

No. 859,721.

PATENTED JULY 9, 1907.

C. ARDUSER.
MACHINE FOR CRACKING OFF GLASS ARTICLES.

APPLICATION FILED FEB. 8, 1907.

3 SHEETS—SHEET 1.

Fig - 1 -

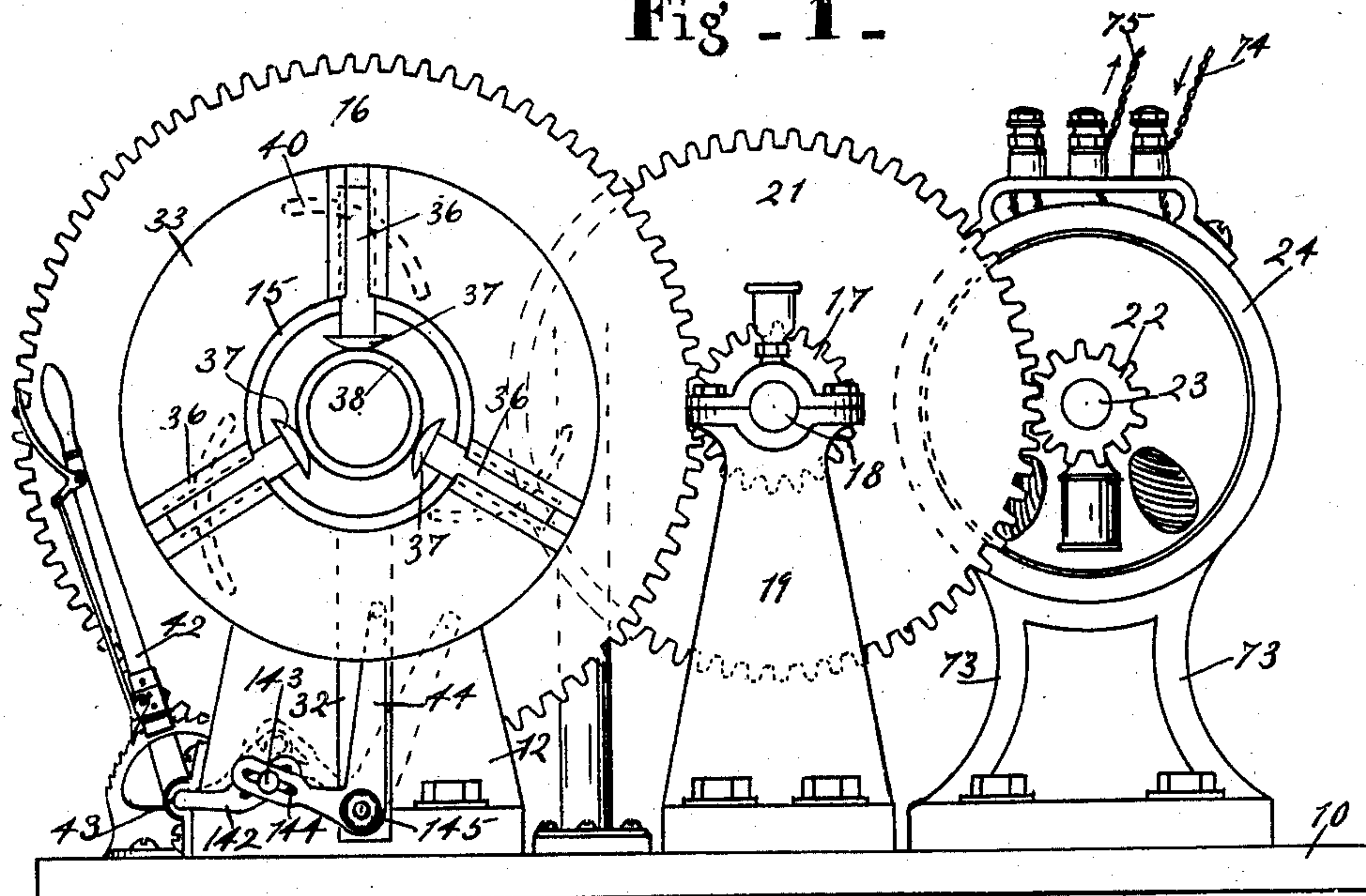
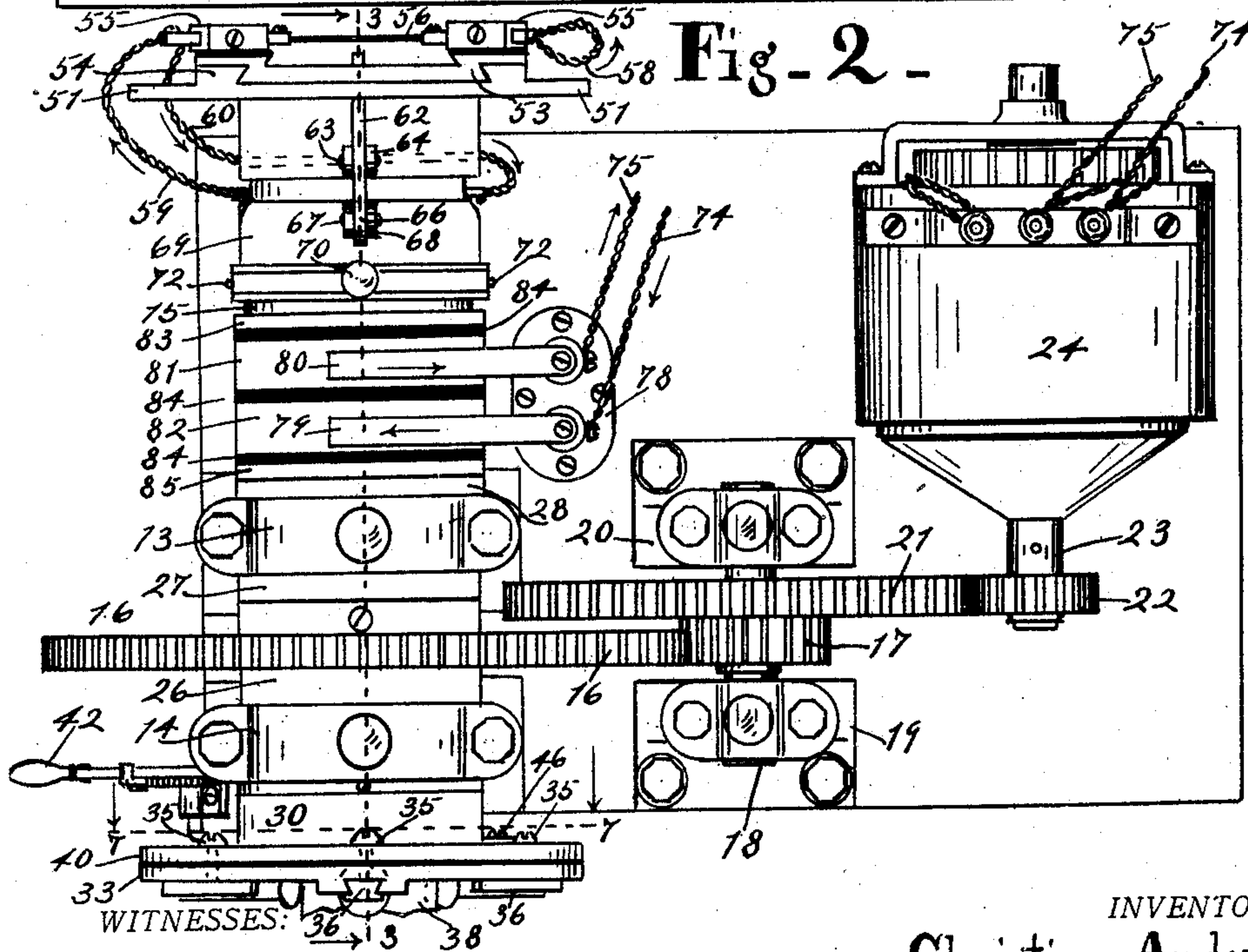


