

(No Model.)

2 Sheets—Sheet 1.

A. R. FORDYCE.

ROLLER DIE FOR MAKING METALLIC LATHING.

No. 604,695.

Patented May 24, 1898.

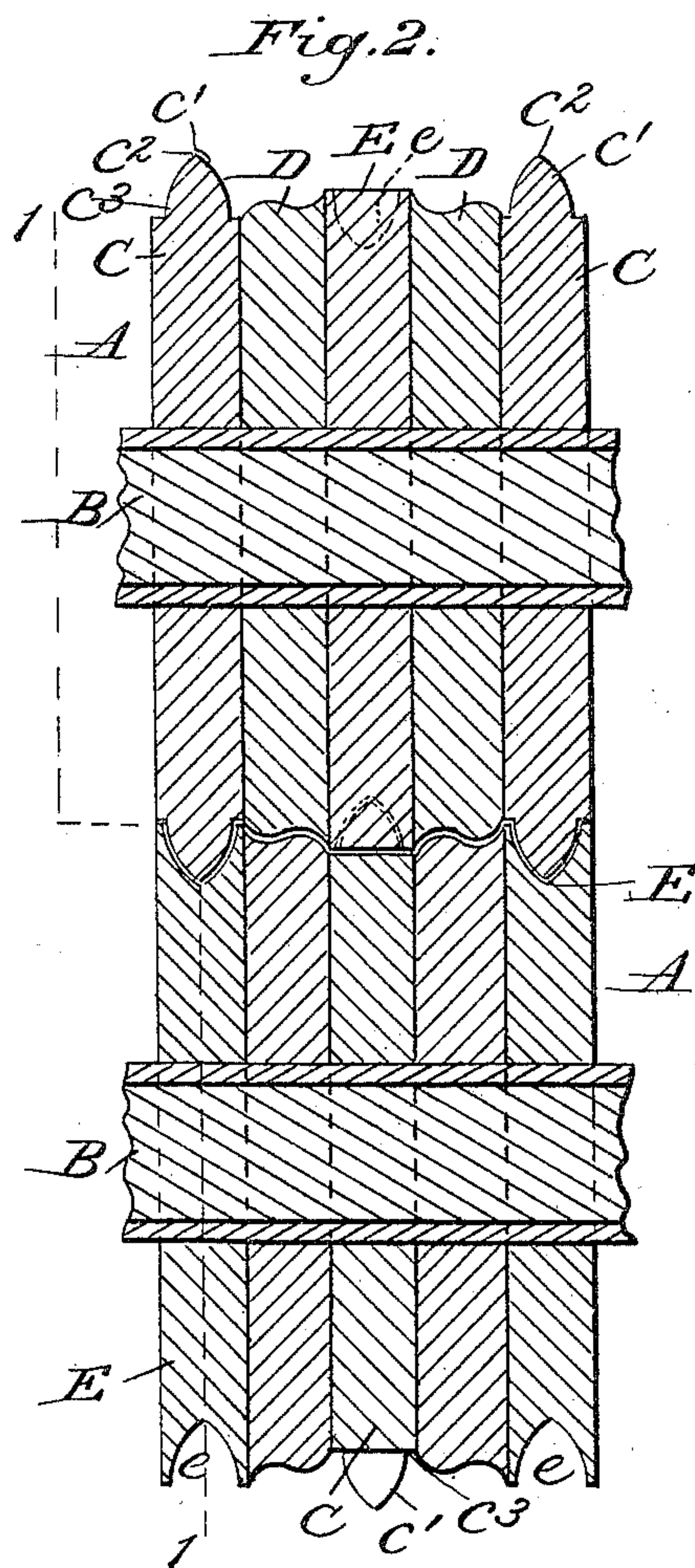
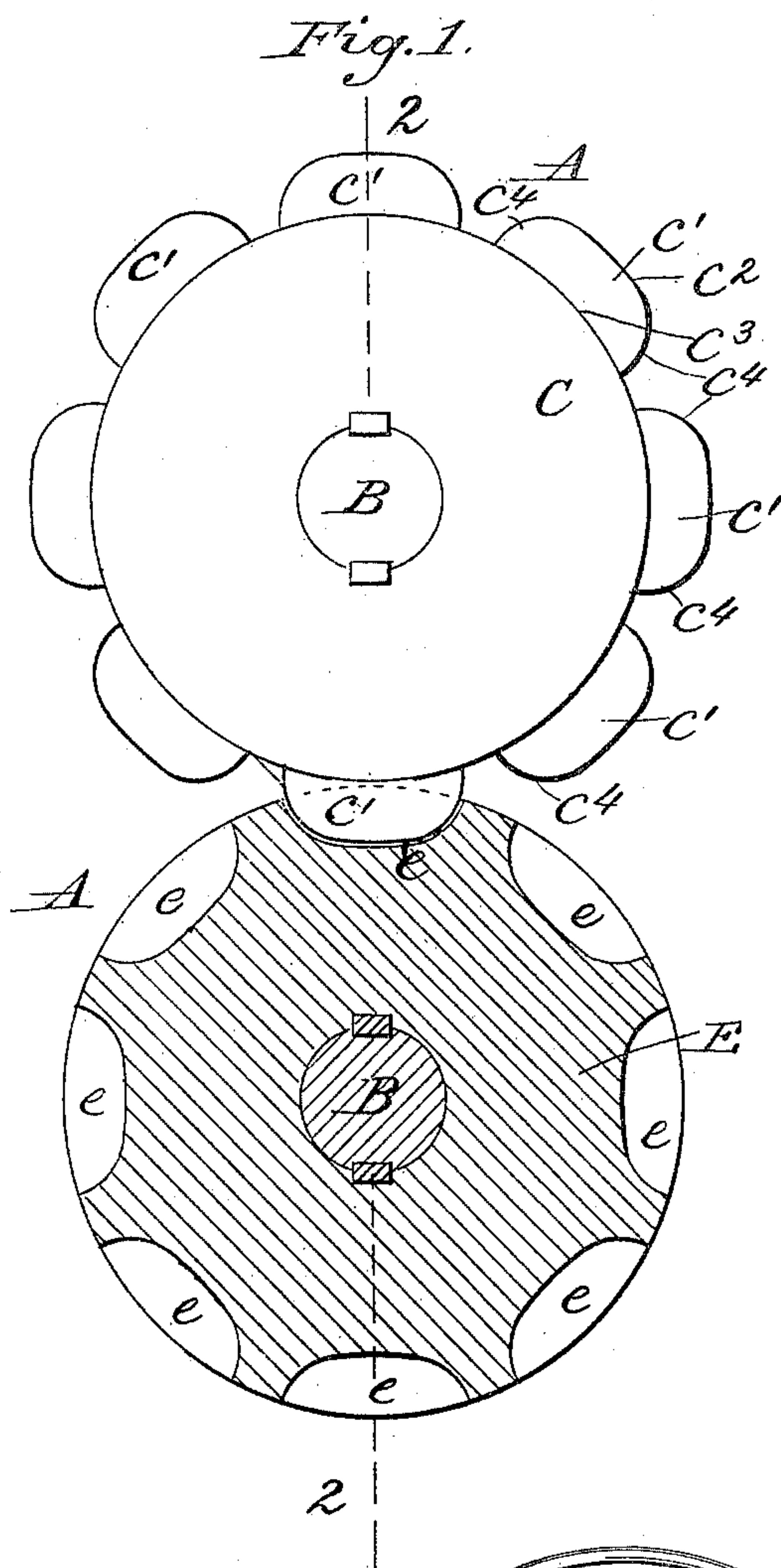


