

(No Model.)

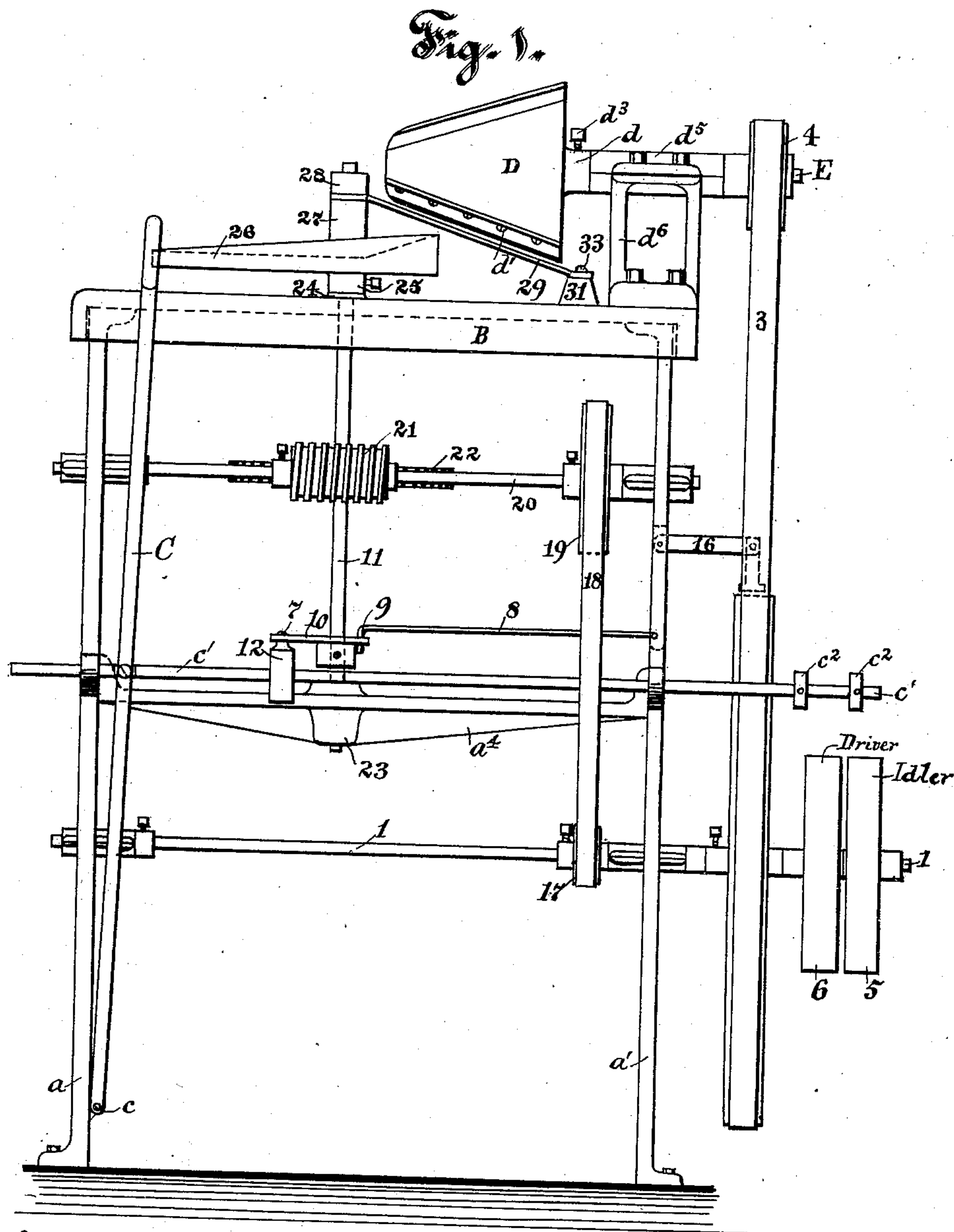
4 Sheets—Sheet 1.

E. GOLDMAN.

MACHINE FOR SHAPING FLEECY MASSES.

No. 389,645.

Patented Sept. 18, 1888.



Witnesses:

Edw. E. Clements,
Jamil. H. Jacobson

Inventor:

Inventor:
Edward Goldman
by Abraham and Mayer

Attorneys.

(No Model.)

