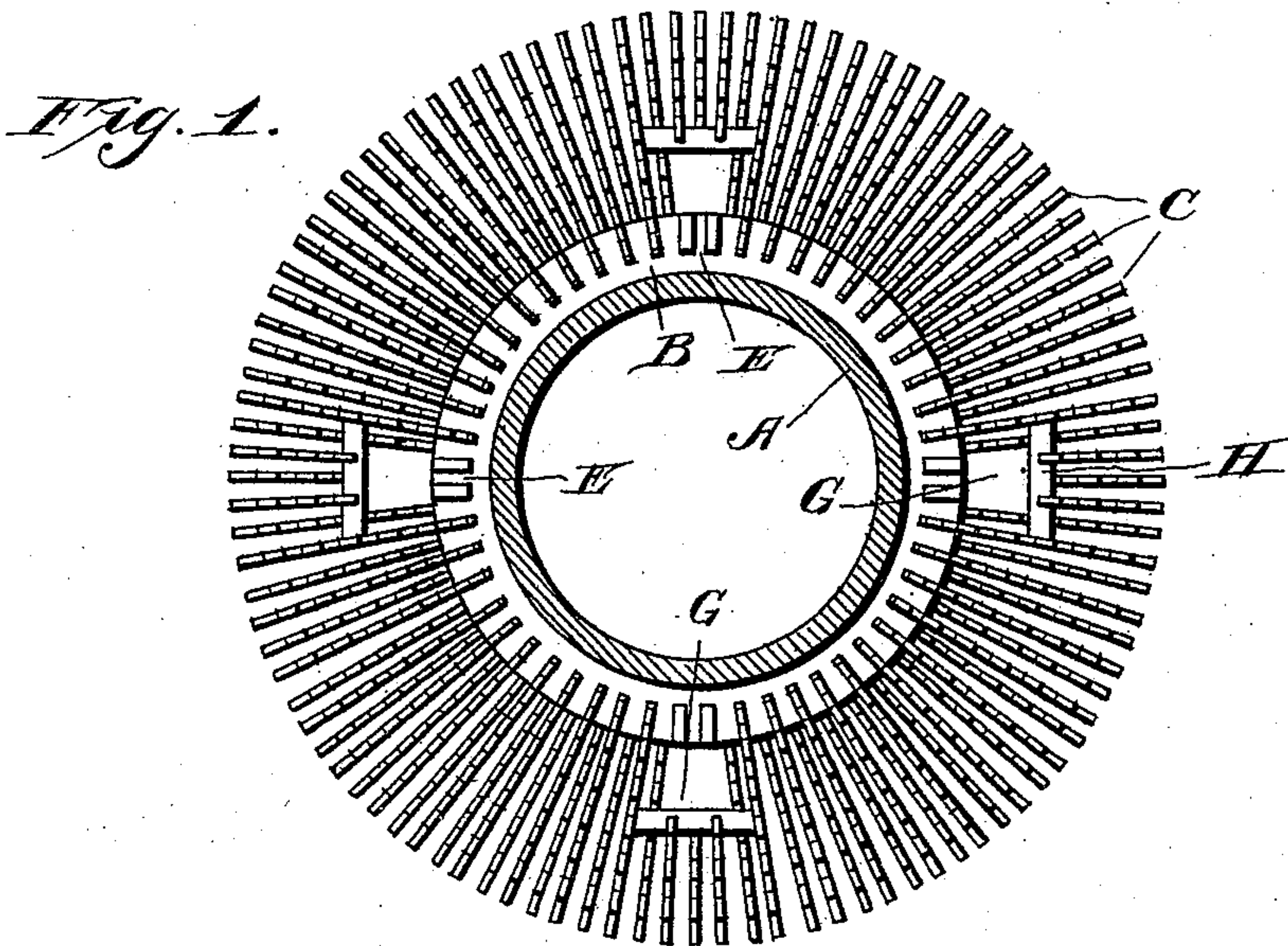


W. DIEBEL.
HEAT RADIATING DEVICE.

(Application filed June 11, 1901.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses:

