

(No Model.)

2 Sheets—Sheet 1.

W. J. TURPIN.

ROLLS FOR CORRUGATING AND BENDING METAL.

No. 464,403.

Patented Dec. 1, 1891.

Fig. 1.

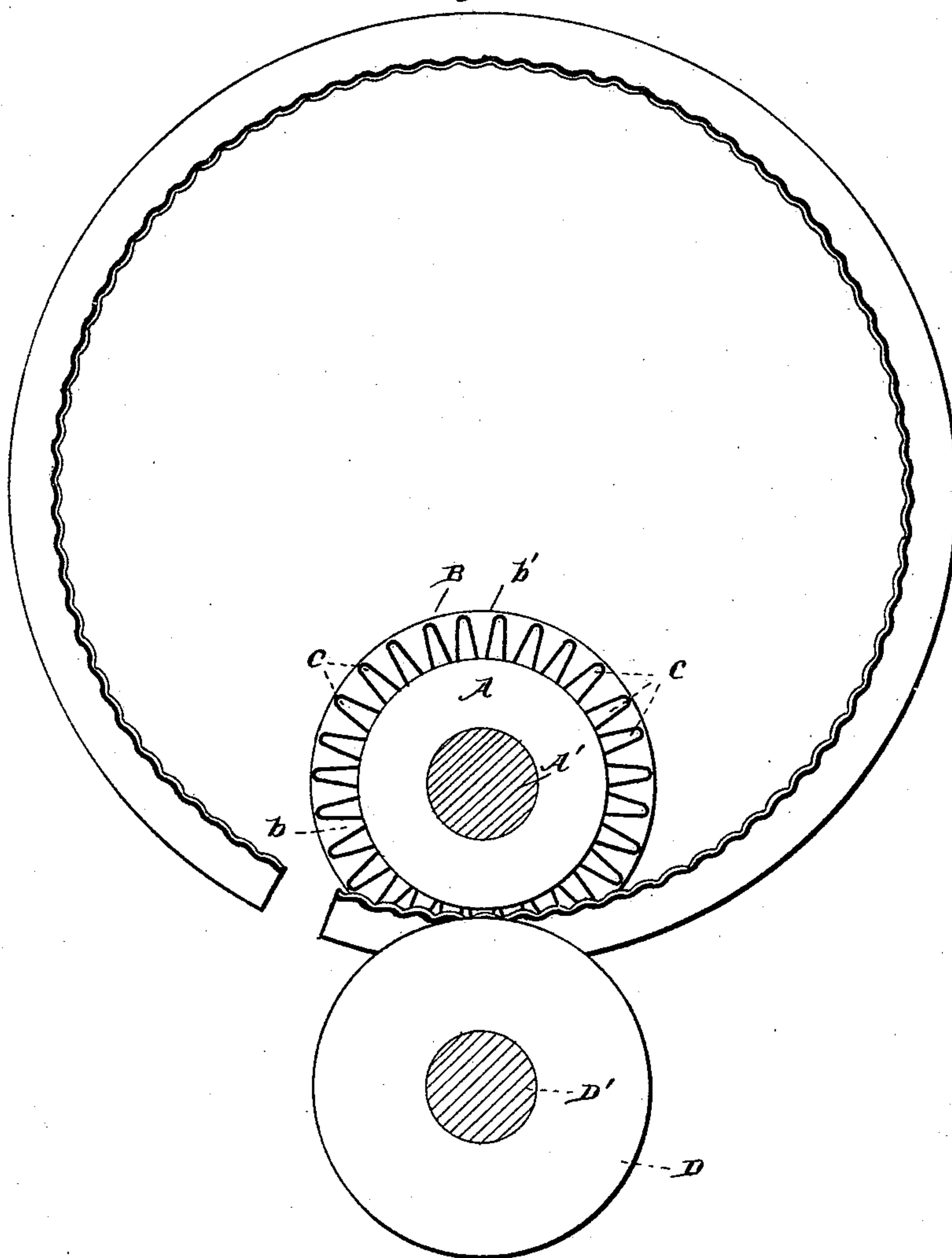
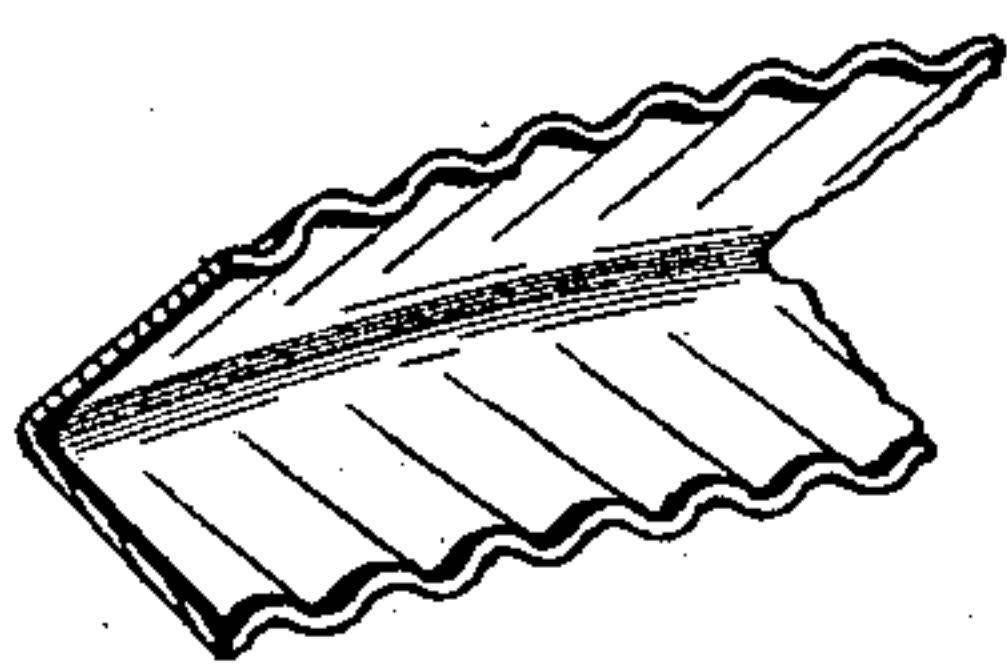