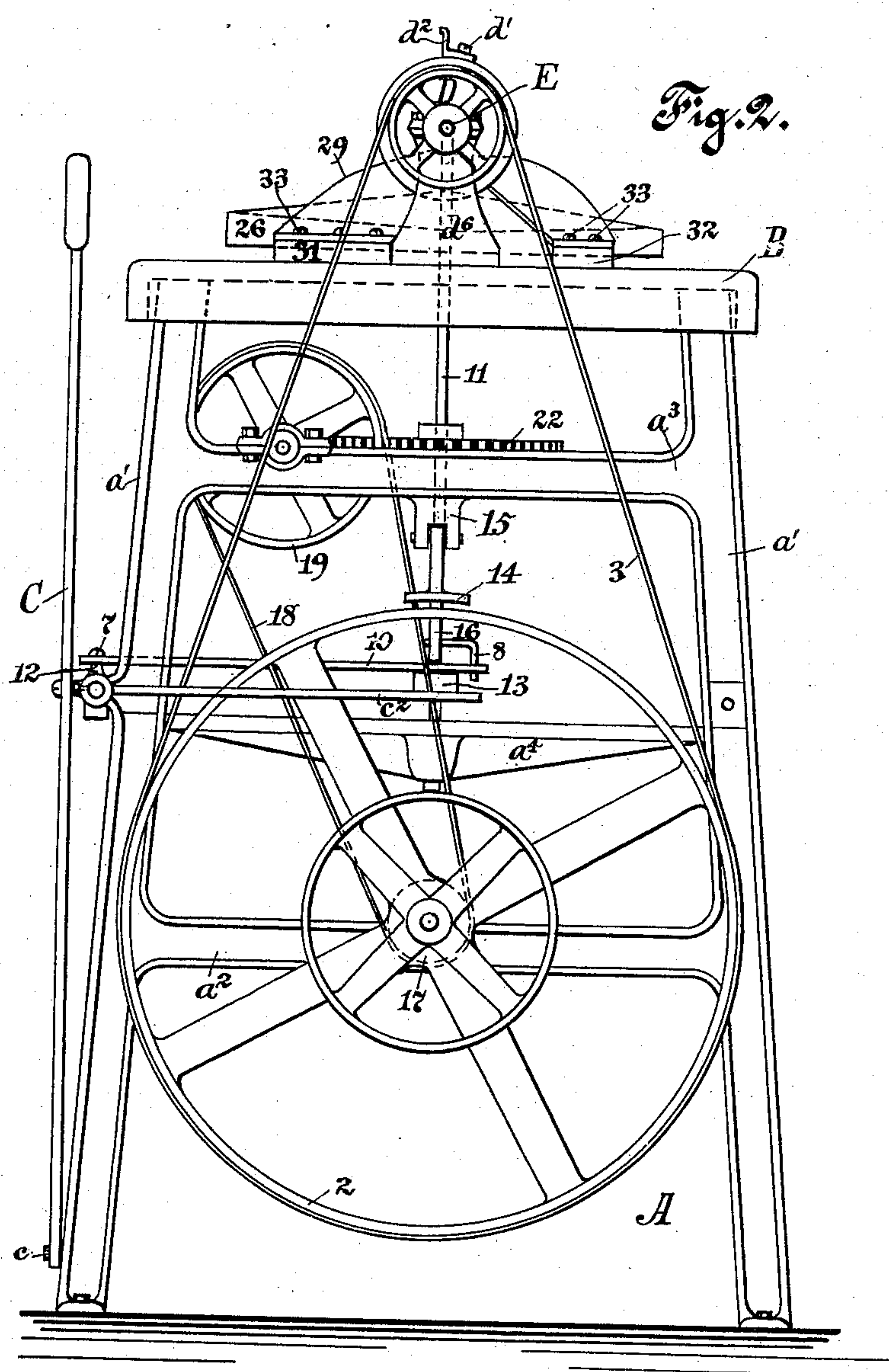
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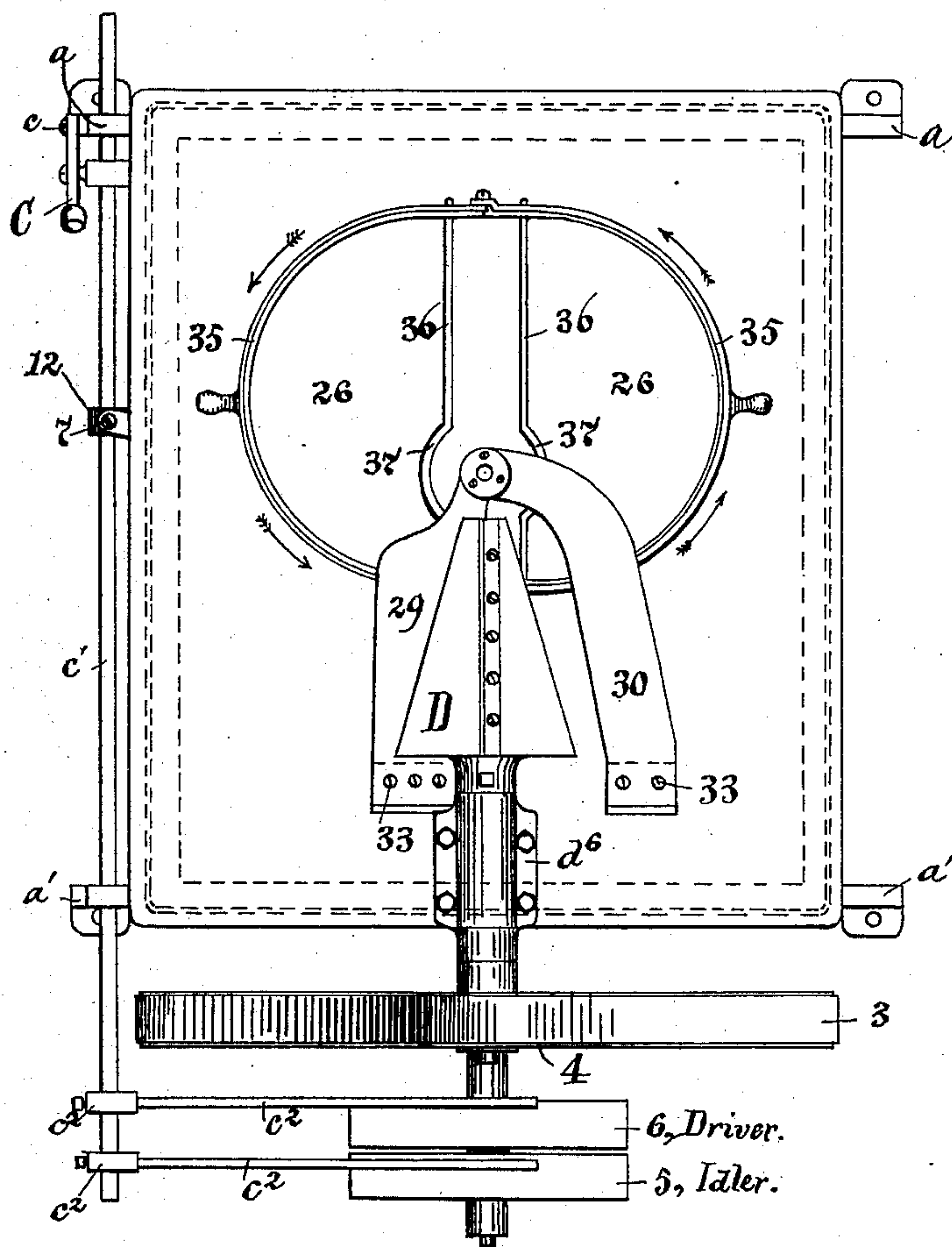
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Fig 3.