Fig - 2 -



WITNESSES:

N. Allamong
W. M. Gentle.

INVENTOR.

Christian Arduser.

BY

W. H. Fairwood
ATTORNEY.

No. 859,721.

PATENTED JULY 9, 1907.

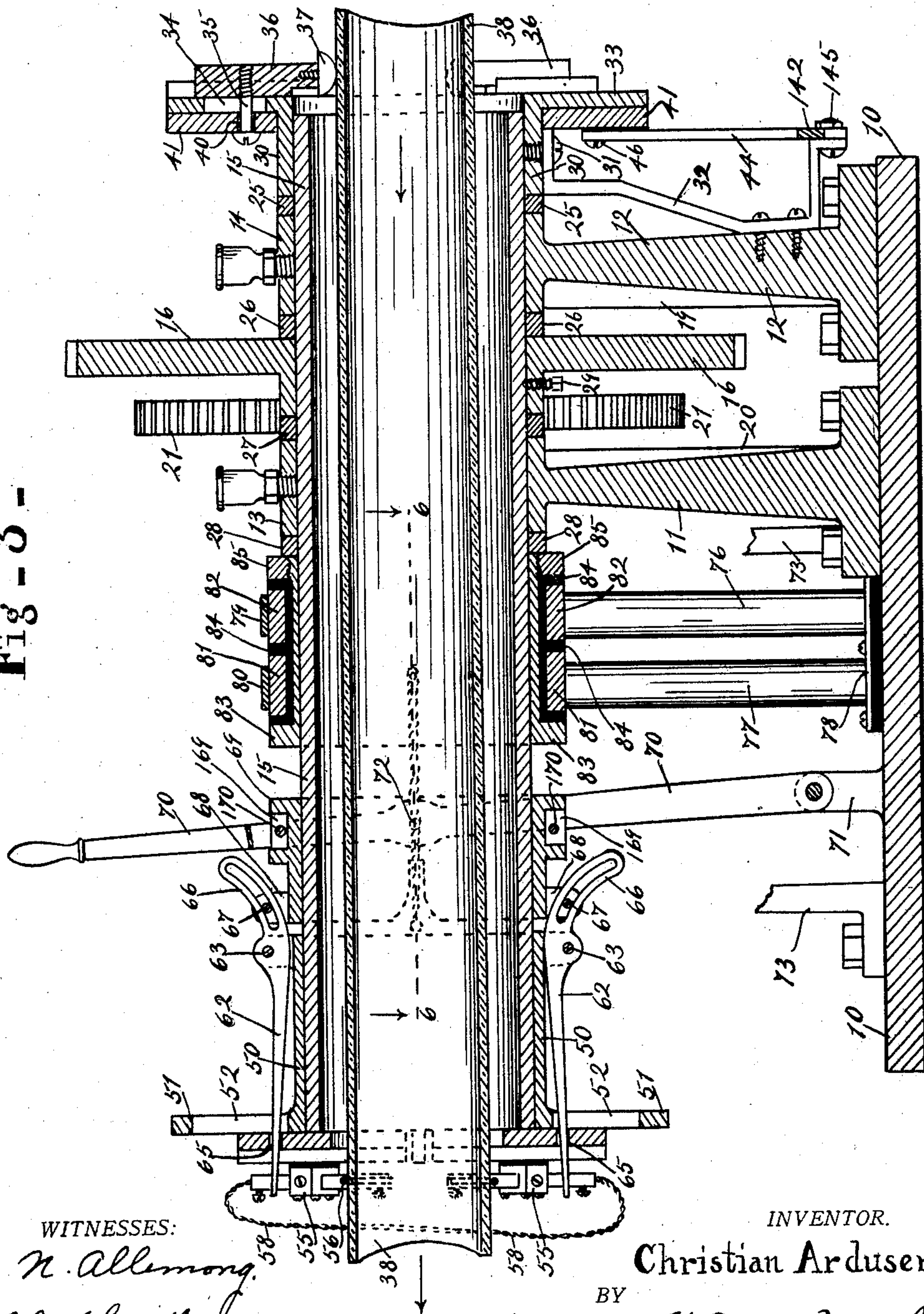
C. ARDUSER.

MACHINE FOR CRACKING OFF GLASS ARTICLES.

APPLICATION FILED FEB. 8, 1907.

3 SHEETS—SHEET 2.

Fig. 3



WITNESSES:

N. Allmoning.

W. M. Gentle.

INVENTOR.

Christian Arduser.

BY

V H Luskwood
ATTORNEY.

ATTORNEY.

No. 859,721.