Fig. 6.



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(No Model.)

2 Sheets—Sheet 2.

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Fig. 2

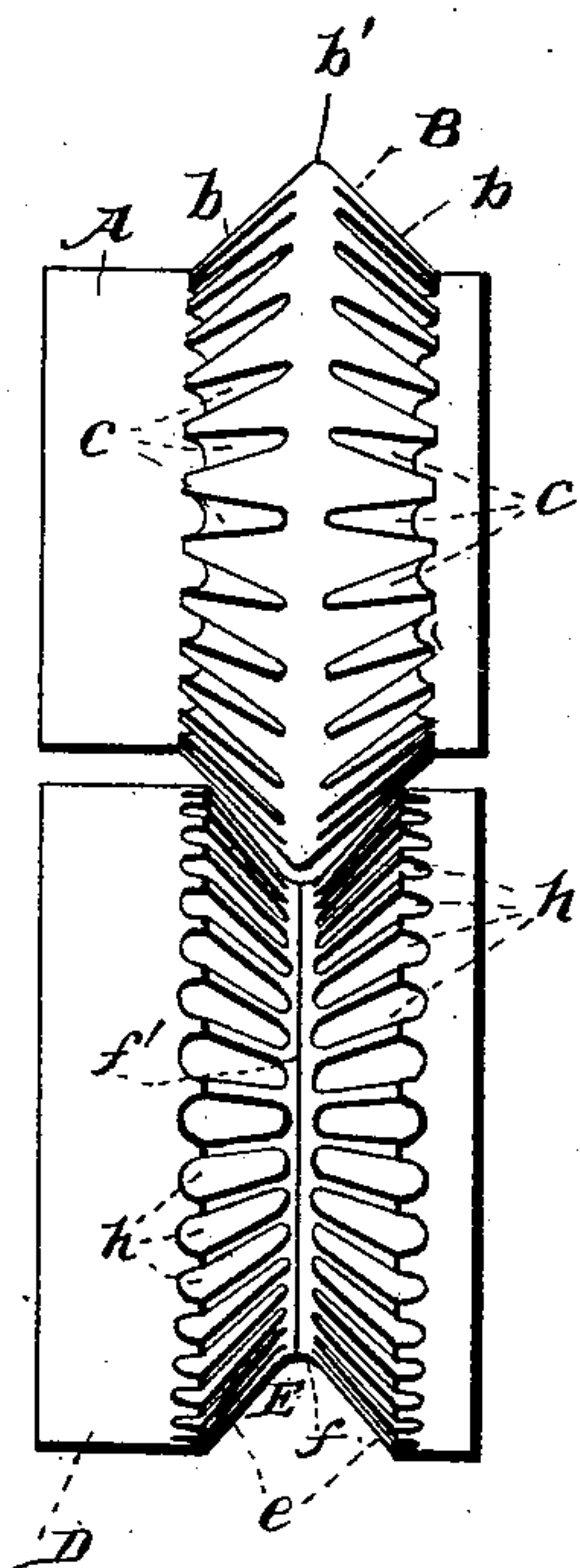


Fig. 3.

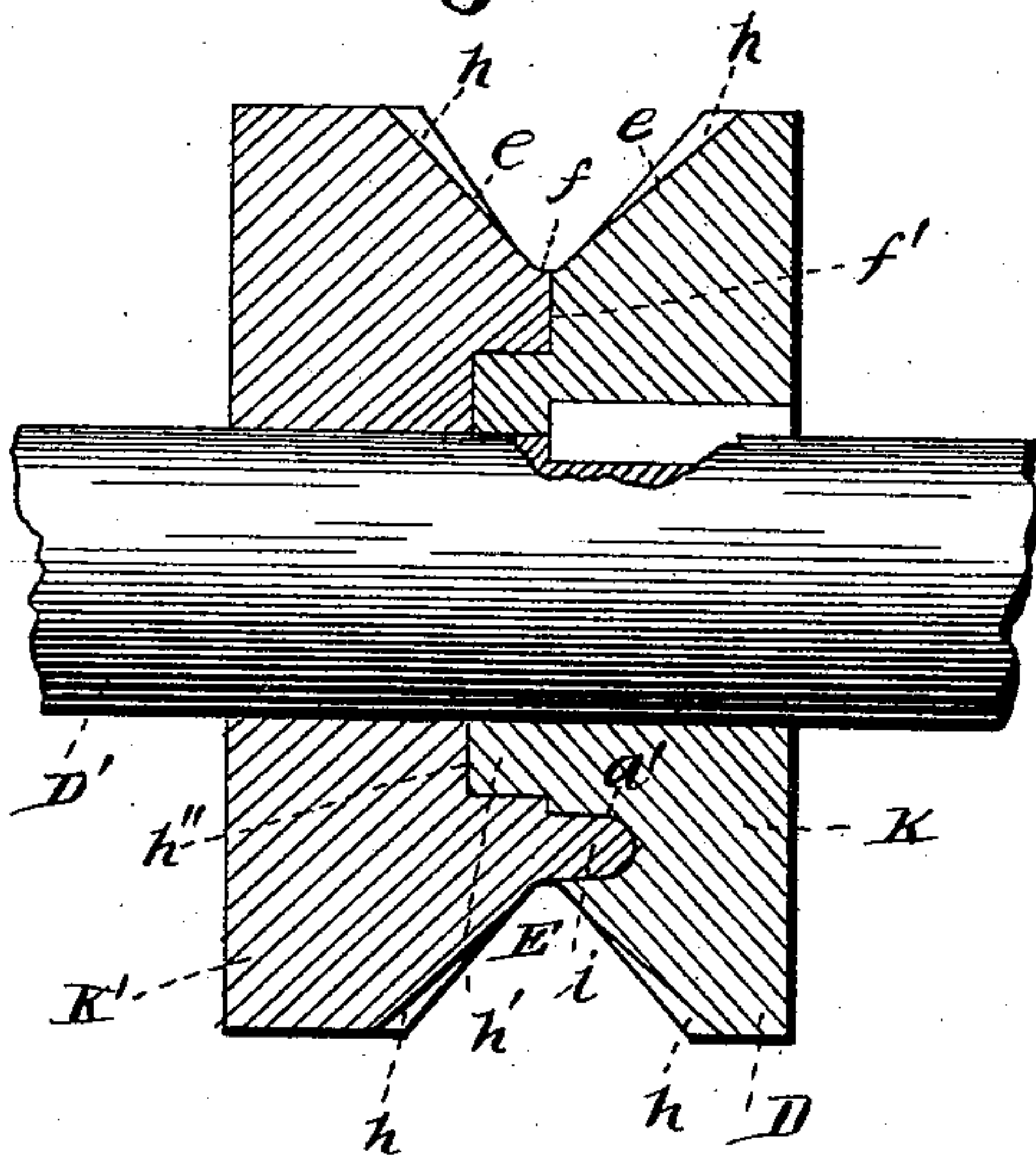


Fig. 4.