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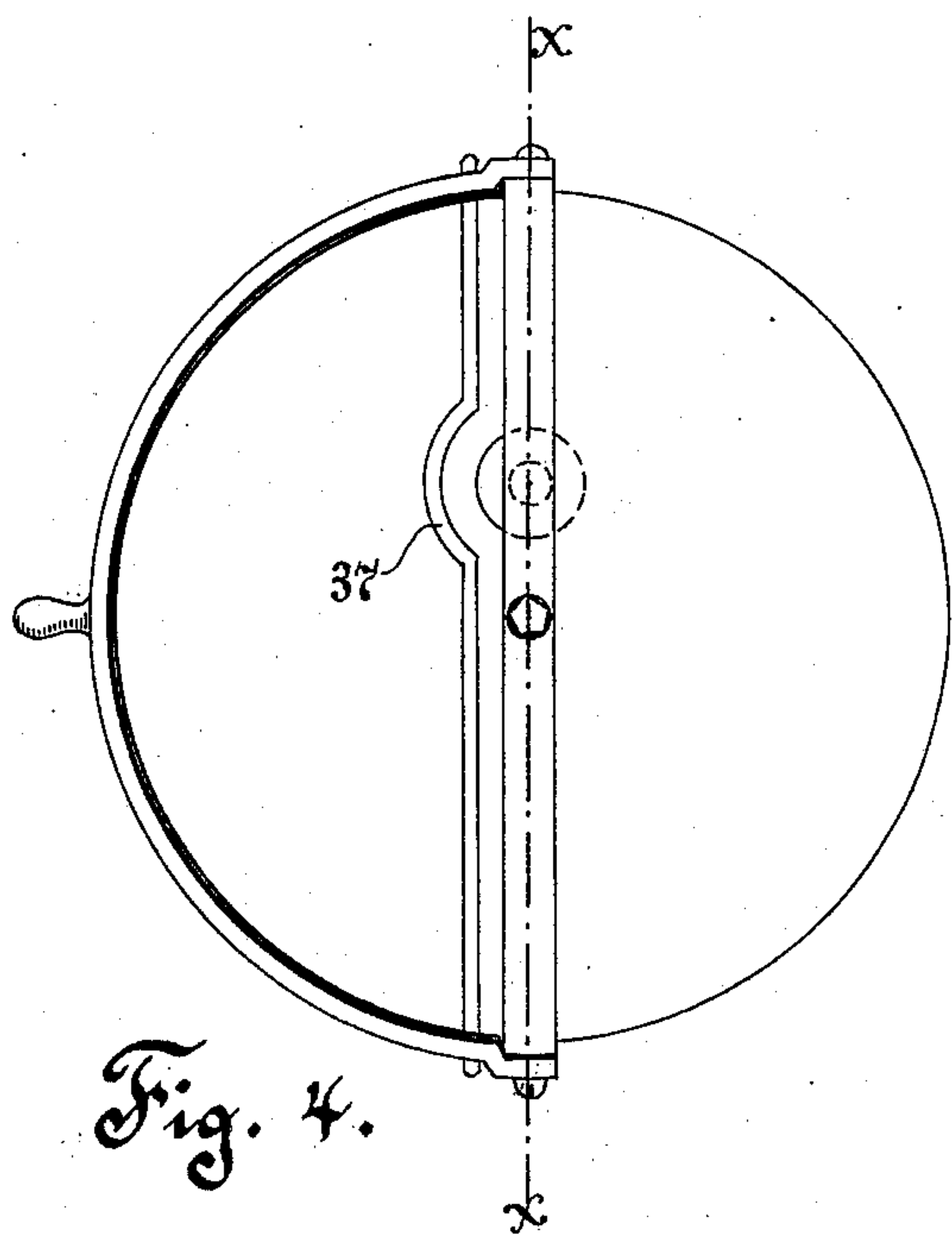