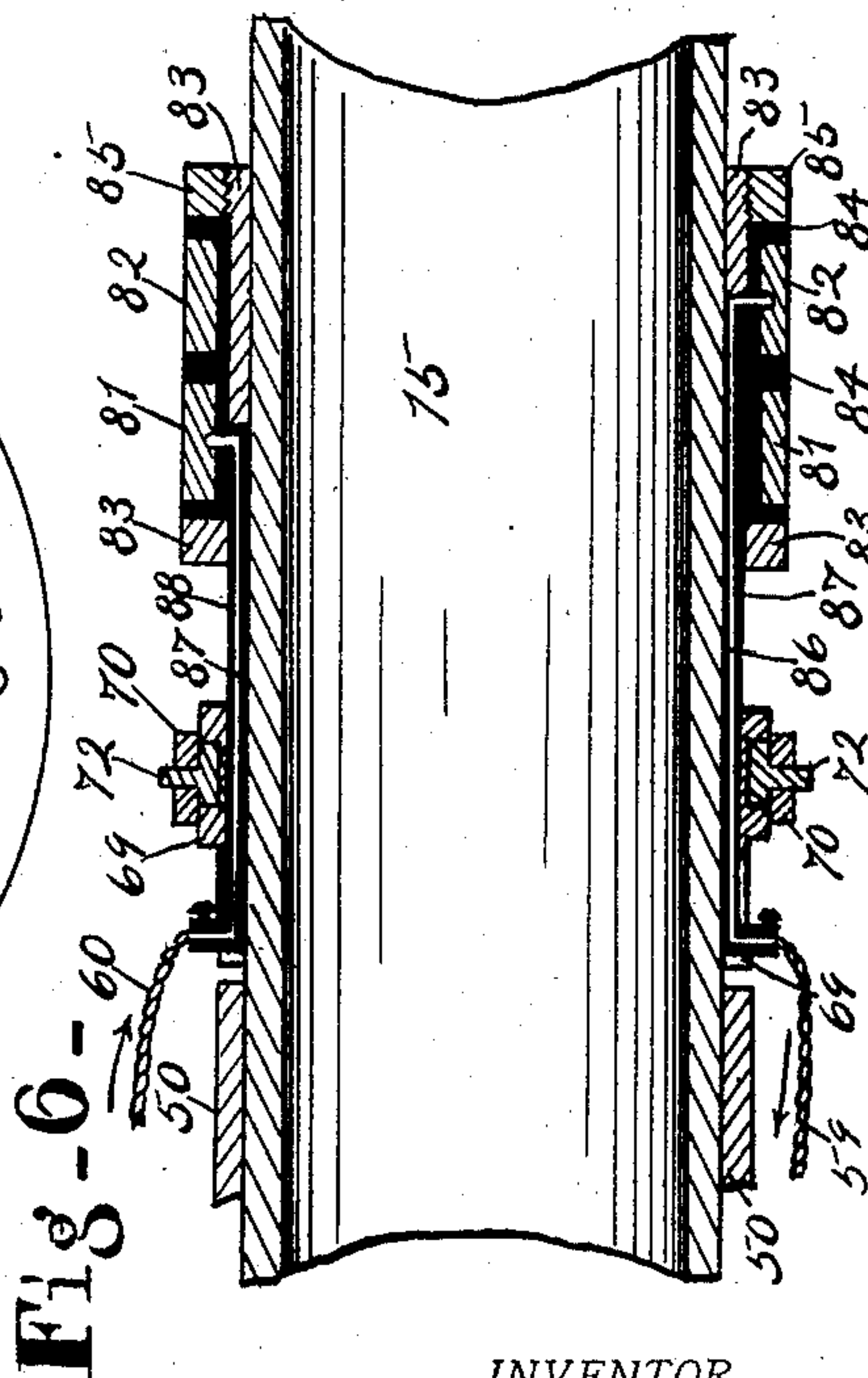
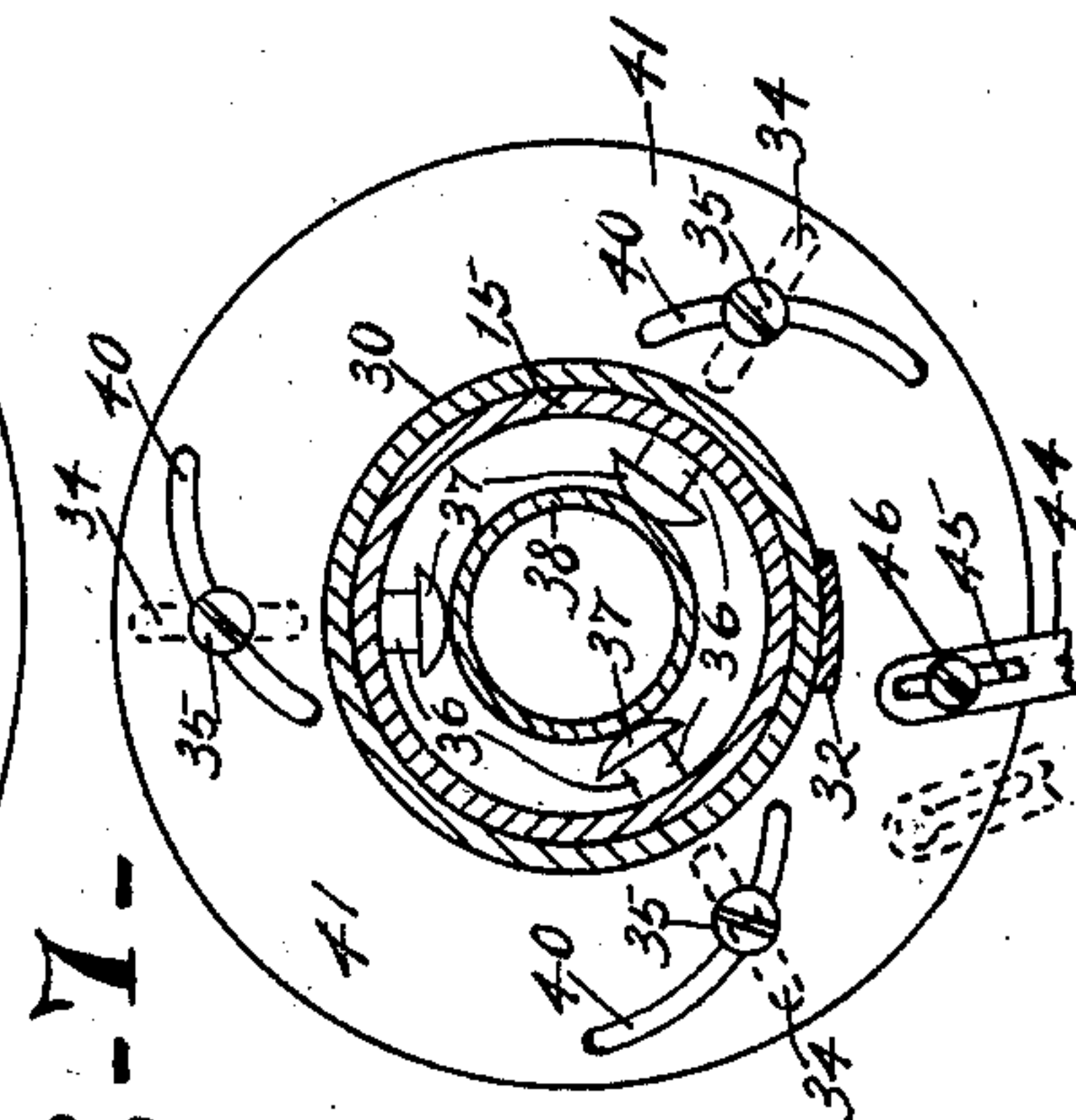