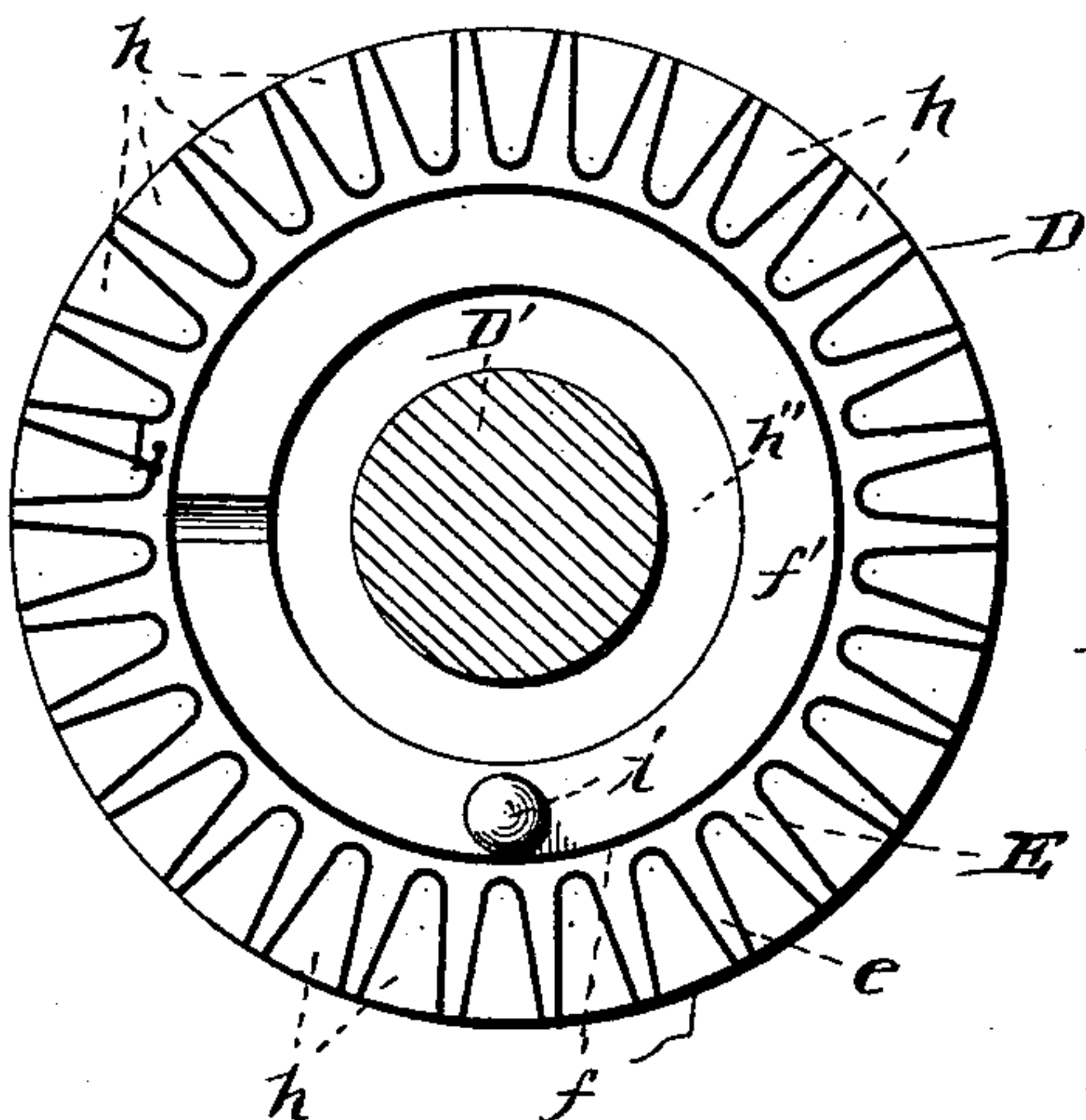