Louis D. Heinrichs
L. H. Morrison

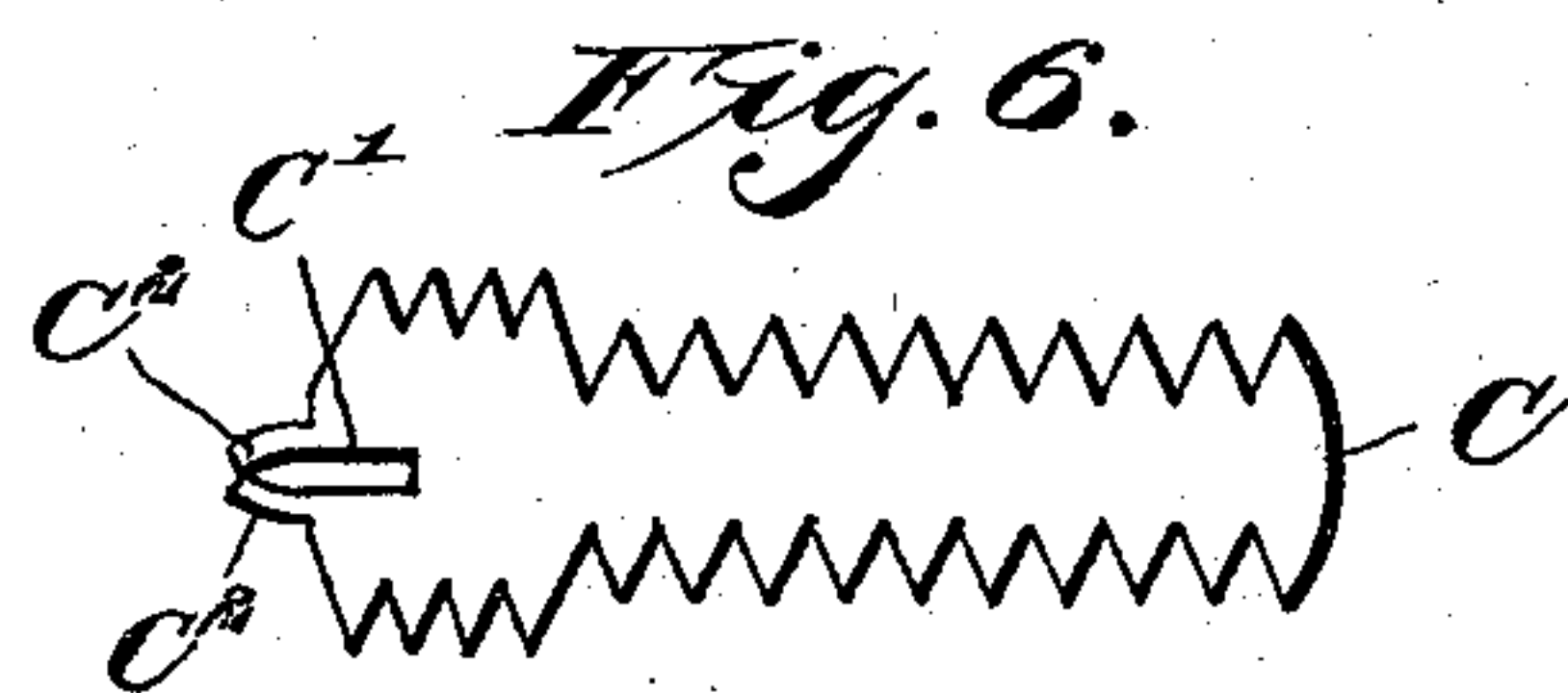
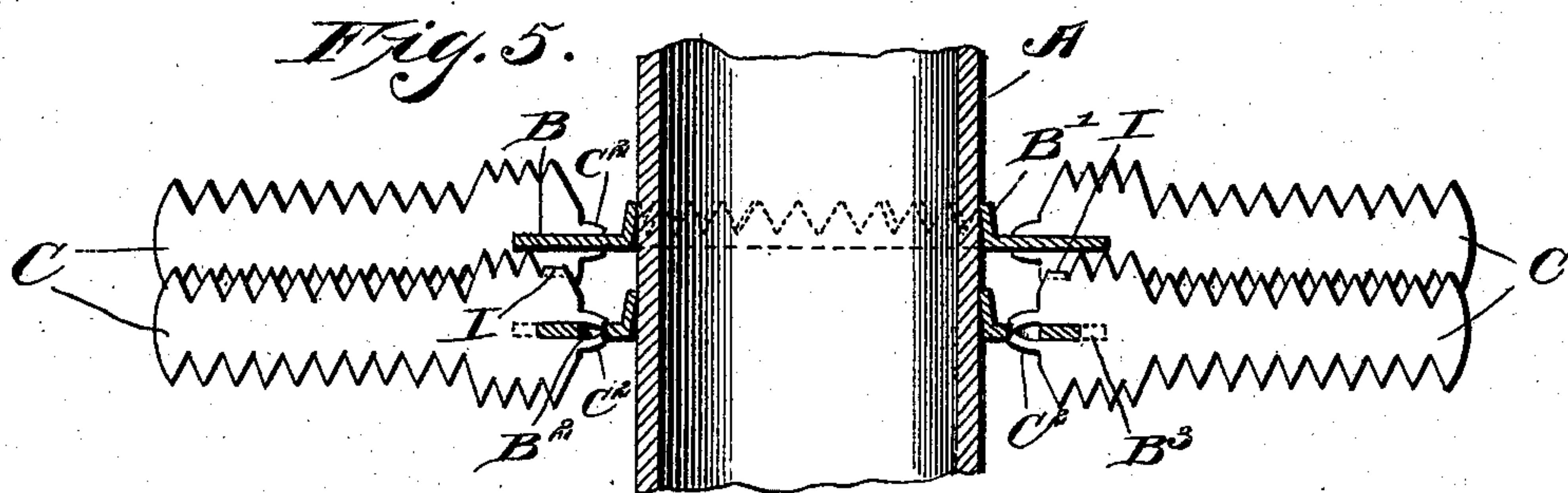