Fig. 4.

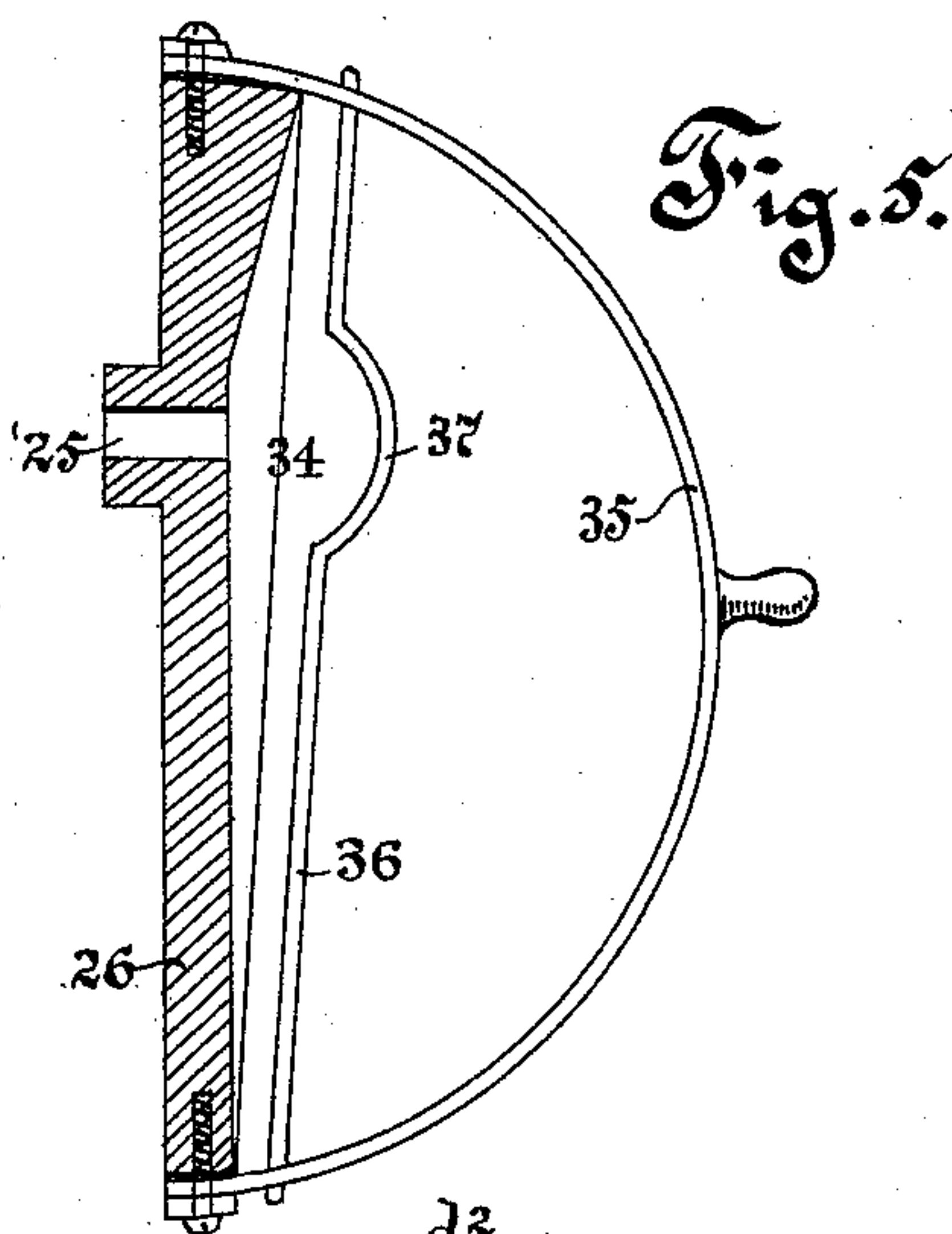


Fig. 5.