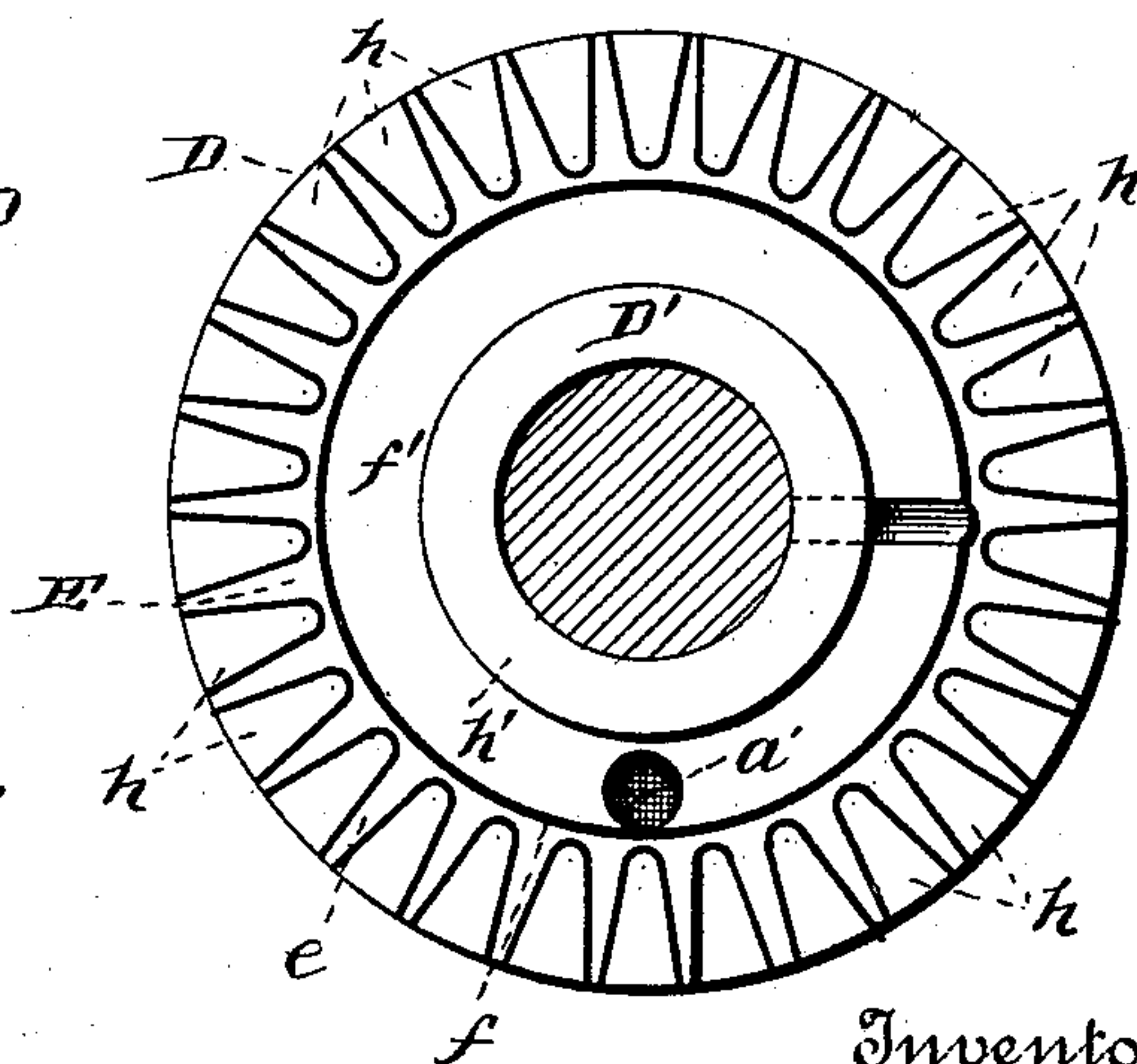


