

(No Model.)

2 Sheets—Sheet 1.

J. J. ANDERSON.
MACHINE FOR ROLLING CAR COUPLING PINS.

No. 350,857.

Patented Oct. 12, 1886.

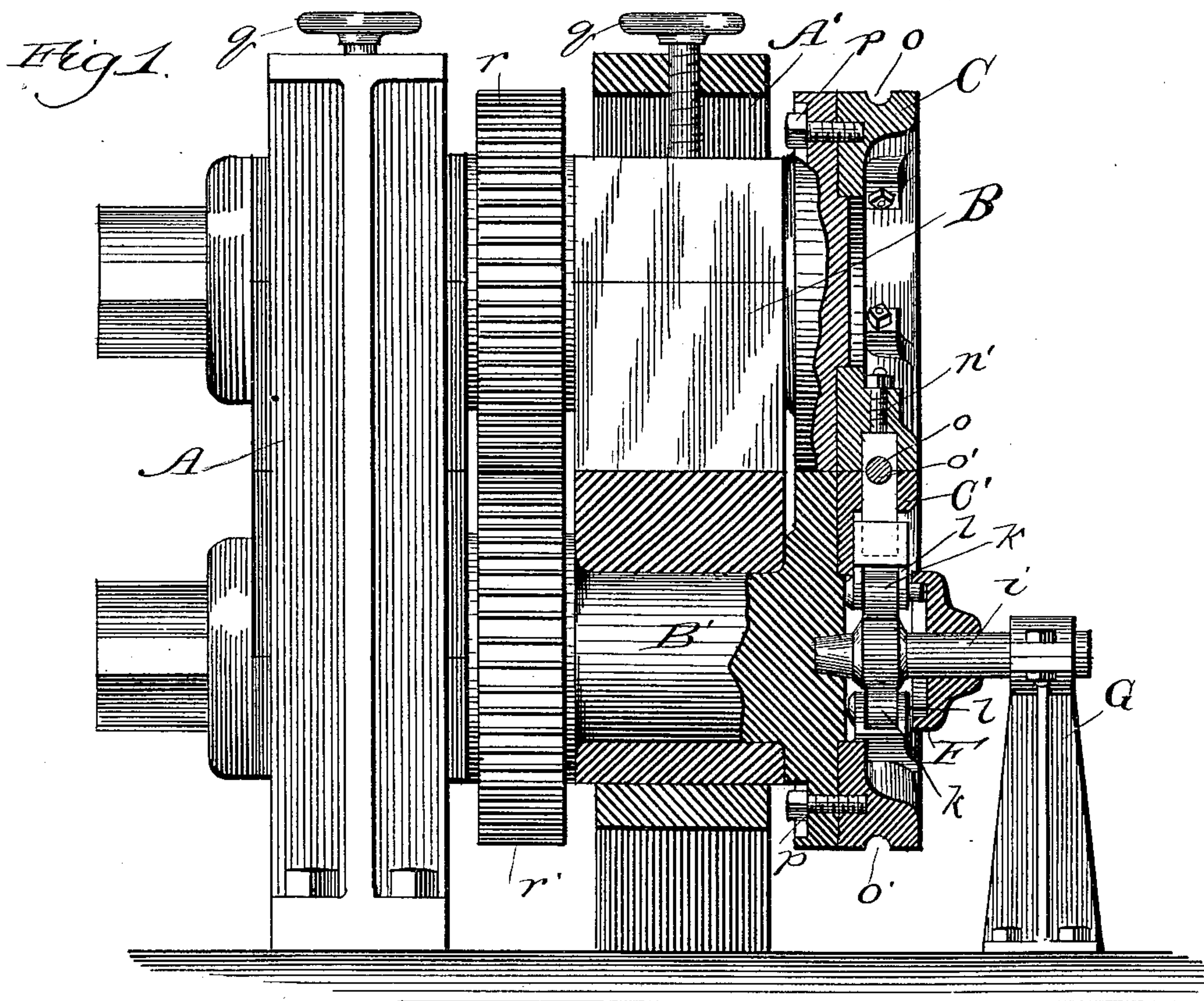


Fig. 3.