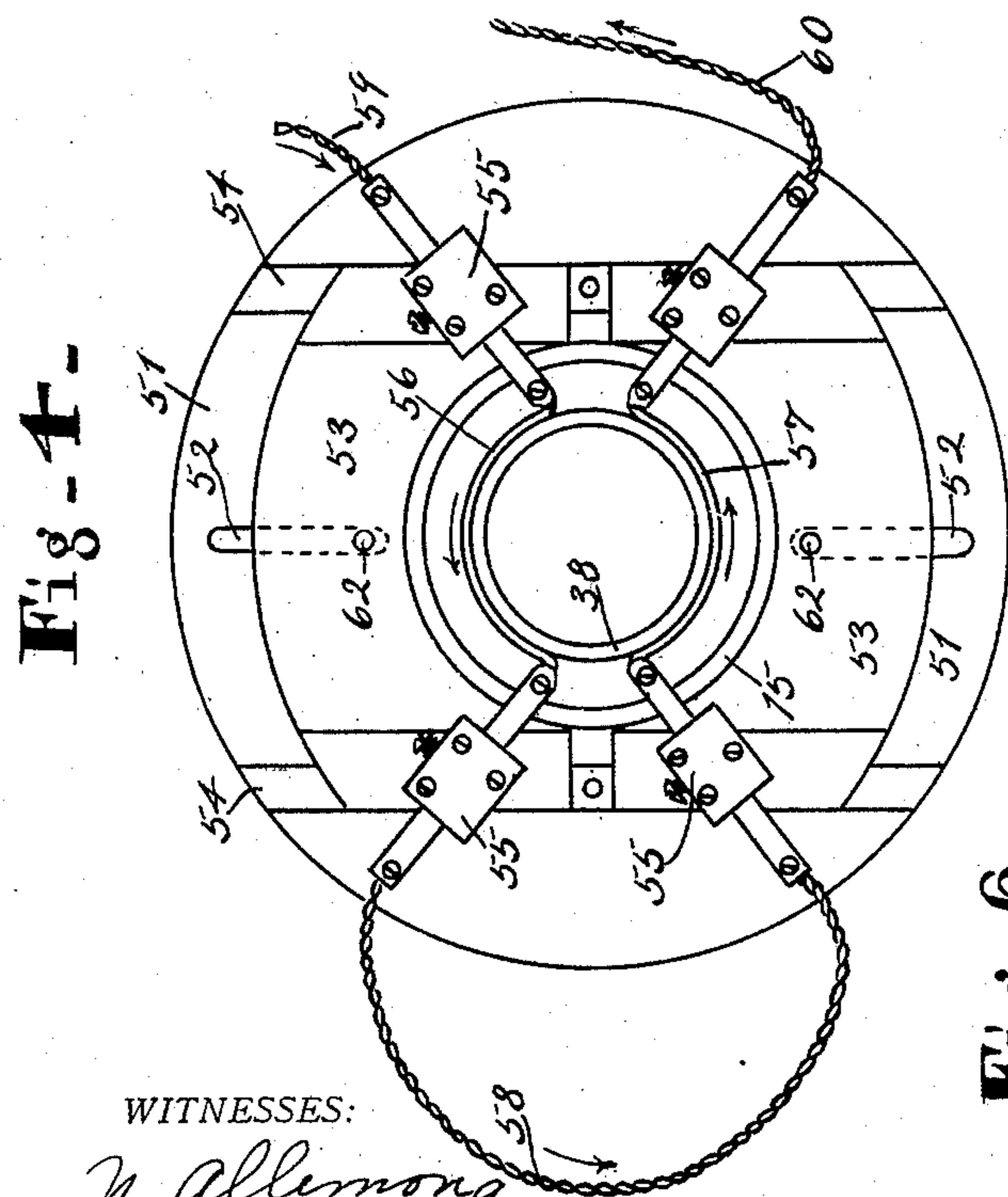