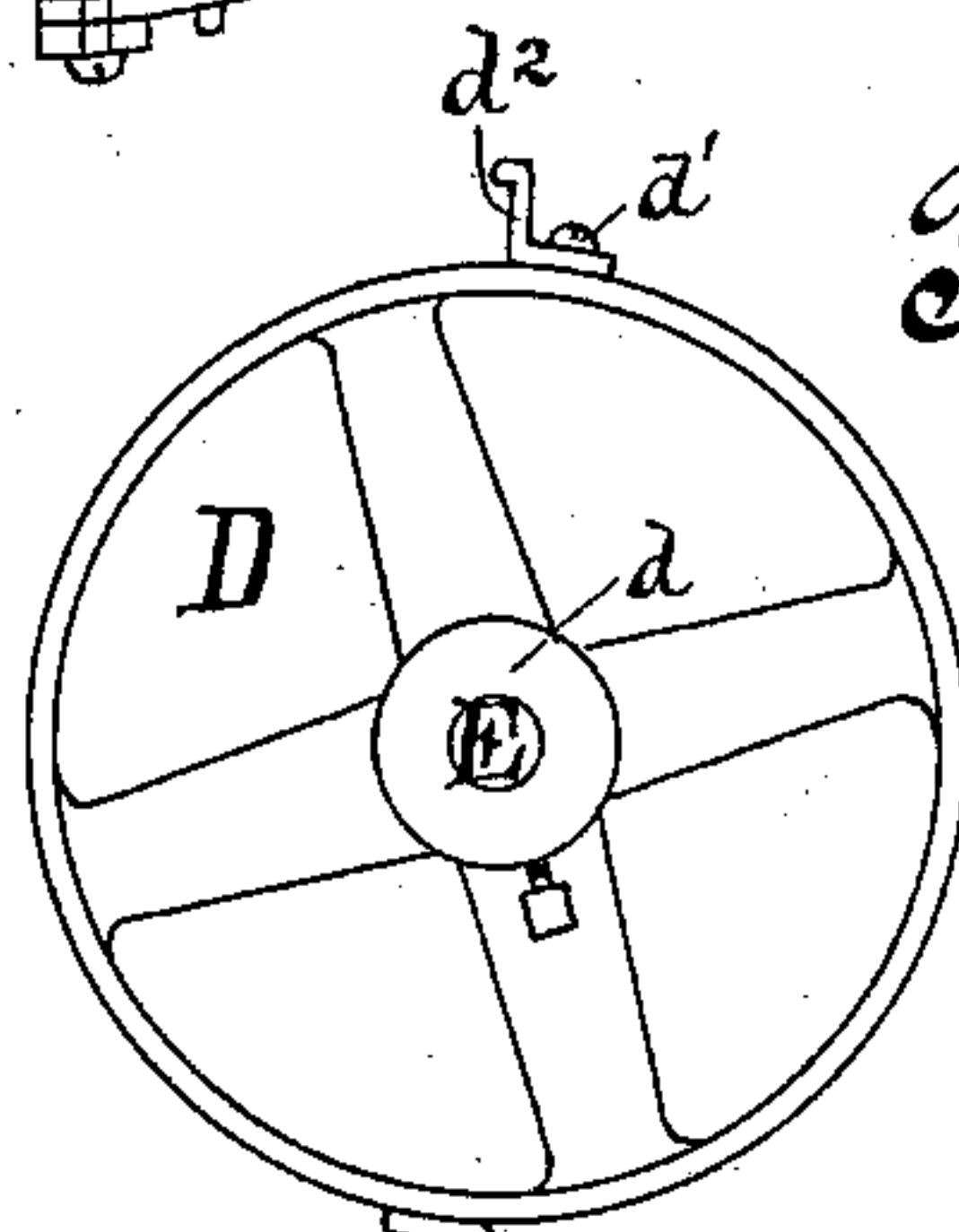


Fig. 7.