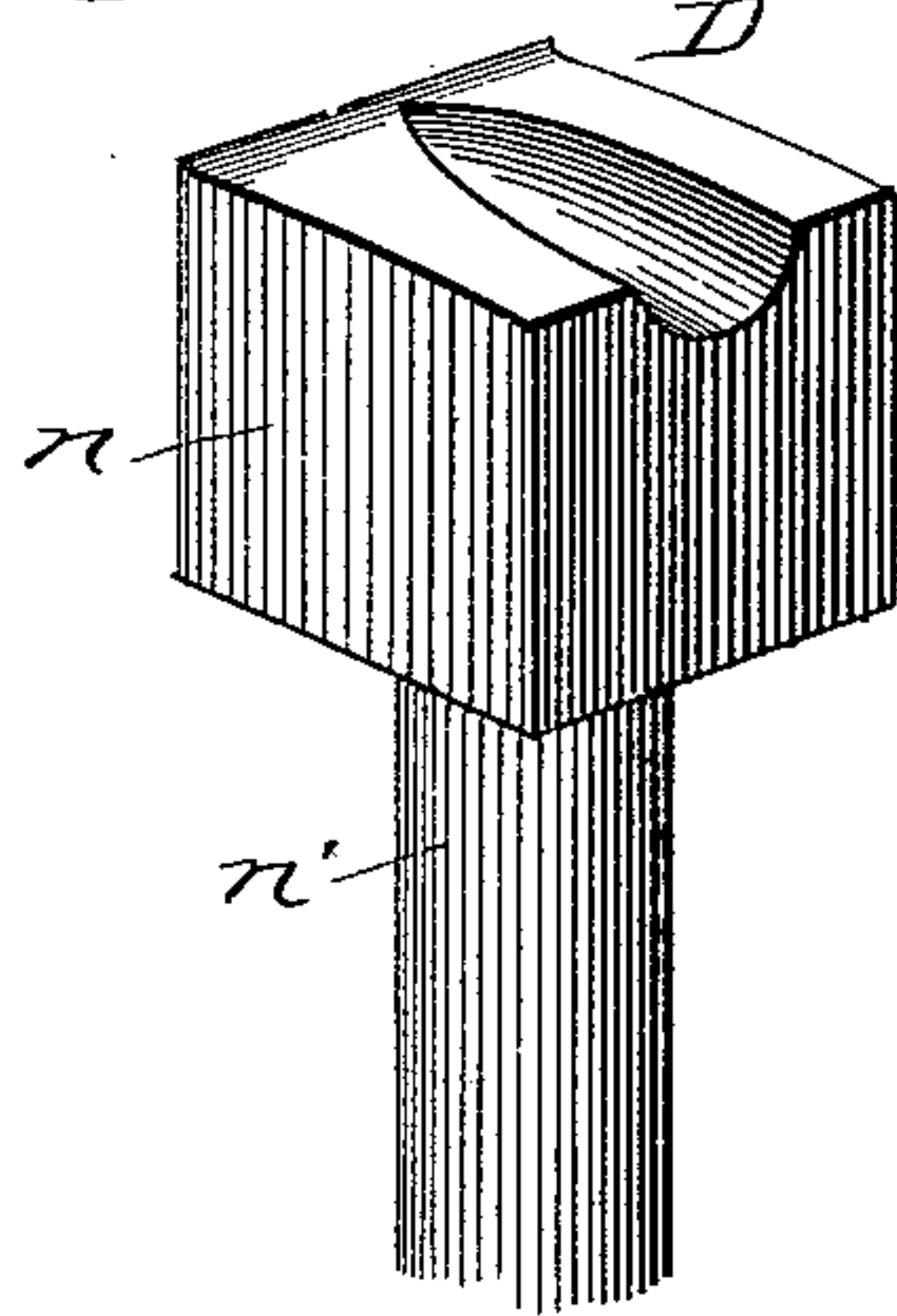


Fig. 2.