Fig. 3.

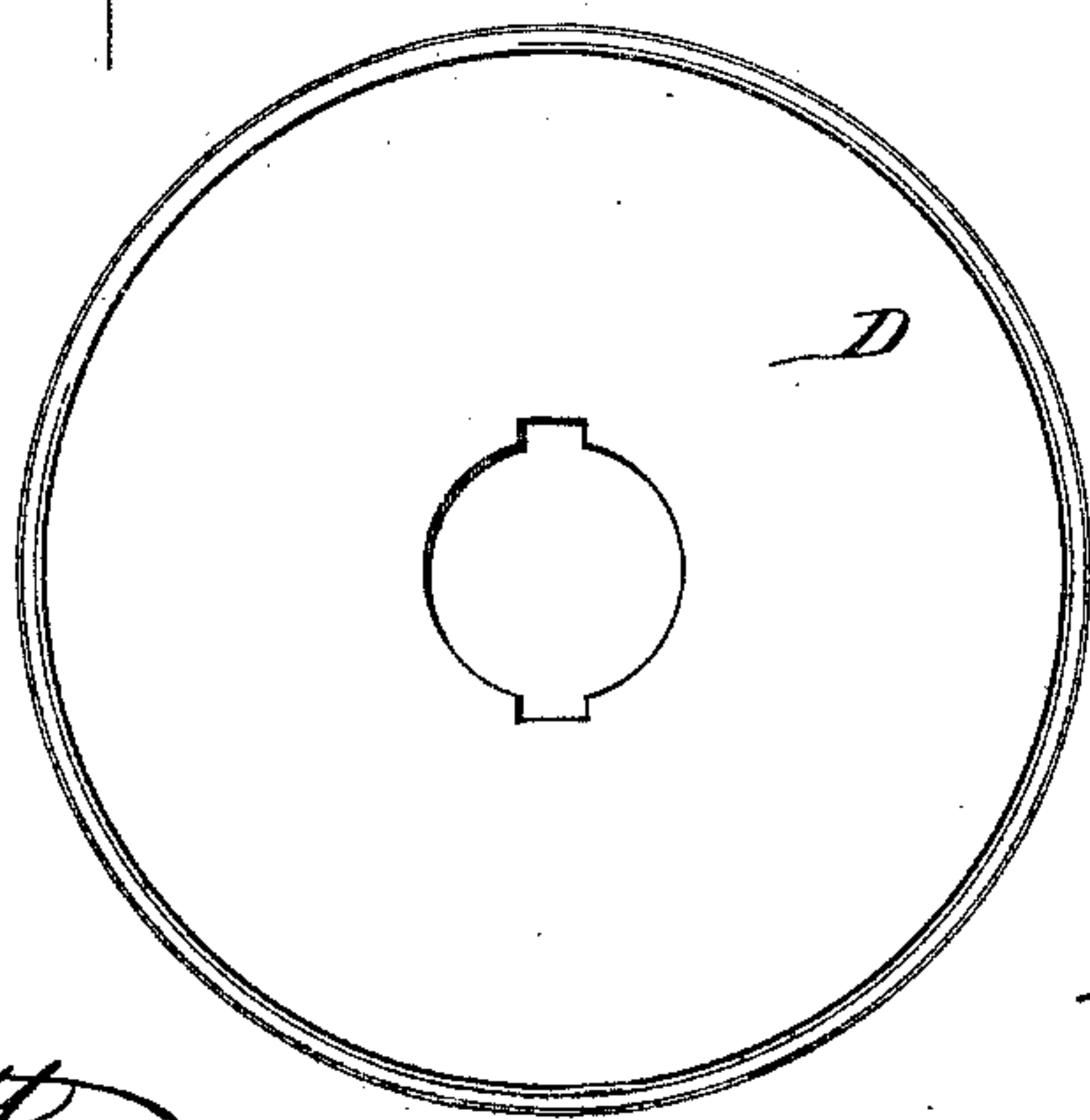
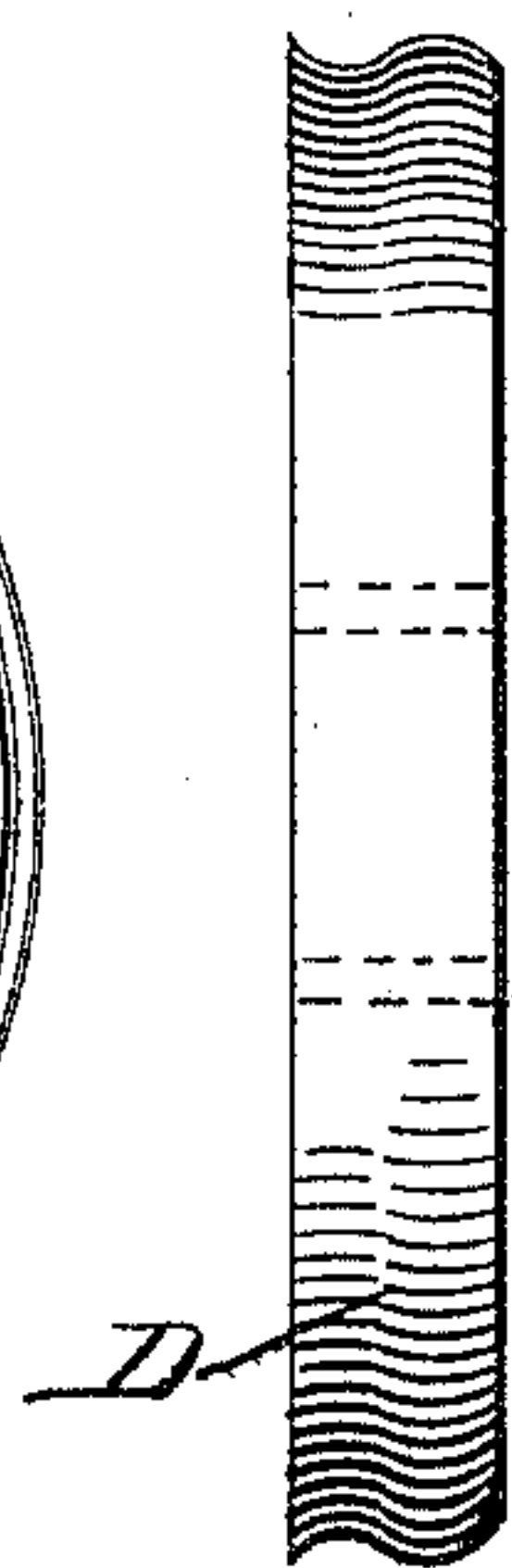


Fig. 4.



Witnesses

H. H. Schott
Henry L. Finckel

Inventor

Alexander R. Fordyce
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Attorney

(No Model.)