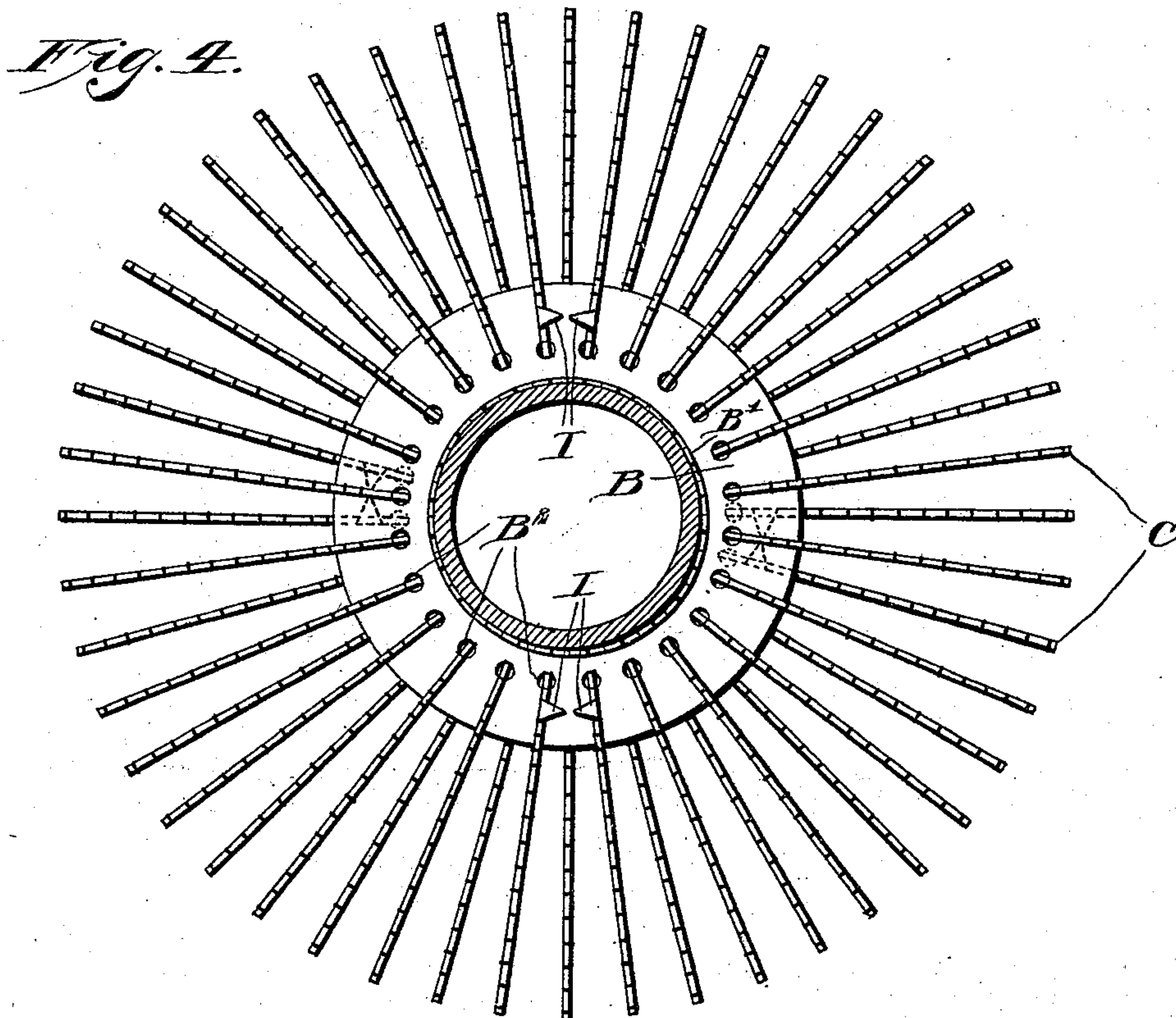
Inventor
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UNITED STATES PATENT OFFICE.