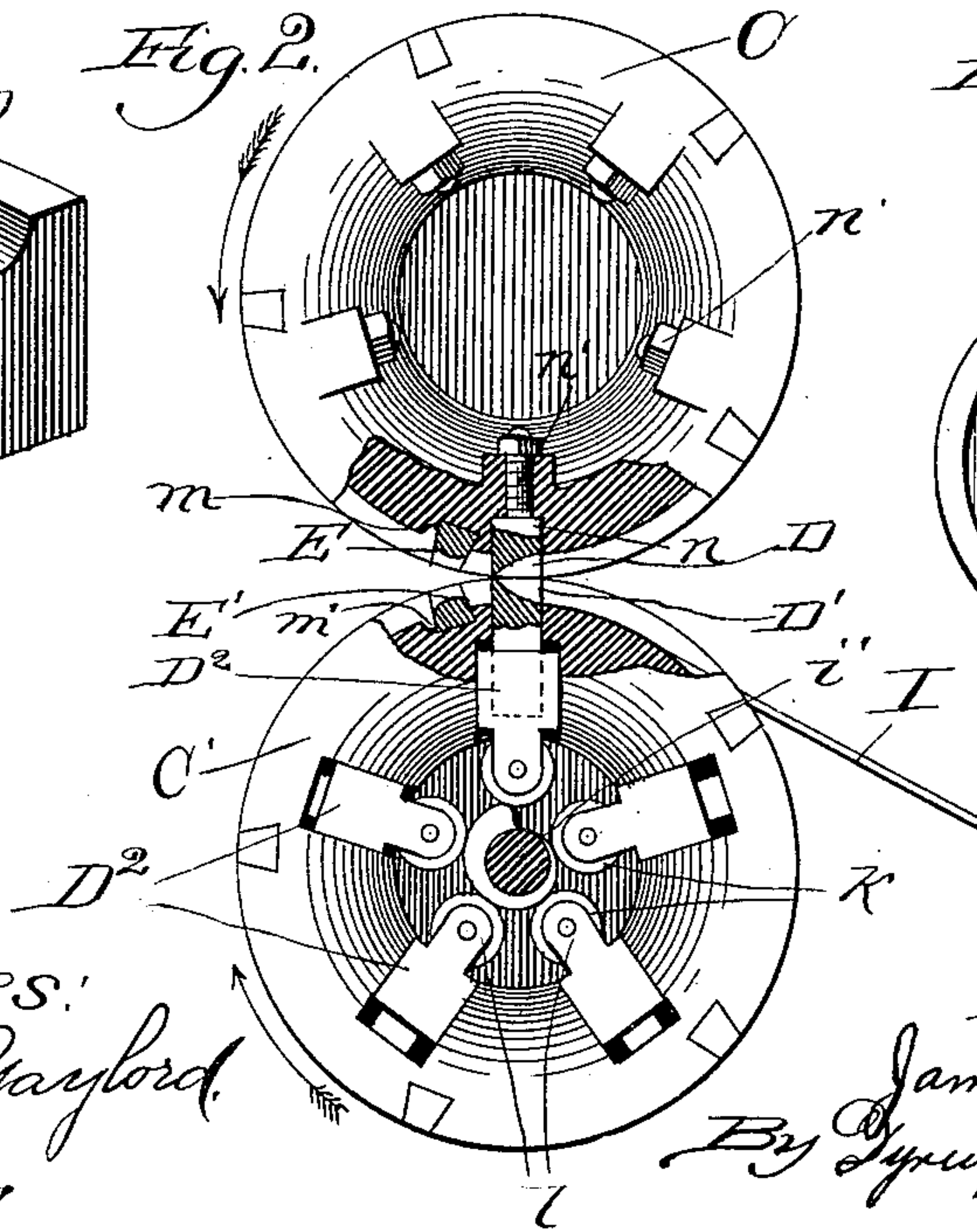
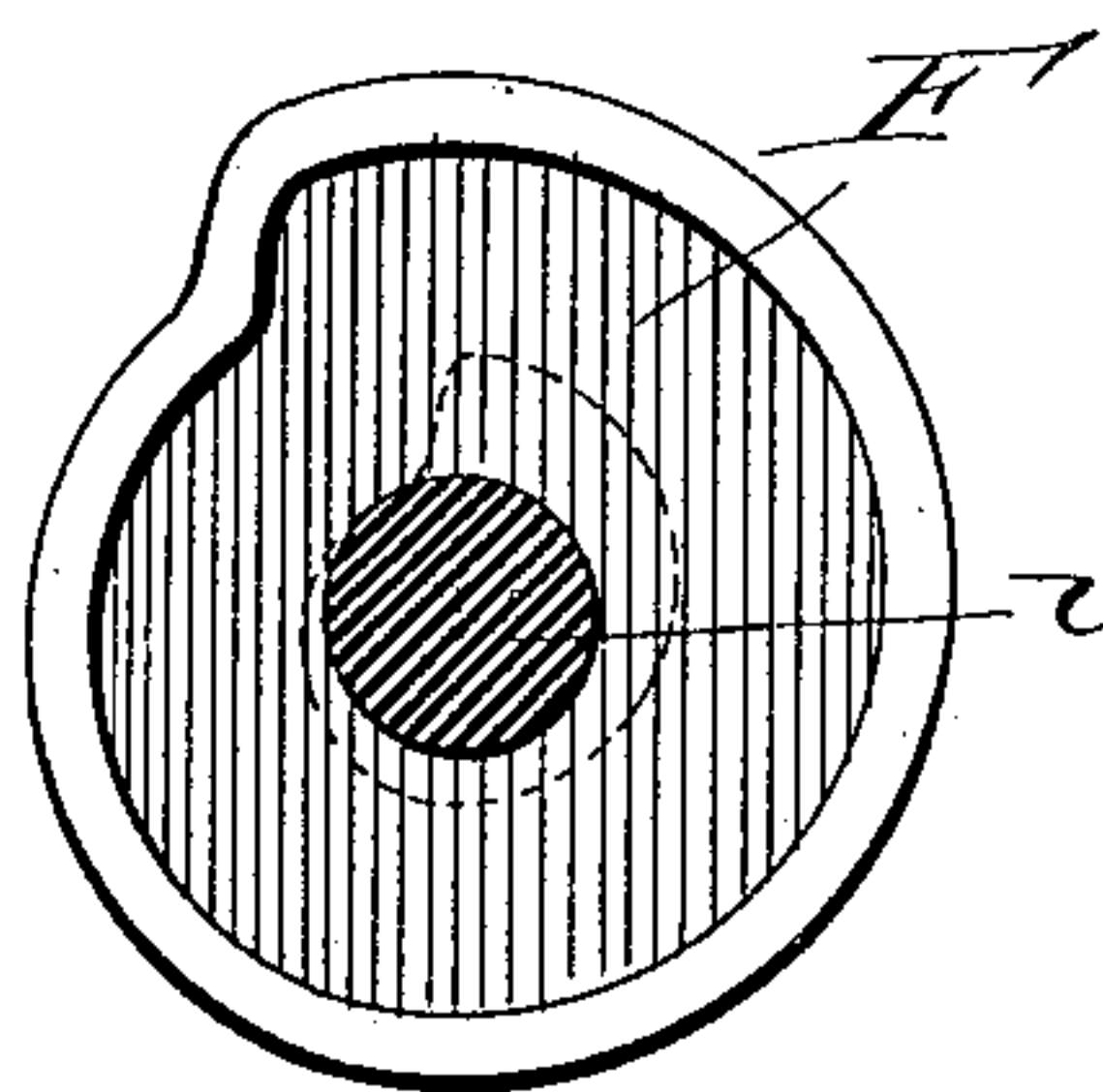


Fig. 4.



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2 Sheets—Sheet 2.

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Fig. 5.