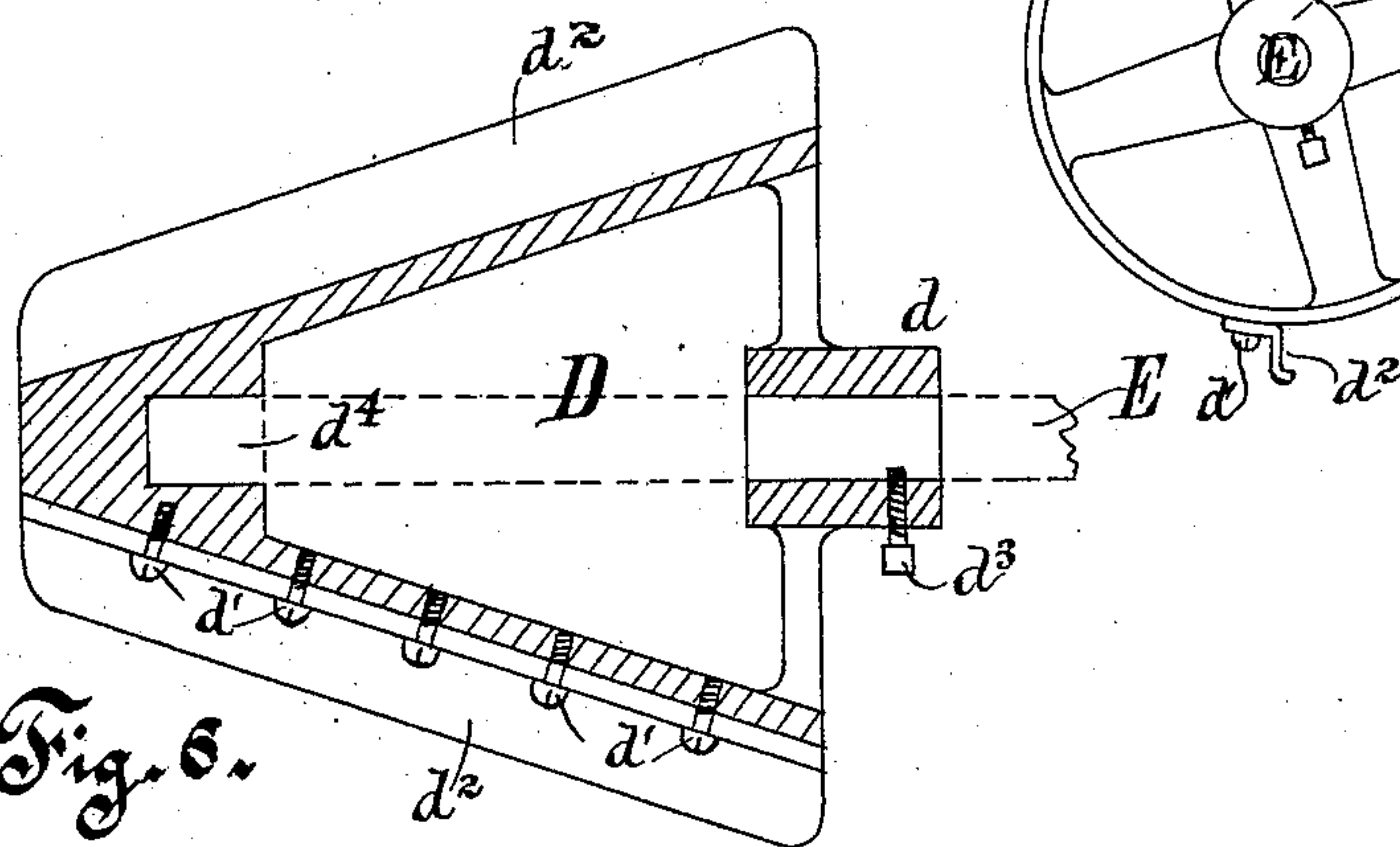


Fig. 6.

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UNITED STATES PATENT OFFICE.

EDWARD GOLDMAN, OF BALTIMORE, MARYLAND.

MACHINE FOR SHAPING FLEECY MASSES.

SPECIFICATION forming part of Letters Patent No. 389,645, dated September 18, 1888.

Application filed April 26, 1887. Serial No. 236,264. (No model.)

To all whom it may concern:

Be it known that I, EDWARD GOLDMAN, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented a new and useful Improvement in Machines for Shaping Fleecy Masses, of which the following is a specification.

My invention relates to mechanism for shaping fleecy fabrics of irregular surfaces, and has special reference to the provision of means for the production of shoulder-pads shown and described in Letters Patent granted to me, dated March 15, 1887, and numbered 359,441.

My invention comprises devices whereby a mold-bed eccentrically pivoted shall be caused to revolve in a horizontal plane under rapidly-revolving stripping-blades and in the method and means whereby a homogeneous fleecy mass confined to said bed shall have its surfaces suitably shaped.

My invention further provides certain novel forms of mechanism and combinations thereof for the purposes set forth, all as hereinafter particularly described, illustrated in the drawings, and specifically pointed out in the claims.

Referring to the accompanying drawings, in which similar letters of reference point out like parts on each figure, Figure 1 represents an end elevation of a machine embodying my invention. Fig. 2 is a side elevation thereof. Fig. 3 is a top plan view of the machine. Fig. 4 is a detail view of the mold-bed, one section of the retaining-bail lying flat, the opposite section lifted at right angles to the plane of the bed. Fig. 5 is a sectional view on the line $x x$ of Fig. 4, having attached thereto one section of the bail lifted up. Fig. 6 is an enlarged longitudinal section of the blade-bearing stripper. Fig. 7 is a rear view of the stripper.

In the drawings, A is the frame of the machine, consisting, essentially, of standards $a a'$, and side braces, $a^2 a^3$, supporting a table, B. The frame is further provided with an additional brace, a^4 , extending diagonally from the four corner standards to a common center and supplied with a socket, 23, for a purpose to be presently set forth. The lower braces, a^2 , are provided with journal-boxes to carry a main shaft, 1, upon which shaft, outside of the frame, is a master-pulley, 2, provided with

belting 3 to transmit motion to the pulley 4 of the stripper-shaft. Outside of the pulley 2, and journaled upon the main shaft 1, is a driving-pulley, 6, and an idler, 5. The pulley 6 is connected by belting to any suitable motive power. (Not shown in the drawings.)