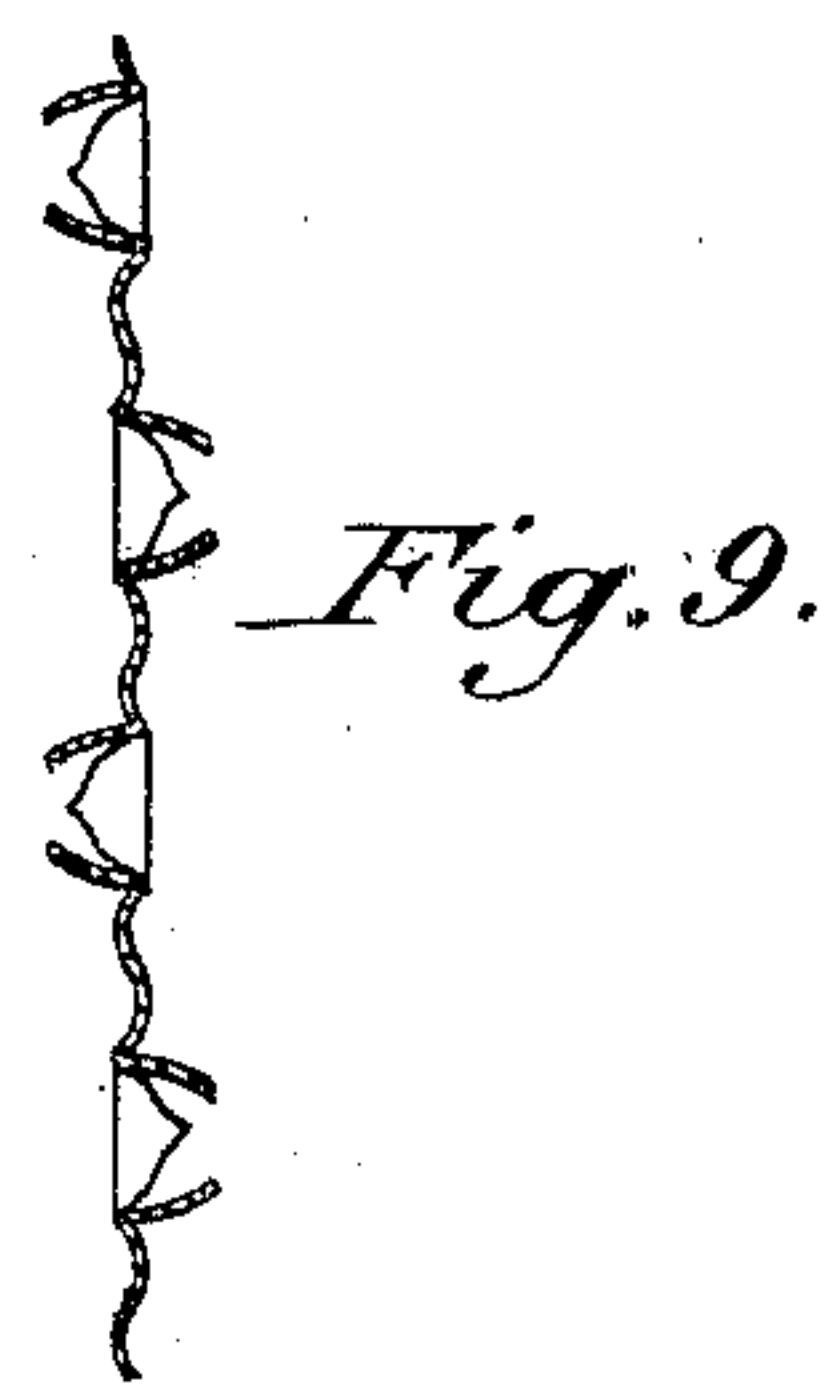