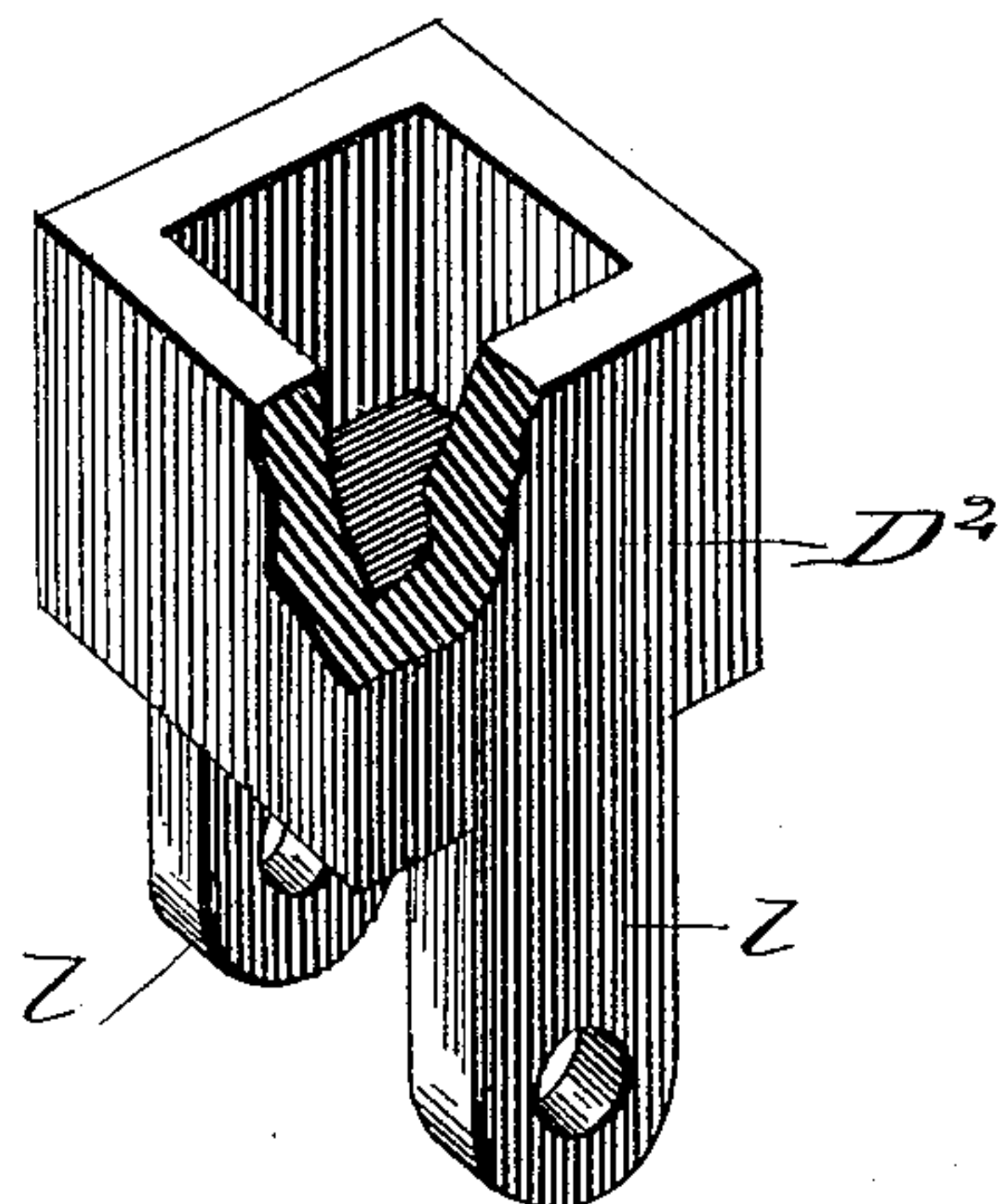


Fig. 6.

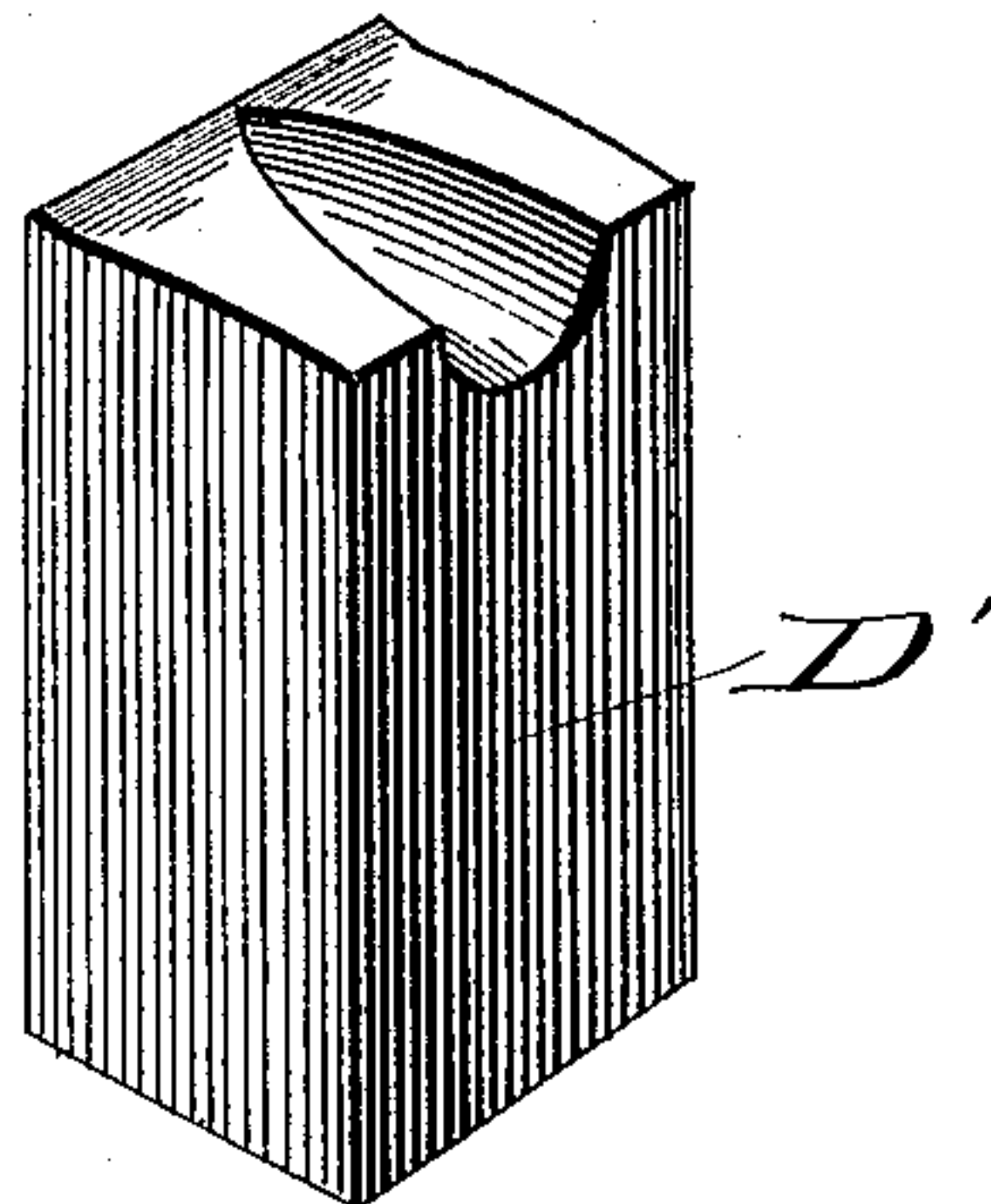


Fig. 7.

