

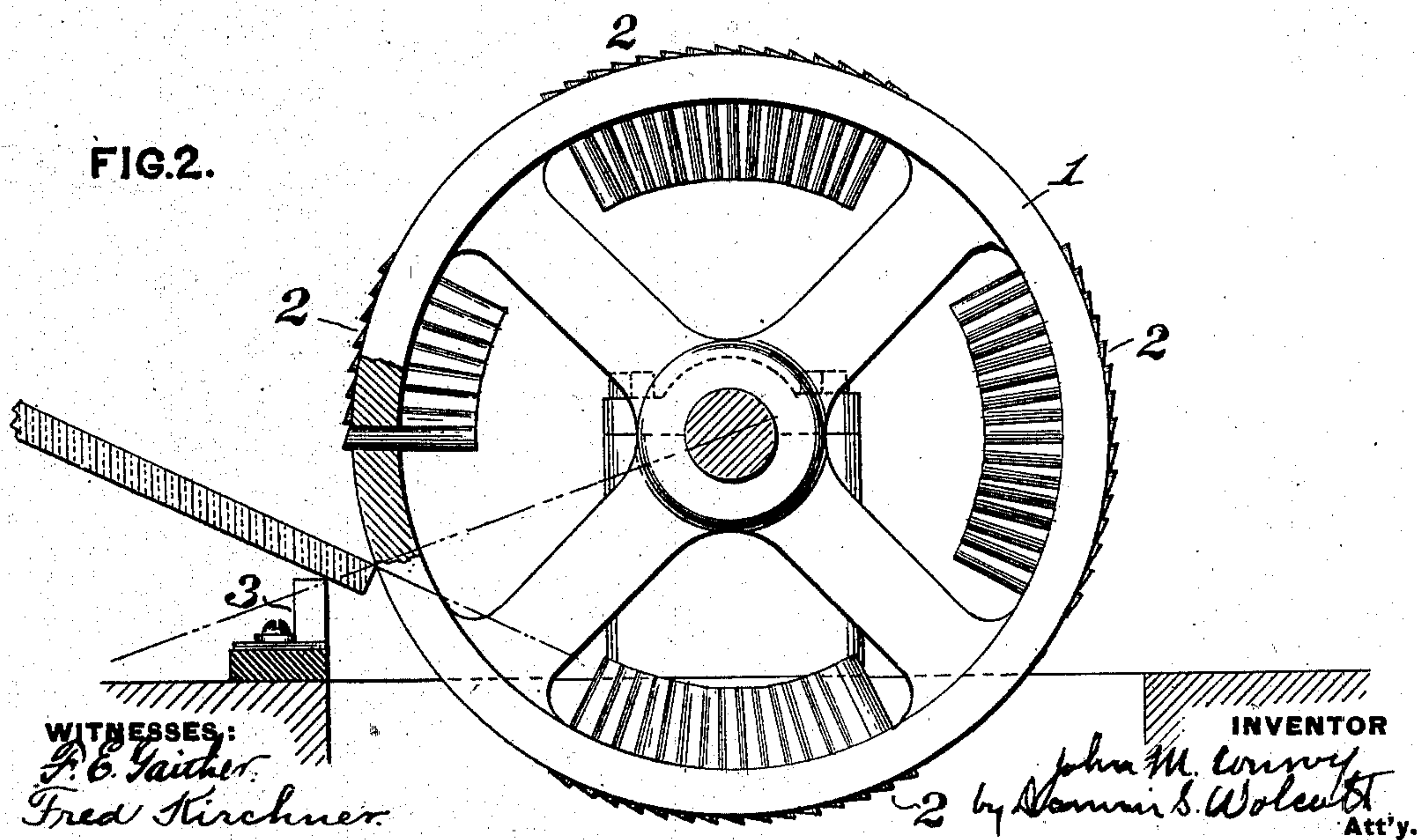