C is the lever of a belt-shifting device, which is pivoted to the lower part of one of the standards at c , operating through the cross-bar c' the shifters $c^2 c^3$. Pivottally connected to the arm of a bell-crank lever, 16, and extending midway of the frame, is a rod, 8. Said rod is returned downwardly at its inner end to form a hook or bend, 9, which bend takes into an orifice near the edge of a rod, 10, for a purpose hereinafter explained. The rod 10 extends outwardly beyond the frame of the machine and is pivottally connected by means of a strap, 12, to the shifting-bar c' by a set-screw, 7. Under the bar 10 is a short orificed collar, 13, which turns with the shaft 11.

14 is a brake-shoe the arm of which is pivottally connected within the fork of a hanger, 15, depending from brace a^3 , and said shoe by swinging of the lever C is, through a bell-crank lever, 16, brought against the periphery of the pulley 2 simultaneously and by the same action that operates the belt-shifters c^2 .

The vertical shaft 11 is set in motion in the following manner: Upon the driving-shaft 1, inside the frame, is a small pulley, 17, which, through belting 18, operates a pulley, 19, upon an upper shaft, 20, journaled in the opposite braces, a^3 , said shaft reaching across the frame away from its center. Midway of the shaft 20 is a worm, 21, meshing into a worm-wheel, 22, rigidly attached to the vertical shaft 11, which causes the mold-bed to turn on its eccentric axis concurrently with said shaft 11. The several operative pulleys and gearings are arranged to have relative velocities, and I have found that the best results are obtained by the proportions herein set forth. The worm-shaft 20 is caused to turn one hundred times a minute, each revolution operating one of the one hundred pinions of the worm-wheel 22, the pitch being five-sixteenths of an inch. Consequently said wheel will turn completely once in a minute.

The shaft 11 extends downward to the cross-brace a^4 and has its bearing within a socket, 23. Said shaft passes upward through the table B,

through a washer, 24, and from thence through the eccentrically-located hub 25 of the mold-bed 26. Above said mold-bed is a collar, 27, and a screw-plate, 28, intermediately embracing the forward end of the metallic guard 29 and brace-plate 30. Upon the table B are posts 31 32, to which posts the guard 29 and brace-plate 30 are rearwardly, respectively, rigidly attached by screws 33. From the points of attachment to said posts the guard 29 and plate 30 each incline upwardly and obliquely, and after passing over the edge of the mold-bed extend forwardly until they reach the shaft 11. Said guard and brace-plate at their forward ends are bent over to a horizontal plane, and said bent-over portions are pierced for reception of the uprising end of the shaft 11, which is free to turn within the orifices of said guard and brace-plate. The horizontal end portions of these members are rigidly confined between the collar 27 and screw-plate 28, as before set forth, said screw-plate being orificed for passage of the uppermost end of shaft 11. (See Fig. 3.)

D is a stripper in the form of a hollow conical frustum, having a hub, d . Externally and rigidly attached by screws d' to the stripper are blunt-edged blades d'' , curved in direction of their length and extending the full length of said stripper.

E is a short shaft which passes through the hub d , to which it is screwed by set-screw d^3 , and extends from thence inside the stripper, where it is finally seated within recess d^4 . (See Fig. 6.) Said shaft extends in an opposite direction to and within the pulley 4, which pulley is in alignment with the master-pulley 2, and is connected thereto by belting 3, as heretofore set forth. The main shaft 1, when the machine is operated, revolves four hundred times a minute, and the relative diameters of the master-pulley 2 and stripper-pulley 4 are such as to cause the latter to make four thousand revolutions in the same period of time. The shaft E passes within journal-boxes d^5 , of ordinary construction, resting upon support d^6 , firmly bolted upon the table B. The mold-bed 26 has its upper surface in an oblique plane, each section provided with a recess, 34, to conform to the desired shape of one surface of the completed fleecy mass.

To enable all skilled in analogous devices to fully understand and practice my invention, I will describe its adaptation to manufacture shoulder-pads, for which Letters Patent aforesaid have been issued to me.

The mold-bed shown in the drawings is constructed to receive blanks for two pads falling, respectively, within the recesses 34. (See Fig. 5 and dotted lines, Fig. 1.) Upon said bed is placed a blank sheet of fleecy material—such as a cotton bat. Some of the thickness of this mass will necessarily rise above the upper plane of the mold-bed and the greater proportional depth will obviously appear exposed above the thinnest part of the bed. When motion is imparted to the machine, the blank

mass will be trimmed off to the desired configuration.

In order to prevent the fleecy mass during manipulation from being torn from the bed, I provide hinged wire bails 35, adjusted to swing on their pivots toward each side of the bed and over the blank mass, by which means said mass will be held down, and, as will be readily understood, may be withdrawn by lifting up the respective bail.