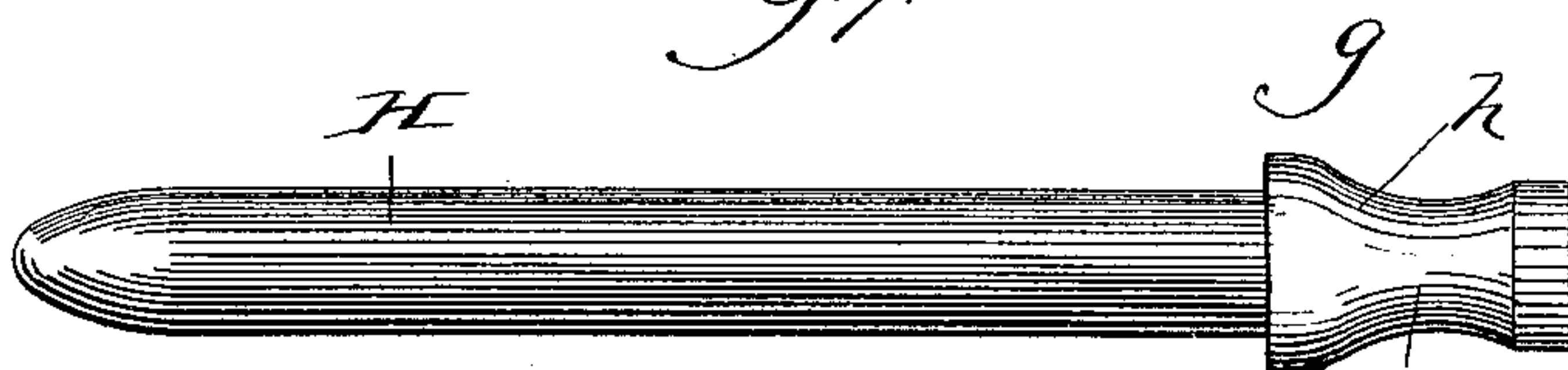


Fig. 8.

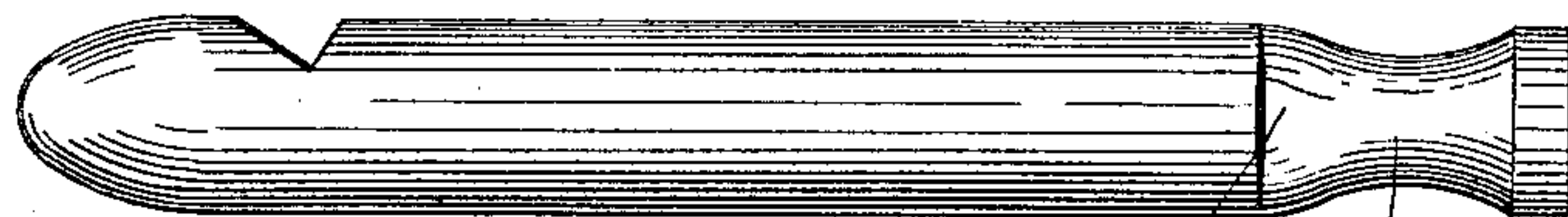


Fig. 10.