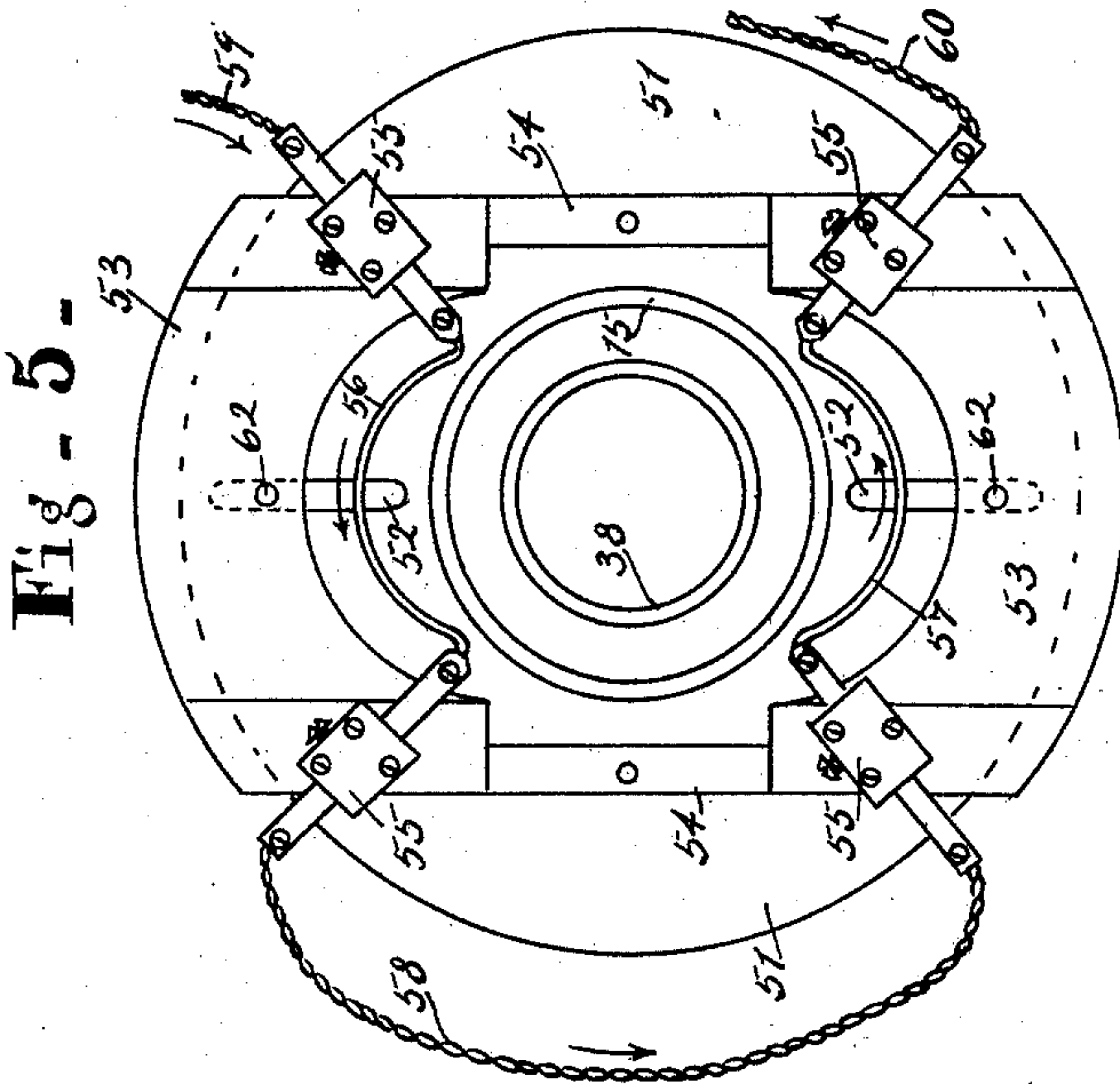
PATENTED JULY 9, 1907.