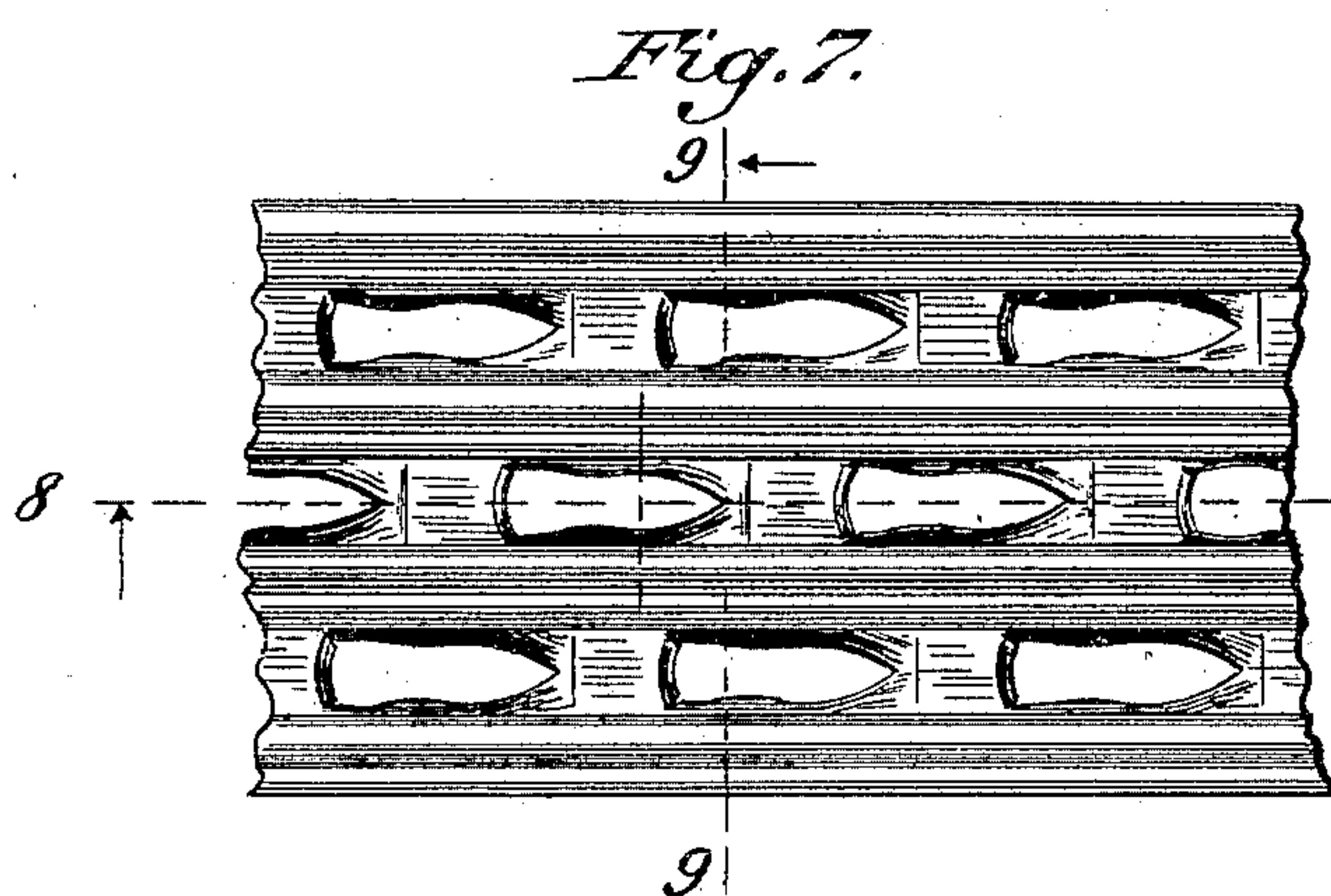
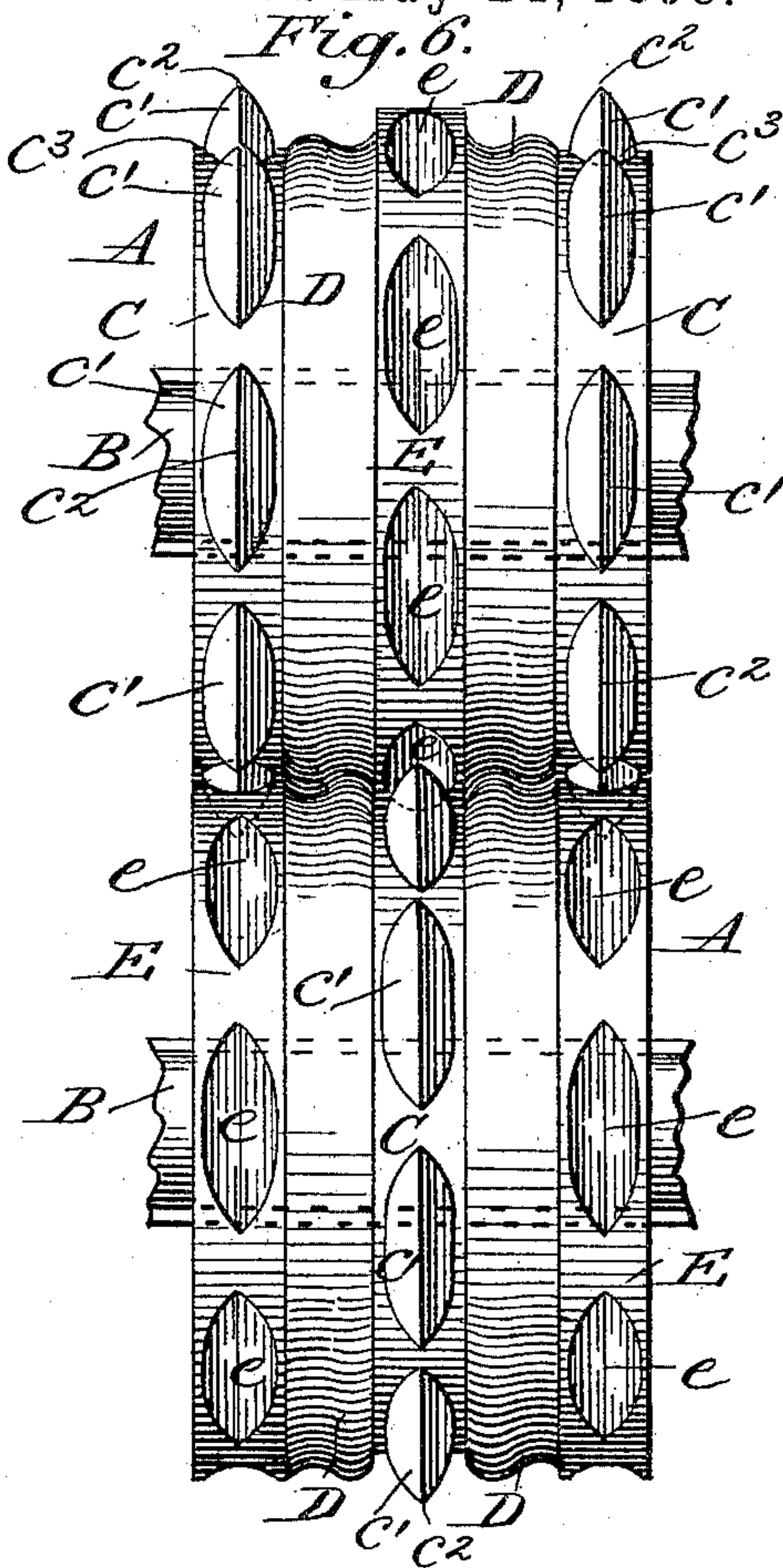