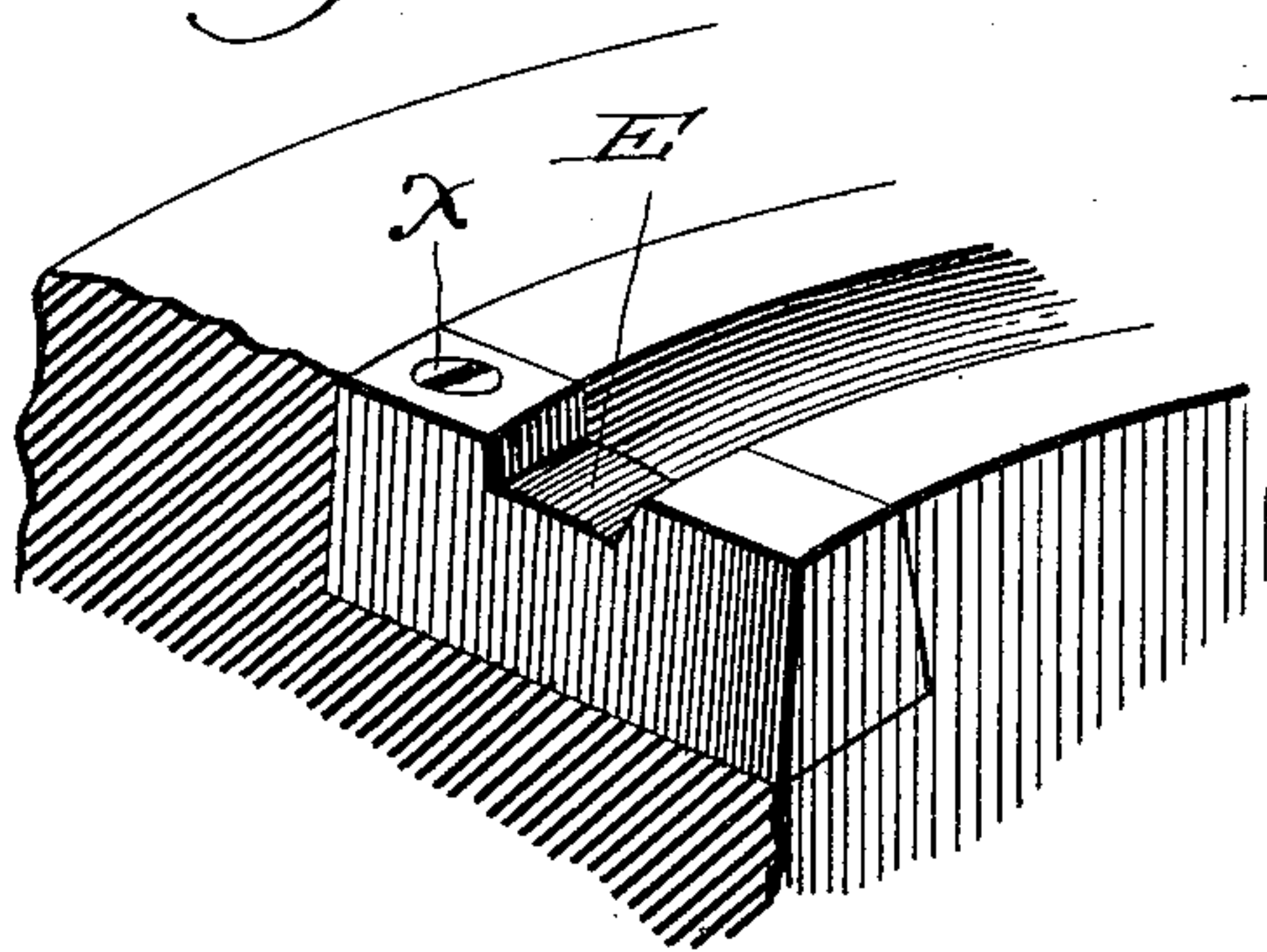
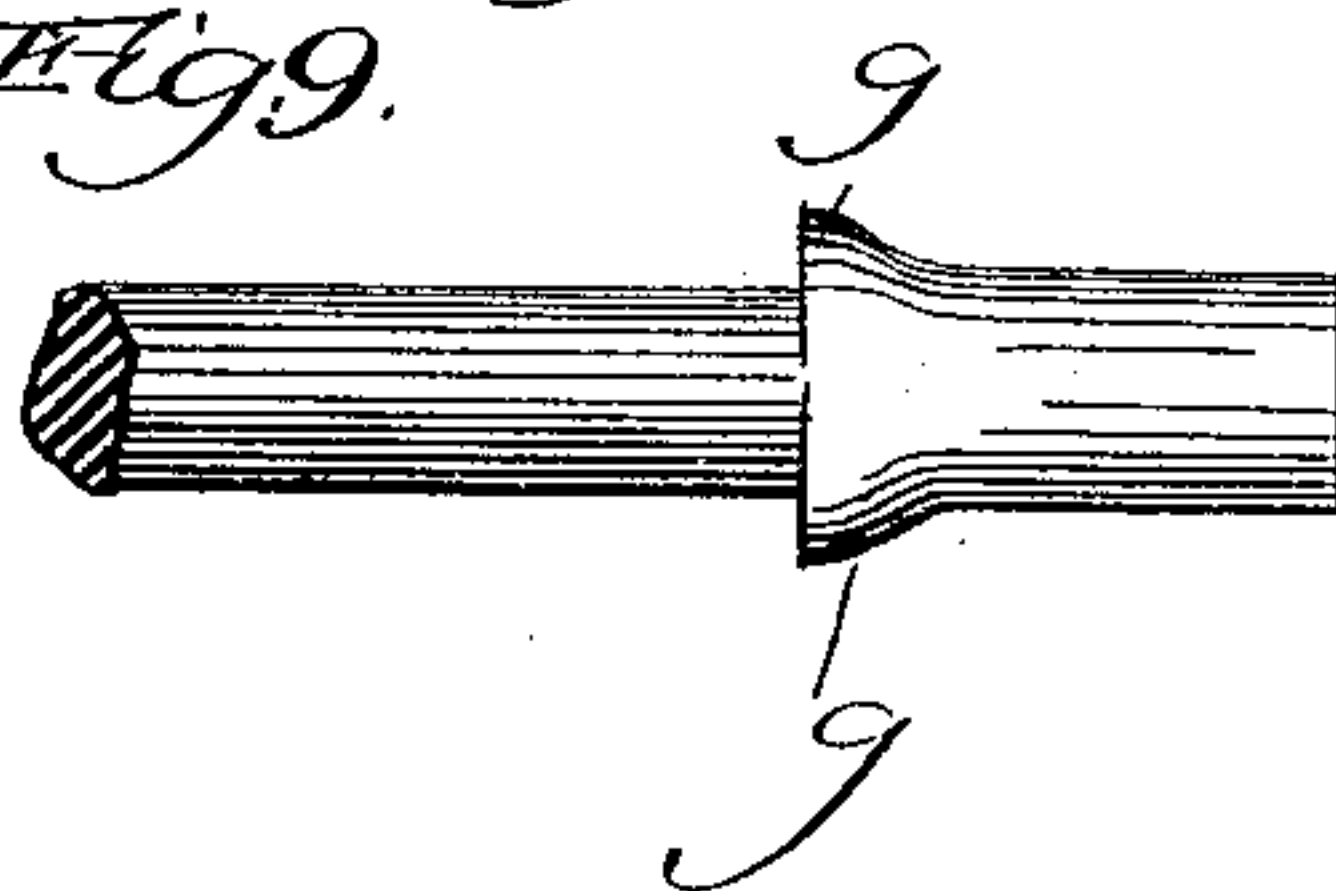


Fig. 9.