By reference to Figs. 4 and 5, it will be seen that each bail has a cross-rod, 36, provided with a curve, 37, which holds down that part of the mass under said cross-rod. After the blank has been thus confined, it is now ready to have its whole surface trimmed off. As before described, the mass does not extend in uniform thickness above the bed by reason of portions thereof being sunk within the recesses 34. It is therefore obvious that in order to secure the desired configurative finished surface the larger quantity of substance will be trimmed off where the greater depth appears above the upper oblique face-line of the bed. This is effected by means of the horizontal revolution of the bed around its axis adjusted away from its center to impart eccentric motion to said bed, thus presenting from time to time required surfaces to the action of the trimming-blades. Motive power having been transmitted to the machine through the driving-pulley, the stripper D is caused to revolve at a rapid velocity, in practice about four thousand revolutions in a minute. At the same time, through revolution of the shaft 11, actuated through the worm-wheel 22, the mold-bed, carrying its caged mass, is caused to turn eccentrically once in the same period of time. As the mold-board is turning, the caged mass carried thereon is caused to travel underneath the metal guard 29, and it will be readily understood that no portions beneath said guard can be stripped off. As soon, however, as the portions of the rotating mass are withdrawn from the guard, such freed portions are subjected to the action of the rapidly-revolving blades, which blades are gaged to approach close to but not into actual contact with the traveling mass. As before set forth, the blades of the stripper are curved in direction of their length, and the result of their rapid revolution is to create a powerful centrifugal suction that strips off filaments of the mass until its exposed surface is trimmed down to the desired configuration. When this is accomplished, the bails are swung up on their pivots, and the blanks are withdrawn and replaced with others for like treatment. After withdrawal, each blank is cut off by shears or dies to impart the required configuration to its perimeter.

Having now fully described my invention and the manner of its operation, what I claim, and desire to secure by Letters Patent, is—

1. In a machine for shaping fleecy masses, mold-bed 26, having one or more recesses upon its surface provided with swinging bails 35, whereby to confine material within said re-

cesses, the mold-bed being eccentrically journaled on a vertical shaft, as and for the purpose intended, substantially as described.

2. A mold-bed of the character described, 5 provided with surface recesses and having an eccentrically-located hub to receive a shaft, whereby when motion is imparted thereto said mold-bed will revolve on a horizontal plane, in combination with a series of strip- 10 ping-blades arranged to revolve above said mold-bed, as and for the purpose intended, substantially as described.

3. In a machine for shaping fleecy masses, a mold-bed of the character described, having 15 its upper surface in an inclined plane and provided thereupon with one or more recesses, said mold-bed being eccentrically pivoted on a vertical shaft, whereby when motion is im- 20 parted to the machine said mold-bed will revolve in a horizontal plane, in combination with a stripper, D, having outwardly-extending blades arranged to rotate adjacent to and above said mold-bed, as and for the purpose 25 intended, substantially as described.

4. The stripper D, in the form of a hollow conical frustum, provided exteriorly with a series of parallel blunt-edged blades extending 30 the full length of the stripper, each of which blades is troughed lengthwise by being curved its full length, substantially as described.

5. In a machine for shaping fleecy material, the guard-plates 29 and 30, firmly attached at one end to posts upon the table of the machine, and from thence inclining upwardly, their 35 other ends being held between collar 27 and screw-plate 28, surrounding the upper end of a shaft passing through said table, as and for the purpose intended, substantially as described.

6. A machine for shaping fleecy material

having connected to its frame a main shaft, 40 master-pulley, idler, and suitable gearing, and supplied with belt-shifters c^2 c^2 , operated by lever C, the brake-shoe 14, pivotally connected within a bifurcated hanger depending from brace a^3 , in combination with bell-crank lever 45 16, whereby as the belt of the master-pulley is removed therefrom said brake-shoe will simultaneously be brought against the periphery of said master-pulley, as and for the purpose in- 50 tended, substantially as described.

7. The vertical shaft 11, provided with a horizontal worm-wheel, 22, meshing with the worm 21 of shaft 20, said shaft 11 extending 55 upwardly through the table B, mold-bed 26, and forward ends of guards 29 and 30, and being firmly keyed to the hub of said mold-bed, in combination with the rotary blade-bearing 60 stripper D, whereby when motion is imparted to the machine the mold-bed will revolve on a horizontal plane, substantially as described.

8. In a machine for shaping fleecy material, a mold-bed having an eccentrically-located bore through which passes the end of a verti- 65 cal revoluble shaft, whereby said bed is caused to revolve in a horizontal plane, in combination with a rapidly-rotatable stripper provided externally with curved blunt-edged blades, said 70 stripper extending partly over the plane of the bed, substantially as described.

9. In a machine for shaping fleecy material, 70 the combination of the rotatable stripper, the mold-bed, and obliquely-inclined guard-plates, as and for the purpose intended, substantially as described.

EDWARD GOLDMAN.

Witnesses:

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