WILLIAM DIEBEL, OF PHILADELPHIA, PENNSYLVANIA.

HEAT-RADIATING DEVICE.

SPECIFICATION forming part of Letters Patent No. 695,674, dated March 18, 1902.

Application filed June 11, 1901. Serial No. 64,080. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM DIEBEL, a citizen of the United States, residing at Philadelphia, county of Philadelphia, and State of Pennsylvania, have invented a certain new and useful Improvement in Heat-Radiating Devices, of which the following is a specification.

My invention relates to a new and useful improvement in heat-radiating devices for cylinders, and has for its object to provide a device of this description in which a plurality of arms will extend outward from a ring, and each of these arms have a number of points upon each edge, and a number of these rings carrying the arms will be slipped upon the cylinder, and thus furnish a great number of points of radiation, which will quickly dispose of the heat generated within the cylinder.

With these ends in view this invention consists in the details of construction and combination of elements hereinafter set forth and then specifically designated by the claims.

In order that those skilled in the art to which this invention appertains may understand how to make and use the same, the construction and operation will now be described in detail, referring to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a plan view of my device, showing the same applied to a cylinder and showing that form of a device in which the arms, fingers, and ring are cast in one piece; Fig. 2, a longitudinal section through a cylinder, showing two of the rings and fingers in position; Fig. 3, a plan view of one of the radiating-rings encircling a pipe or cylinder; Fig. 4, a plan view of a modification of my device in which the ring and fingers are formed separately; Fig. 5, a longitudinal section of the cylinder, showing two of the rings and their fingers applied thereto; and Fig. 6, a side elevation of one of the fingers.

Referring to Figs. 1, 2, and 3 of the drawings, A represents the cylinder or pipe from which it is desired to radiate the heat. B represents rings, which rings are adapted to be slipped over the cylinder and are secured to the same by being heated before being

passed over the cylinder and allowed to contract upon the same. C represents fingers which are cast or formed with the ring B and extend out radially from the same. The upper and lower edge of each of the fingers C have points D formed thereon. These points are for the purpose of better facilitating the radiation of the heat, as it is a well-known fact that the more points used in heat-radiating devices the more thorough is the radiation of the heat. A number of the rings B, with their fingers C, are placed upon the cylinder or pipe, one above the other, and of course it would be necessary that the fingers upon one ring should lie between the fingers upon the ring directly below it, so that all the points D upon said fingers shall be free from contact with any other object. To guarantee that the fingers will lie between the fingers of the ring directly below and above it, I provide every other ring with the channels E upon each side thereof, and the other rings are provided upon each side with the lugs F. The fingers C are arranged at equal distances apart, and the lugs F and channels E are so arranged that when the lugs F enter the channels E it will bring the fingers carried by the rings with which the lugs F are secured between the fingers of the rings having the channel E. Thus the fingers of each ring will lie directly between the fingers of the ring above and below it.

When this heat-radiating device is used upon gas-engine cylinders, spaces have to be provided for the passage of the bolts which hold together the heads of the cylinder. For this purpose I provide the openings G, which are formed by joining two fingers together by means of a cross-bar H, and the intervening fingers between the two fingers just joined do not extend to the ring B, but are secured to or formed with a bar H, extending outward therefrom.