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UNITED STATES PATENT OFFICE.

JAMES J. ANDERSON, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO
ASA G. PETTIBONE AND A. H. MULLIKEN, BOTH OF SAME PLACE.

MACHINE FOR ROLLING CAR-COUPLING PINS.

SPECIFICATION forming part of Letters Patent No. 350,857, dated October 12, 1886.

Application filed January 26, 1886. Serial No. 189,807. (No model.)

To all whom it may concern:

Be it known that I, JAMES J. ANDERSON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and Improved Rolling Machine; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates, particularly, to a machine for rolling the coupling-pins for cars; and it is my object to produce perfect pins from continuous bar metal by feeding the bar between the rolls, which shall produce and discharge in each revolution as many disconnected and finished pins of the preferably uniform desired length as will equal in their combined lengths the circumference of a roll.

My invention consists in the general construction of my improved machine; and it also consists in certain details of construction and combinations of parts, all as hereinafter more fully set forth.

Referring to the drawings, Figure 1 is a side elevation of my improved machine partly in section, and having parts broken away to display details; Fig. 2, an end view of the rings forming the rolls, also having parts broken away to display details and showing the delivery-guide; Fig. 3, a perspective view of a detail; Fig. 4, a view in elevation of a cam; Figs. 5 and 6, perspective views of other details; Figs. 7 and 8, different forms of the pin produced by the machine; Fig. 9, another view of a broken pin of the form shown in Fig. 8, and Fig. 10, a perspective view of the swage device.

A and A' are the housings, located close together to afford bearings in proximity to each other for the spindles B and B', carrying gear-wheels *r* and *r'* between the housings in mesh with each other to cause the spindles to revolve toward each other by the movement of only one of the spindles to which the power is transmitted in a common manner. Set-screws *q* are provided in proper position to permit desired adjustment of the rings forming the rolls, hereinafter described.

C and C' are the rolls comprising rings secured on the ends of the respective spindles B and B', and held by means of bolts *p*, and

provided with peripheral grooves *o o'*, which coincide on the two rolls to afford, with the contact of their peripheries, the welding-recess. Within the groove *o* of the ring or roll C are dies D, of proper shape to produce the desired pointing of the pins in co-operating with their companion dies on the ring or roll C', as hereinafter described, and the dies D are formed in blocks or heads *n*, seated in recesses provided to receive them in the base of the groove *o*, and secured in rigid position by means of screw-bolts *n'* passing through the ring constituting the roll and extending into the lower sides of the heads *n*. As many dies D are thus provided the desired, preferably uniform, distance apart as are required to produce from a continuous bar a certain number of pins of predetermined length with each revolution of the roll.

Adjacent to each die D, and on the side thereof behind the same in the direction of rotation, is a swage or die, E, comprising a recess of desired form in a block, which is dovetailed transversely into the roll or ring C, as shown in Fig. 10, and held in position by means of a screw, *x*. At the rear end of the recess in each swage or die E is a recess, *m*, in the groove of the roll, serving a purpose hereinafter described. The lower ring or roll, C', is also a die-roll, in form like the roll C, and is provided with swages E', the exact counterparts of the swages E, and, like the latter, adjacent to recesses *m'* in the groove of the roll, and the swages E' are placed in position to coincide each with a swage, E, in the rotation of the rolls C and C', and in like manner to the dies D in the roll C dies D' are provided in the roll C', but are rendered reciprocating by means of which the following is a description:

Each die D' has its seat and fits tightly within a socket, D², provided on its lower side with perforated lugs *l*, forming bearings for the shaft of a friction-pulley, *k*, and the sockets D² carrying the dies D' are made to reciprocate in the openings provided to receive them through the ring or roll C' by means of a stationary cam, F, against which the rollers *k* extend to sustain the dies D'. The cam F is supported on a shaft, *i*, which extends at one

extremity through the center of the ring C' into the center of the spindle B' and is rigidly supported toward its opposite end in a bearing provided in a suitable standard, G.

5 The construction of the dies D' D², above set forth, affords the advantage that the part D' is readily removable from its socket to permit it to be ground down and sharpened when worn, whereby the life and usefulness of the
10 die are prolonged and economy is attained. When thus ground down, to prevent the shortening of the die thereby produced from interfering with its proper adjustment, packing in the form of a metal block of the desired
15 form and requisite thickness may be inserted into the bottom of the socket.

The construction of the machine, whereby the rolls operate without their housings instead of between the latter, as is the most common manner of constructing machines of the
20 present description, affords very great advantages, since, in such position, they are readily accessible for all of the many purposes requiring access to them, which they are not
25 by the other construction mentioned, and may be easily removed by simply withdrawing the screw-bolts *p* to permit the adjustment of other rolls having the same or different arrangements of parts, and this without the
30 necessity of disturbing other unwieldly and carefully and securely adjusted parts of the machine; besides, the annular form of the rolls permits ready access to the parts thereof—*i. e.*, the swages, dies, &c.—to allow them to be
35 removed for repair, and adjusted without disturbing the rolls themselves, and the close proximity of the housings and the limited distance to which the spindles project beyond them at the ends which carry the rolls, render
40 the latter perfectly rigid in their normally-relative operative positions and permit avoidance of the use of yokes, to prevent springing apart of the rolls by the strains, and which interfere with the ready accessibility and adjustment hereinbefore referred to.
45