Fig. 5.



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UNITED STATES PATENT OFFICE.

WILLIAM J. TURPIN, OF OAKDALE STATION, PENNSYLVANIA.

ROLLS FOR CORRUGATING AND BENDING METAL.

SPECIFICATION forming part of Letters Patent No. 464,403, dated December 1, 1891.

Application filed July 2, 1891. Serial No. 398,272. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. TURPIN, a citizen of the United States, and a resident of Oakdale Station, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Rolls for Corrugating and Bending Metal; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a face view of the rolls with corrugated metal ring. Fig. 2 is an edge view of the rolls. Fig. 3 is a vertical longitudinal section of the female die. Figs. 4 and 5 are inner face views of the female die, and Fig. 6 is a section of metal completed.

This invention has relation to certain new and useful improvements in rolls or dies for corrugating and bending metal; and it consists in the novel construction and combination of parts, as hereinafter set forth.

The invention is especially designed for corrugating and forming into a ring of any given dimensions a strip of metal for the purpose of binding paper or other material.

In the accompanying drawings illustrating the invention, the letter A designates a roll keyed or secured rigidly to a shaft A' and carrying an annular male die B, which consists of the two raised inclined annular faces *b b*, meeting each other centrally at an acute angle, each said face having formed thereon a series of radial concaved corrugations *c*, running to within a short distance of the central ridge *b'*, formed by the united inclined faces.

D represents a second roll rigidly secured in a shaft D', hung or journaled with relation to the roll A, said roll having formed therein the annular female die E, the side walls *e e* of which are inclined downwardly toward each other and separated at their lower ends by the annular smooth portion *f*, corresponding to and acting with the central ridge *b'* of the male die. The bevel of the side walls of the female die corresponds to that of the inclined

faces *b b* of the male die, but in reverse direction, and are formed with similar corrugations *h*. This roll having the female die, in order to facilitate casting and the removal of the finished ring, may be formed in two sections K K', united at the point *f'* by any suitable connection, such as that shown in the drawings, wherein I have shown the section E as formed on its meeting face with a cylindrical central sleeve *h'*, which engages a corresponding socket *h''* on the adjoining face of the opposite section, a projection *i* also engaging an aperture *a'*.

A strip of metal run between these rolls will assume the form shown in Figs. 1 and 6, which shows an annular ring having a corrugated convex double-beveled outer surface and a corrugated concave double-beveled inner surface.

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

1. In a machine for corrugating and bending metal, a pair of rolls, one of said rolls having formed thereon a raised annular corrugated double-beveled male die, having a plain annular edge, and the other roll having formed thereon a female die having its side walls similarly corrugated and beveled reversely and separated at their lower portions by a narrow plain annular surface, substantially as specified.

2. In a machine for corrugating and bending metal, the combination, with the roll carrying the male die, of the roll having the female die, said female die comprising the beveled downwardly and together inclined and radially corrugated side walls separated at their lower portions by a narrow plain annular surface, said male die having a reverse or counterpart formation, substantially as specified.

3. In a machine for corrugating and bending metal, the combination, with the roll having the female die formed therein, said roll being formed in two sections, said die comprising the beveled downwardly and together inclined radially corrugated side walls separated at their lower portions by a narrow plain annular surface, of a counterpart male die having on its surface a formation reverse to that of the female die, substantially as specified.

4. In a machine for corrugating and bending
metal, the combination, with the roll A, hav-
ing formed therein a male die consisting of
two raised inclined annular faces *b b*, meeting
5 each other centrally at an acute angle and
each having a series of radial concaved cor-
rugations running to within a short distance
of the meeting point of said faces, of the roll
D, having formed therein an annular female
10 die comprising the beveled downwardly and
together inclined and radially corrugated
faces *e e*, separated from each other at their
lower portions by a plain annular surface,
substantially as specified.
15 5. The combination, with the male die, com-

prising a roll having thereon the two raised
inclined annular faces *b b*, meeting each other
centrally at an acute angle, each said face
having formed therein a series of radial con-
caved corrugations *c*, running to within a 20
short distance of where said faces meet, of a
female die having on its surface a formation
reverse to that of the male die, substantially
as specified.

In testimony whereof I affix my signature in 25
presence of two witnesses.

WILLIAM J. TURPIN.

Witnesses:

J. W. GUY,

H. H. WHITMORE.