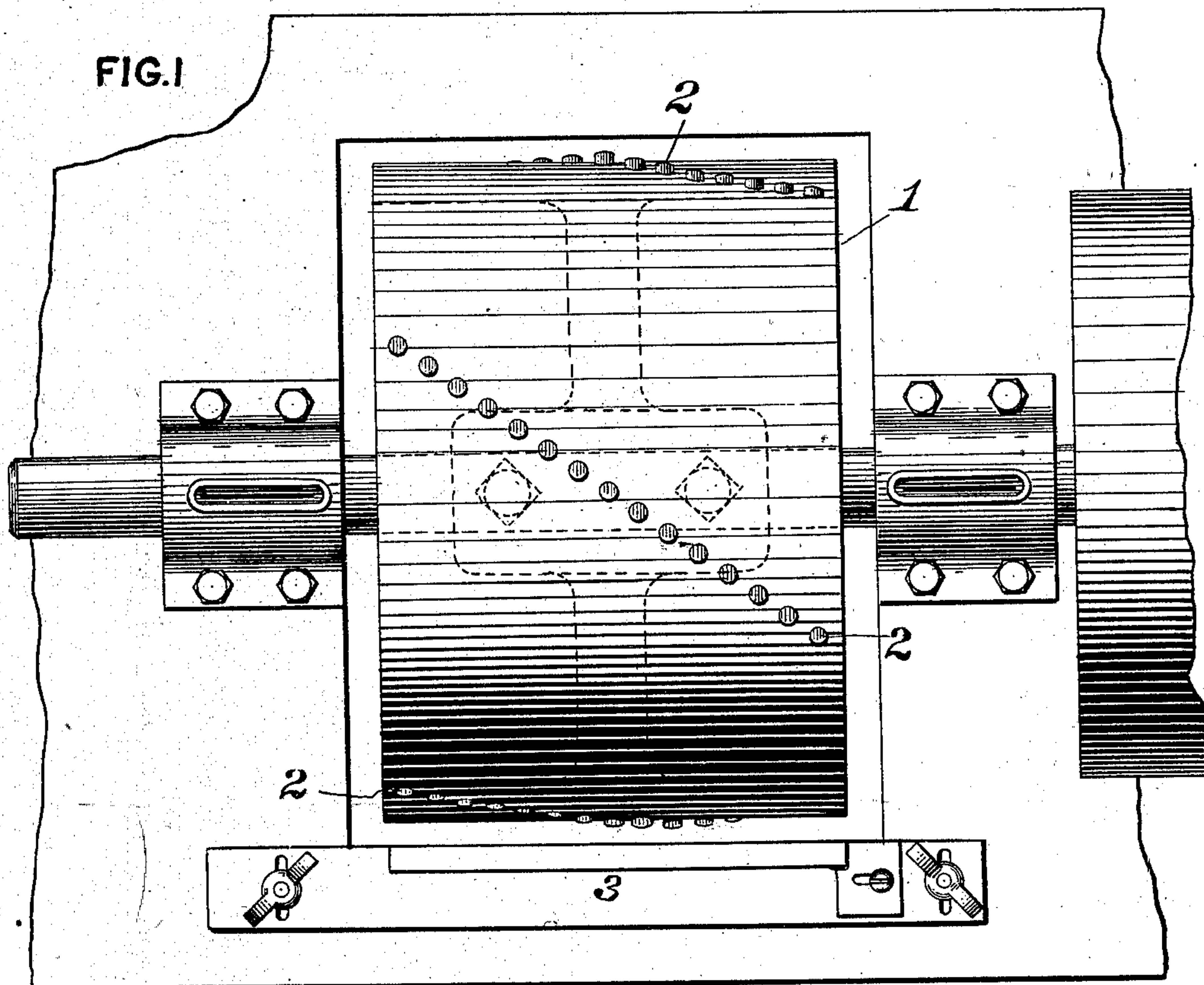
No. 723,139.