In producing and delivering finished coupling-pins H the machine operates in the following manner: The rings forming the rolls C and C' are rotated in the direction indicated
50 by arrows in Fig. 2, and bar metal, oval in cross-section, to produce round or oval pins equal in cross-section to the diameter of contiguous grooves *o o'*, and heated to a welding heat, is fed between them. The swages E and
55 E', as they come together in pairs in the rotation of the rolls, owing to the convex form of their bases, as shown, form the head by compressing the bar to produce the concavities *h*, preferably on opposite sides of the bar, and
60 the metal removed in producing these concavities is forced into the recesses *m m'*, producing the flanges *g*. The continued rotation of the rolls brings dies D and D' together to form the point, at the extremity of which the
65 die D' is forced upward by the cam F to cause its rear end to meet that of the die D, whereby the bar will be severed after the point is formed,

and at the same time the head of a succeeding pin will be undergoing the operation of its formation. It will thus be seen that the result of
70 the continued rotation of the rolls fed with bar metal in proper lengths to permit ready handling of the same is perfect coupling-pins manufactured with a speed commensurate with the speed of the rotation of the rolls,
75 and as they are finished, to insure their removal, a delivery-guide, I, of common construction for a similar purpose is provided.

The different forms of pins shown in Figs. 7 and 8 are mere samples of the forms capable
80 of production by the machine with slight difference in the form of recess *o o'*, the first-named being round and the last-named oval. If it is desired to produce the notch *f*, (shown in Fig. 8,) a suitable projection properly lo-
85 cated may be provided on a die, D.

The word "annular," used as a qualifying term in connection with the rolls C and C', is not intended to include rolls provided with central openings to receive the journals or
90 other supports used to sustain them, this being a common and even a universal construction of rolls, which is also known to me in a machine for barbing metallic strips having the rolls supported on spindles at their ad-
95 jacent ends, which project beyond the housings, the rolls being thus rigidly maintained like mine in their normal relative positions. The rolls of the last-named machine, however, differ in construction from my rolls, inasmuch
100 as they are not annular in the sense that mine are annular, whereby I am enabled to gain access to the parts thereof—*i. e.*, the dies, swages, &c.—to remove them for repair and adjust them without being required for the purpose
105 to remove the rolls themselves, and the necessity for repair and adjustment of the parts is so common and arises so frequently that the particular construction of my rolls affords a very material advantage over rolls of the com-
110 mon construction above referred to.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a rolling-machine having die-rolls supported on spindles, the combination, with
115 a grooved die-roll, C', in the groove of the same, of reciprocating sockets D², and dies D', removably contained in the sockets, substantially as and for the purpose set forth.

2. In a rolling-machine, the combination,
120 with the spindles B B', of a grooved roll, C, having in the groove stationary swage, pointing, and severing dies, and a grooved roll, C', having in the groove stationary swage and reciprocating pointing and severing dies, whereby
125 a coupling-pin may be formed from a metal bar by first heading it, then pointing it, and, lastly, severing it while forming the head for a succeeding pin upon the bar, substantially as described.
130

3. In a rolling-machine, the combination of housings A A', in close proximity to each other, spindles B B', to be rotated toward each other and projecting toward adjacent ends

slightly beyond a housing, a grooved roll, C, detachably secured upon the projecting end of the spindle B, and having in the groove stationary swage, pointing, and severing dies, and
 5 a grooved roll, C', detachably secured upon the projecting end of the spindle B', and having in the groove stationary swage and reciprocating pointing and severing dies, whereby the rolls are rigidly maintained in their normally-rela-
 10 tive operative positions, and a coupling-pin may be formed from a metal bar by first heading it, then pointing it, and, lastly, severing it while forming the head for a succeeding pin upon the bar, substantially as described.

15 4. In a rolling-machine, the combination, with the spindles B B', of an annular grooved and recessed roll, C, having in the groove stationary swage, pointing, and severing dies, an annular grooved and recessed roll, C', having
 20 in the groove stationary swage and reciprocating pointing and severing dies, whereby a coupling-pin may be formed from a metal bar by first heading it, then pointing it, and, lastly, severing it while forming the head for a suc-
 25 ceeding pin upon the bar, and a cam, F, to sustain and reciprocate the pointing and severing dies in the roll C', substantially as described.

5. In a rolling-machine, the combination of housings A A', in close proximity to each oth-
 30 er, spindles B B', to be rotated toward each other and projecting toward adjacent ends slightly beyond a housing, an annular grooved and recessed roll, C, detachably secured upon the projecting end of the spindle B, and having
 35 in the groove stationary swage, pointing, and

severing dies, an annular grooved and recessed roll, C', detachably secured upon the project-
 ing end of the spindle B', and having in the groove stationary swage and reciprocating
 40 pointing and severing dies, and a stationary cam, F, to sustain and reciprocate the point-
 ing and severing dies in the roll C', whereby the rolls are rigidly maintained in their nor-
 mally-relative operative positions, and a coup-
 45 ling-pin may be formed from a metal bar by
 first heading it, then pointing it, and, lastly, sev-
 ering it while forming the head for a succeed-
 ing pin upon the bar, substantially as described.

6. In a rolling-machine, the combination of housings A A', in close proximity to each oth- 50
 er, spindles B B', to be rotated toward each other and projecting toward adjacent ends slightly beyond a housing, an annular grooved
 and recessed roll, C, detachably secured upon
 55 the projecting end of the spindle B, and having
 in the groove stationary swage, pointing, and
 severing dies, an annular grooved and recessed
 roll, C', detachably secured upon the project-
 ing end of the spindle B', and having in the
 groove stationary swage and reciprocating and 60
 removably adjustable pointing and severing
 dies, and a stationary cam, F, upon a rigid
 shaft supported at one extremity by the spin-
 dle B', and operating to sustain and recipro-
 cate the pointing and severing dies in the roll 65
 C', substantially as and for the purpose set forth.

JAMES J. ANDERSON.

In presence of—

JULIUS W. DYRENFORTH,
 A. H. MULLIKEN.