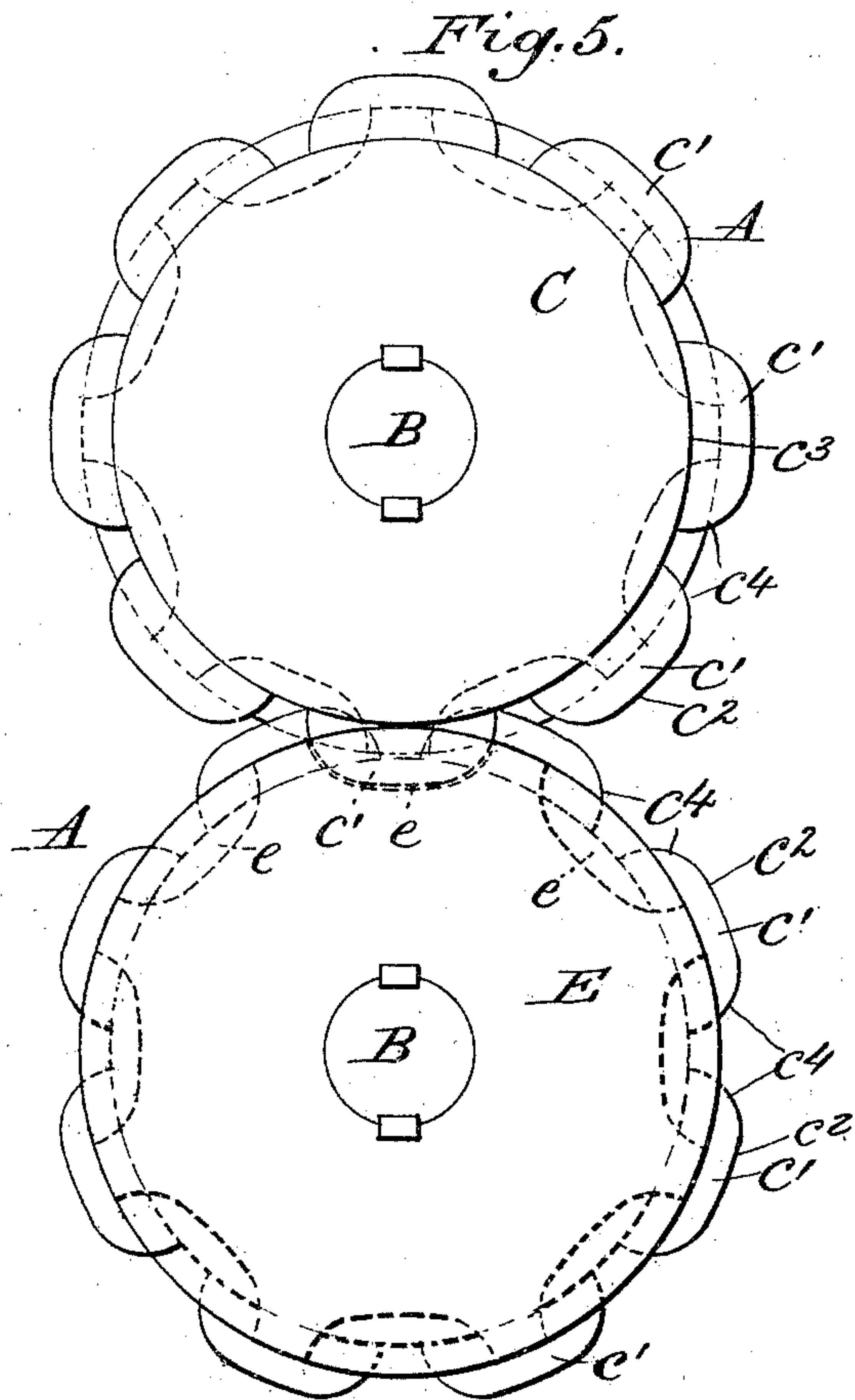
2 Sheets—Sheet 2.