C. ARDUSER.

MACHINE FOR CRACKING OFF GLASS ARTICLES.

APPLICATION FILED FEB. 8, 1907.

3 SHEETS—SHEET 3.



WITNESSES:

N. Allmoning
W. M. Gentile

INVENTOR.

Christian Arduser

BY

V. H. Woodward
ATTORNEY.

UNITED STATES PATENT OFFICE.

CHRISTIAN ARDUSER, OF CICERO, INDIANA.

MACHINE FOR CRACKING OFF GLASS ARTICLES.

No. 859,721.

Specification of Letters Patent.

Patented July 9, 1907.

Application filed February 8, 1907, Serial No. 356,372.

To all whom it may concern:

Be it known that I, CHRISTIAN ARDUSER, of Cicero, county of Hamilton, and State of Indiana, have invented a certain new and useful Machine for Cracking Off Glass Articles; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which like letters refer to like parts.

The object of this invention is to mechanically sever or crack off tubular and like glass articles, especially by electricity.

The machine was invented and is designed for cutting very long glass tubes into sections, and it is so constructed and operates in such manner that this object is quickly and easily accomplished without loss from breaking or injury to the glass.

The features of invention consist in the means for holding the glass article and in means for applying electricity thereto for severing the same, and in the combination of the said two kinds of means.

The nature of the invention will be understood from the accompanying drawings and the following description and claims.

In the drawings Figure 1 is an elevation of the right-hand side of the entire machine. Fig. 2 is a plan view of the machine. Fig. 3 is a vertical transverse section on the line 3—3 of Fig. 2 looking rearward, but the dynamo being broken away. Fig. 4 is an elevation of the left-hand end of the glass holder and cutter, showing the electric heating wires in contact with the glass. Fig. 5 is the same with the electric heating wires removed from the glass. Fig. 6 is a horizontal section on the line 6—6 of Fig. 3. Fig. 7 is a section on the line 7—7 of Fig. 2.

A suitable base 10 is provided on which two wide posts 11 and 12 are secured having annular bearings 13 and 14 on their upper ends and integral therewith in which a glass-holding cylinder 15 is revolvably mounted. Said cylinder has on it a large gear 16 for revolving it, and that gear is driven by a pinion 17 on the shaft 18 mounted behind the posts 11 and 12, as seen in Figs. 1 and 2, and upon posts 19 and 20. The shaft 18 carries a large gear 21 that is driven by a pinion 22 on a shaft 23 of a motor 24. It is observed that this train of gearing is arranged so that the speed of the glass-holding cylinder 15 will be relatively much slower than that of the motor shaft.

The cylinder 15 is held from longitudinal movement by washers 25, 26, 27, and 28 that are placed beside the bearings 13 and 14 on the posts 11 and 12, and the gear 16 is secured to said cylinder by a set screw 29. On the right-hand end of the cylinder 15 a sleeve 30 fits loosely and is held from rotation by a screw 31 on a bracket 32 which is fastened to the post 12. This sleeve 30 extends beyond the end of the cylinder 15 and has on it a radial outwardly extending flange 33

that has at equidistant points radial slots 34 through which pins 35 extend that carry arms 36 having beveled heads 37 which engage and hold the tube of glass 38. The pins 35 project through eccentric or cam-like slots 40 in an annular disk 41 mounted on the cylinder 15 immediately to the left of the flange 33 so that when said disk 41 is oscillated somewhat, the glass holders 37 will be moved into or out of engagement with the glass tube. There are three of these glass holders, and the disk 41 is oscillated by a hand lever 42 fulcrumed at 43 on the lower end of the bracket 32 and rigidly mounted on a crank-shaft 142 that has a pin 143 extending through the slot 144 in the bell-crank lever 44 which is fulcrumed at 145. The upper portion of said bell-crank lever 44 has at its upper end a slot 45 through which a screw passes and is secured to said disk.

The means for cracking-off or severing the glass tube is located at the left-hand, as appears in Fig. 3. As there shown, a sleeve 50 is rigidly mounted on the cylinder 15, and at its outer end said sleeve has a radially extending flange-like head 51 in which radial slots 52 are found on opposite sides of the cylinder 15. On the outer face of the disk 51 there are mounted two plates 53 on opposite sides of the tube of glass when in place, and both are vertically slidable towards or away from each other in two radial guide-ways 54 and carry four binding posts 55, two on each side of the center, and the inner ends of the binding posts project towards the glass article when in place. An electric wire 56 connects the inner ends of the two binding posts, and the wire 57 the inner ends of the other two binding posts. A conductor 58 connects the two pairs of binding posts, while a conductor 59 leads to, and a wire 60 leads from the binding posts, as appears in Fig. 4. These wires 56 and 57 are moved towards and away from the glass article by two levers 62, shown in Fig. 3, that are fulcrumed by the pins 63 to outwardly extending ears 64 on the cylinder 15. The actuating ends of these levers 62 extend through slots 52 in the disk 51 and through holes at 65 in the sliding plates 53. The actuated ends of said lever are curved outwardly from the cylinder 15 and have in each a curved slot 66 in which a pin 67 extends from the ears 68 on a sliding sleeve 69 that surrounds the cylinder 15 and is slidable longitudinally thereof by a hand-lever 70 that is fulcrumed at its lower end to a post 71. A ring 169 formed of two semi-circular parts connected by the bolts 170 fit loosely in an annular groove in the sleeve 69. The lever 70 just below the cylinder 15 is divided into two semi-circular arms that unite again above said cylinder so that said two arms loosely surround the ring 169 and at each side are pivoted to the ring 169 by pins 72. The motor 24 is mounted on a post 73, and from it conductors 74 and 75 extend to the posts mounted on the base 10 upon suitable insulation 78, and carry

the two brushes 79 and 80 that contact with the two rings 81 and 82 that surround the sleeve 83 on the cylinder 15 and are insulated therefrom by insulation 84, which is held in place by an annular nut 85. The current from the ring 82 is transmitted through a wire 86 embedded in insulation 87 at one side of the cylinder 15 to the conductor 59. The current passes from the other conductor 60 to a wire 87 in an insulation strip 88 at the opposite side of the cylinder 15 and to the ring 81.