In Figs. 4, 5, and 6 I have illustrated how my device can be constructed in which the rings B and fingers C can be made separate. This will allow for both parts to be punched out of sheet metal, which is advantageous, in that it allows the parts to be made of thinner material. In this instance the ring B is formed with an upturned flange B', which is com-

posed of a number of points. All these points are bent slightly inward, so that when it is forced over a cylinder or pipe they will grip the same tightly. The fingers C are formed with a slot C', formed in their inner end, and upon the upper and lower side of the slot extensions C² are formed. Holes B² are formed through the rings B, corresponding to the number of fingers desired to be secured to the ring. Opposite each one of these holes B² notches B³ are formed in the edge of the ring. These notches extend inward to about one-half of the distance between the holes B² and the edge of the rings B and are of about the same thickness as the fingers C. A slot C' in the fingers is about the same thickness as the rings B. In securing the fingers C to the rings B the edges of the rings are passed into the slots C' of the fingers, and the solid portion of the finger in front of the slots C' extends within the notch B³ in the ring, thus holding the fingers rigid in both directions. When in such a position, the extension C² of the fingers will lie directly above and below the holes B² in the ring. These extensions C² are then pressed together slightly within the holes B², which will prevent the fingers from being withdrawn from the ring. It is also desirable in this construction that the fingers of one ring should lie directly between the fingers of the ring immediately above and below the same, and for the purpose of placing and holding the rings in such a position I provide two of the fingers upon every alternate ring with bent-over points I upon the top and bottom of the finger. These points are formed upon fingers which lie next to one another, and the points are of such a length that when they are bent over there is just sufficient space between the points to allow for the finger to be inserted between the same. Thus when the ring is placed upon the top of one of the rings in which the fingers have the bent-over points I two of the fingers will have to pass between the two sets of bent-over points I, and as all the fingers are at equal distances from one another each finger of this ring will lie between the fingers of the ring directly below it.

The advantage of my invention is that by means of an exceedingly cheap and simple device I provide the greatest possible number of points of radiation for the heat, and in that construction shown in Figs. 1, 2, and 3 if one or more of the rings should become damaged they can be easily replaced with new ones, and in that construction shown in Figs. 4, 5, and 6 either the entire ring and fingers can be replaced or any one of the fingers or any particular ring can be removed and a new finger substituted.

Of course I do not wish to be limited to the exact construction here shown, as slight modi-

fications could be made without departing from the spirit of my invention.

Having thus fully described my invention, what I claim as new and useful is—

1. In a heat-radiating device for cylinders, a plurality of rings adapted to surround the cylinder, a plurality of thin flat fingers extending out radially from said rings, a plurality of points formed upon each edge of said thin flat fingers, substantially as and for the purpose specified.

2. In a heat-radiating device for cylinders, a plurality of rings secured to and surrounding said cylinder, a plurality of fingers extending out radially from said rings, a plurality of points formed in the upper and lower edges of said fingers, the structure of the parts being such that the fingers of each ring are held between the fingers of the rings immediately above and below the same, substantially as described and for the purpose set forth.

3. In a device of the character described, a plurality of rings surrounding the cylinder, means for securing said rings upon the cylinder, a plurality of flat fingers extending out radially from said rings, means for securing said fingers to the ring, a plurality of points formed upon the upper and lower edges of each of the fingers, points bent over upon certain fingers for the purpose of causing the fingers of one ring to be held between the fingers of the rings immediately above and below the same, substantially as and for the purpose specified.

4. In a heat-radiating device for cylinders, a plurality of rings adapted to surround the cylinder, upturned annular flanges formed with the ring, points formed in said flanges, said flanges adapted to grip the cylinder and hold the ring in position, a series of fingers extending out radially from the rings, notches B³ formed in the edge of the ring in which the fingers are adapted to fit, slots C' formed in the inner ends of the fingers in which the ring is adapted to fit, holes formed through the ring, projections C² carried by the fingers adapted to be indented within the holes for the purpose of securing the fingers to the ring, a plurality of points formed in the upper and lower edges of the fingers, and means for centering the finger of each ring between the fingers of the ring above and below the same, substantially as described and for the purpose set forth.

In testimony whereof I have hereunto affixed my signature in the presence of two subscribing witnesses.

WILLIAM DIEBEL.

Witnesses:

H. B. HALLOCK,
L. W. MORRISON.