A. R. FORDYCE.

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No. 604,695.

Patented May 24, 1898.



Witnesses

H. H. Schott
Henry D. Linck.

Fig. 8.



Inventor

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UNITED STATES PATENT OFFICE.

ALEXANDER R. FORDYCE, OF NEWARK, NEW JERSEY, ASSIGNOR TO THE AMERICAN METAL LATH, FIRE PROOF, CONSTRUCTION AND MANUFACTURING COMPANY, OF SAME PLACE.

ROLLER-DIE FOR MAKING METALLIC LATHING.

SPECIFICATION forming part of Letters Patent No. 604,695, dated May 24, 1898.

Application filed June 29, 1897. Serial No. 642,804. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER R. FORDYCE, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Roller-Dies for Making Metallic Lathing, of which the following is a full, clear, and exact description, such as will enable those skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

The invention relates to improvements in roller-dies for making metallic lathing, and more particularly to such devices for making the lathing disclosed in an application filed by me on the 5th day of April, 1897, and having Serial No. 630,680. The lathing disclosed in said application consists, primarily, of a metallic plate having apertures formed therein, the metal displaced by the formation of said apertures turned back to form flanges, the said flanges arranged in rows projecting alternately from opposite sides of the plate, and also arranged so that the flanges of one row break joint with the flanges of an adjacent row.

The invention in the present instance has for its object the construction of roller-dies adapted to transform a sheet of metal passed between the same into the lathing disclosed in said application.

The invention consists, primarily, of two rolls, each of which is provided with annular rows of male dies projecting from its periphery and annular rows of female dies extending into its periphery, the said rows of male and female dies being arranged to alternate with each other and so that the male dies of one row break joint with the female dies of an adjacent row, and the said rolls being so mounted that their relative positions will be such that the male dies of one roll will register with the female dies of the other roll.

The invention also consists in providing each of the rolls with annular ogee formations. The latter are so arranged that they alternate with the rows of male and female dies. By

means of these ogee formations the lathing may be corrugated or beaded between the keys, as shown in the said application.

The invention further consists in the novel construction, combination, and arrangement of parts, such as will be hereinafter fully described, pointed out in the appended claims, and illustrated in the accompanying drawings.

In the accompanying drawings, in which similar letters of reference designate corresponding parts, Figure 1 is a sectional view of the roller-dies embodying the invention on the line 1 1 of Fig. 2. Fig. 2 is a sectional view on the line 2 2 of Fig. 1. Fig. 3 is a side elevation of one of the corrugating-disks. Fig. 4 is an edge view of the same. Fig. 5 is an end elevation of the roller-dies. Fig. 6 is a front elevation of the same. Fig. 7 is a plan view of a section of lathing such as is made by the roller-dies. Fig. 8 is a sectional view on the line 8 8 of Fig. 7. Fig. 9 is a similar view on line 9 9 of Fig. 7.

Referring to the drawings by letter, A A designate the roller-dies. They may be mounted in a machine having any construction suitable in the premises provided with mechanism for driving the rolls at the same rate of speed. As both rolls are exactly alike, a description of one will suffice for both.

On the supporting-shaft B are mounted disks of three different formations. One set, formed of the disks C, carry the male dies, which serve to slit or cut the metal and to turn back the edges of said slits to form keys. Another set, formed of the disks D, serve to form corrugations or beads in the metal plate. These corrugations divide the plate into panels and also strengthen the said plate against certain strains. The set formed of the disks E carry the female dies, which cooperate with the male dies to form the flanges and keys.

As all the disks C are exactly alike, a description of one will be sufficient for the rest of the set. The disk C has projecting from its periphery at regular intervals the male dies c' . Each of the latter has an elongated cutting edge c^2 , toward which the sides of the

die slope from the comparatively broad base c^3 . The cutting edges c^2 c^2 are substantially concentric with the disk. The corners of each, as at c^4 , are cut away to insure a gradual and easy entrance and exit of the die into and from the metal. If these corners should not be cut away and the die have an abrupt entrance and exit, the metal would be torn and distorted.