In operation, the tube of glass is inserted into the machine longitudinally, and before such insulation the holders 37 are moved radially outward to their limit, and likewise the blocks 53 and wires 56 at the other end of the machine. After the glass is inserted, the hand lever 42 is operated to hold it in place, so the glass tube is held stationary. Then the lever 70 is thrown to the left, as appears in Fig. 3, which forcibly moves the cracking off wires 56 and 57 into engagement with the glass, and since the means for holding the cracking-off wires are revoluble with the cylinder 15, said wires are rapidly carried around the glass tube, so that their heat will sever the glass. When this is done, the lever 70 is thrown to the right, which moves said cracking-off wires 56 and 57 away from each other, and the lever 42 is pulled outward for separating the clamps 37, and then the glass tube is moved slidably through the cylinder 15 for severing another section. During the operation of the device, the cylinder 15 continues to rotate.

What I claim as my invention and desire to secure by Letters Patent is:

1. A machine for cracking-off glass articles and the like, including means for holding a glass article stationary, and revoluble electrically heated means that contacts with the glass article at the cracking-off point.

2. A machine for cracking-off glass articles and the like including means for holding the glass article stationary, an electrical conductor, and means revoluble about the glass article for moving said electrical conductor into and out of engagement with the glass article.

3. A machine for cracking-off glass articles and the like including means for holding the glass article stationary, two electrical conductors on opposite sides of the glass article, and means revoluble about the glass article for moving said conductors simultaneously into and out of engagement with said glass article.

4. A machine for cracking-off glass articles and the like including a revolving cylinder through which the glass article extends, means mounted on said cylinder for holding the glass article, and an electrical conductor mounted on said cylinder that is movable into and out of contact with the glass article.

5. A machine for cracking-off glass articles and the like including a cylinder through which the glass article extends, means mounted on one end of said cylinder for hold-

ing the glass article, and means mounted on the other end of said cylinder for cracking off said glass article.

6. A machine for cracking-off glass articles and the like including a revoluble cylinder through which the glass article extends, stationary means mounted on said cylinder for holding the glass article stationary, and means mounted on said cylinder that is movable into and out of contact with said glass article for cracking it off.

7. A machine for cracking-off glass articles and the like including a revoluble cylinder through which the glass article extends, an electrical conductor adapted to be moved into contact with said glass article, and clamping means for holding said glass article in the cylinder.

8. A machine for cracking off glass articles and the like including a revoluble cylinder through which a glass article extends, a stationary sleeve mounted loosely thereon at one end with a radially extending flange provided with radial slots, a ring disk mounted on said sleeve with eccentric slots, glass-holding arms for engaging the glass article, and pins on which said arms are mounted that extend through the slots in said flange and disk, and means for oscillating said disk, substantially as set forth.

9. A machine for cracking-off glass articles and the like including a revoluble cylinder through which the glass article extends, radially slidable plates mounted at one end of said cylinder, and electrical conductors mounted on said plates so that when said plates are moved towards each other the conductors will be brought into contact with the glass article.

10. A machine for cracking-off glass articles and the like including a revoluble cylinder through which a glass article extends, radially slidable plates mounted at one end of said cylinder, electrical conductors mounted on said plates so that when said plates are moved towards each other the conductors will be brought into contact with the glass article, and a single means for moving said plates towards and from each other.

11. A machine for cracking-off glass articles and the like including a cylinder through which a glass article extends, a sleeve secured thereto with a flange having radial slots in it, a pair of oppositely located sliding plates at the end of the cylinder with holes that register with said slots, electrical conductors carried by said plates, a lever extending through each of said slots and the corresponding hole, said levers having outwardly curved actuating ends, and means slidable longitudinally of the cylinder for engaging said actuating ends for actuating said levers and moving said conductors into and out of contact with the glass article.

12. A machine for cracking off glass articles and the like including a revoluble cylinder through which a glass article extends, conducting bands secured on said cylinder, binding posts mounted beside said cylinder which are connected with a source of electricity, brushes extending from said binding posts to said conducting rings, electrical conductors movable into and out of contact with the glass article for cracking off the glass article, and conductors extending from said rings to said cracking off conductors.

In witness whereof, I have hereunto affixed my signature in the presence of the witnesses herein named.

CHRISTIAN ARDUSER.

Two witnesses:

W. Z. CALLINGS,
FRANK SCHERER.