As all of the corrugating or beading disks are exactly alike, only one need be described. The periphery of the disk D has an ogee formation extending around the same, which, with another disk having a similar formation on its periphery, corrugates or beads the plate. The disks also serve to guide the plate as it passes between the rolls and tend to prevent a movement of the same to the side. The disks E E are also alike. In the periphery of the disk E the female dies e e are formed. The latter are substantially of the same shape as the male dies of the disk C and arranged at like intervals. The male die c is of such dimensions as to register with the male die c' , and preferably it is made larger, so that considerable space will intervene between the walls of the same and the male die when the two are in mesh. This intervening space allows sheets of metal of different thicknesses to be operated upon and also allows the flanges to assume the irregular form, as shown in the before-mentioned application. The shape of the male and female dies is such that the flanges formed by them will be inclined toward each other to form a key.

The disks are splined on the shaft B, so as to be immovable relative thereto. To insure their solidity, they may be secured one to another in any suitable manner. Clamping-plates may also be placed on the shaft outside of the disks to force the latter together.

The relative arrangement of the disks C and E is such that the male dies of the former break joint with the female dies of the latter. Between the two the corrugating or beading disk D is mounted. In some instances, however, it may be desired to make a lathing without the corrugations or beads. This can be done by leaving out the corrugating or beading disk.

The relative arrangement of the rolls is such that when placed in an operative position the male dies of one roll register with the female dies of the other roll and the corrugating-disks of both rolls register.

While the hereinbefore-described embodiment of the invention is the preferred one, yet it can be departed from to a considerable extent without departing from the spirit of the invention. For instance, each roll may be made of a solid cylindrical piece of metal, with the several forming devices cast or cut in the periphery of the same. Then again, it can be formed of a hollow cylinder; also, the male dies may be made separate and

mounted on the cylinder in any suitable manner. Other changes are also obvious.

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

1. In a roller-die for making metallic lathing, a roll having an annular row of female dies extending into its periphery, and an annular row of male dies projecting from the periphery of said roll, the said male and female dies being separated from each other and their relative arrangement being such that those forming the row of male dies break joint with those forming the row of female dies.

2. In a roller-die for making metallic lathing, a roll having an annular row of female dies extending into its periphery, an annular row of male dies projecting from the periphery of said roll, the said male and female dies being separated from each other and their relative arrangement such that those forming the row of male dies break joint with those forming the row of female dies, and the said roll having an annular ogee formation interposed between the row of male dies and the row of female dies.

3. In a roller-die for making metallic lathing, the combination of a disk having an annular row of male dies projecting from its periphery, a disk having an annular row of female dies extending into its periphery, the said disks being arranged so that the male dies are separate from and break joint with the female dies, and means for securing the said disks in their proper relative positions.

4. In a roller-die for making metallic lathing, the combination of a disk having an annular row of male dies projecting from its periphery, a disk having an annular row of female dies extending into its periphery, a disk having an annular ogee formation extending around its periphery, the said disks being arranged so that the male dies are separate from and break joint with the female dies and so that the disk having the ogee formation is interposed between the disk having the male dies and the disk having the female dies, and means for securing said disks in their proper relative positions.

5. In a roller-die for making metallic lathing, a roll having an annular row of female dies consisting of apertures extending into the periphery of said roll, and the said roll having an annular row of male dies projecting from its periphery, each of said male dies having a cutting edge substantially concentric with the axis of the roll and with the corners of said edge cut away to permit a gradual entrance and exit of the die into and from the metal on which it operates, the said dies being arranged so that the male dies of one row are separate from and break joint with the female dies of an adjacent row.

6. In a roller-die for making metallic lathing, a roll having an annular row of female

dies consisting of apertures extending into the periphery of said roll, each of said female dies having its interior walls inclined to approach each other as they extend inwardly, 5 and the said roll having an annular row of male dies projecting from its periphery, each of said male dies having a cutting edge substantially concentric with the axis of the roll and with the corners of said edge cut away 10 to permit a gradual entrance and exit of the die into and from the metal on which it operates, the said dies being so arranged that the male dies of one row are separate from and break joint with the female dies of an adjacent row, and the relative dimensions of a 15 male and a female die being such that the male die is smaller than the female die so that when the male die of one roll registers with the female die of another roll considerable 20 space between the same will exist to permit

the metal upset between them to assume the form of an irregular collar to constitute a key.

7. In a machine for making metallic lathing, the combination with a roll having a series of disks provided one with a series of cutters, another with a series of depressions, and an intermediate disk; of a cooperating roll also having a series of disks provided one with a series of cutters, another with a series of 25 depressions, and an intermediate disk, the depressions in each roll being directly opposite the cutters in the other roll. 30

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

ALEXANDER R. FORDYCE.

Witnesses:

WM. H. WALLACE,
CHAS. A. DICKSON.