PATENTED MAR. 17, 1903.

J. M. CONROY.  
ORNAMENTING GLASS.  
APPLICATION FILED OCT. 22, 1902.

NO MODEL.

4 SHEETS—SHEET 1.



WITNESSES:

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*Fred Kirchner.*

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*by Norman S. Wolcott*  
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4 SHEETS—SHEET 2.

FIG. 3.

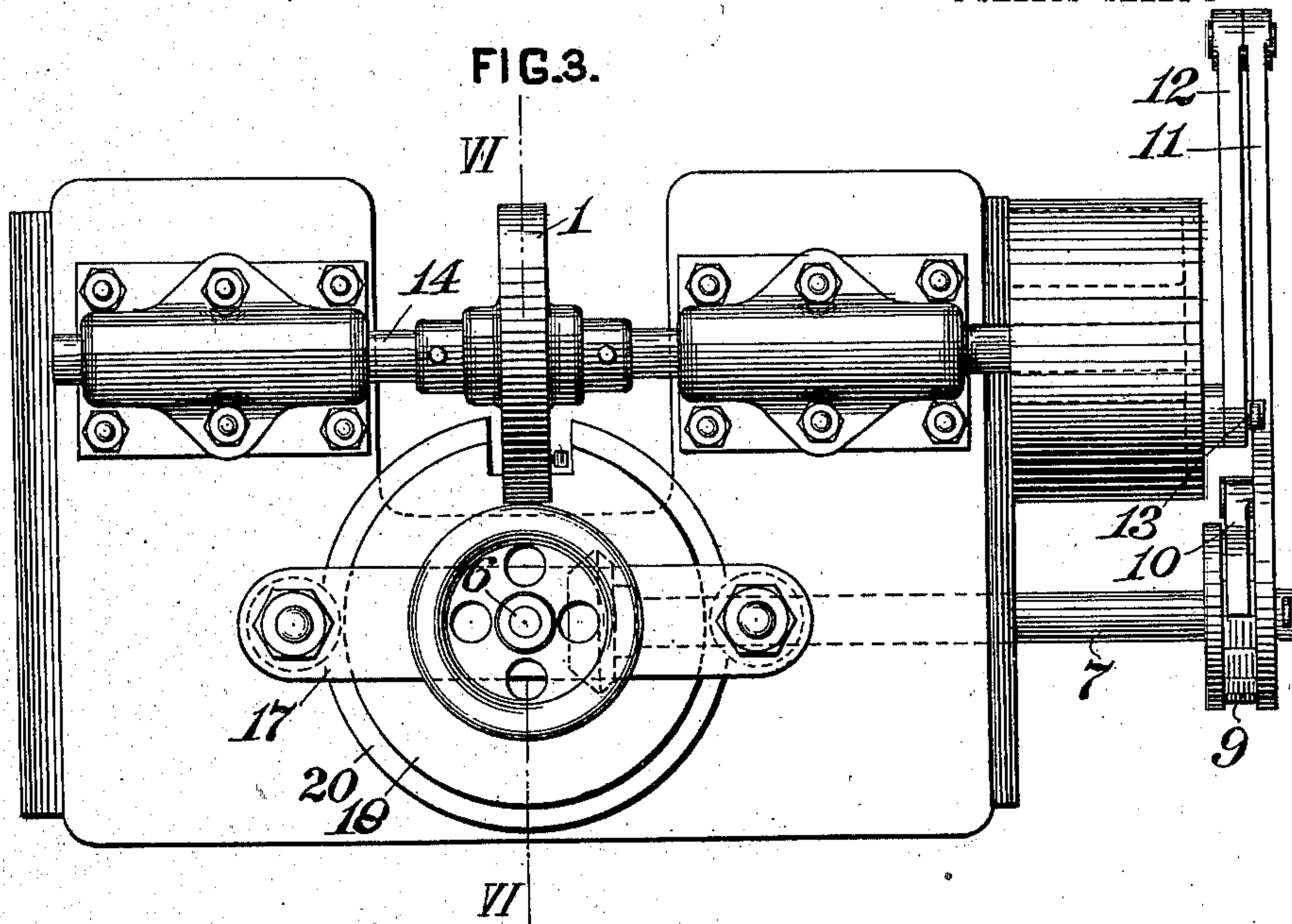
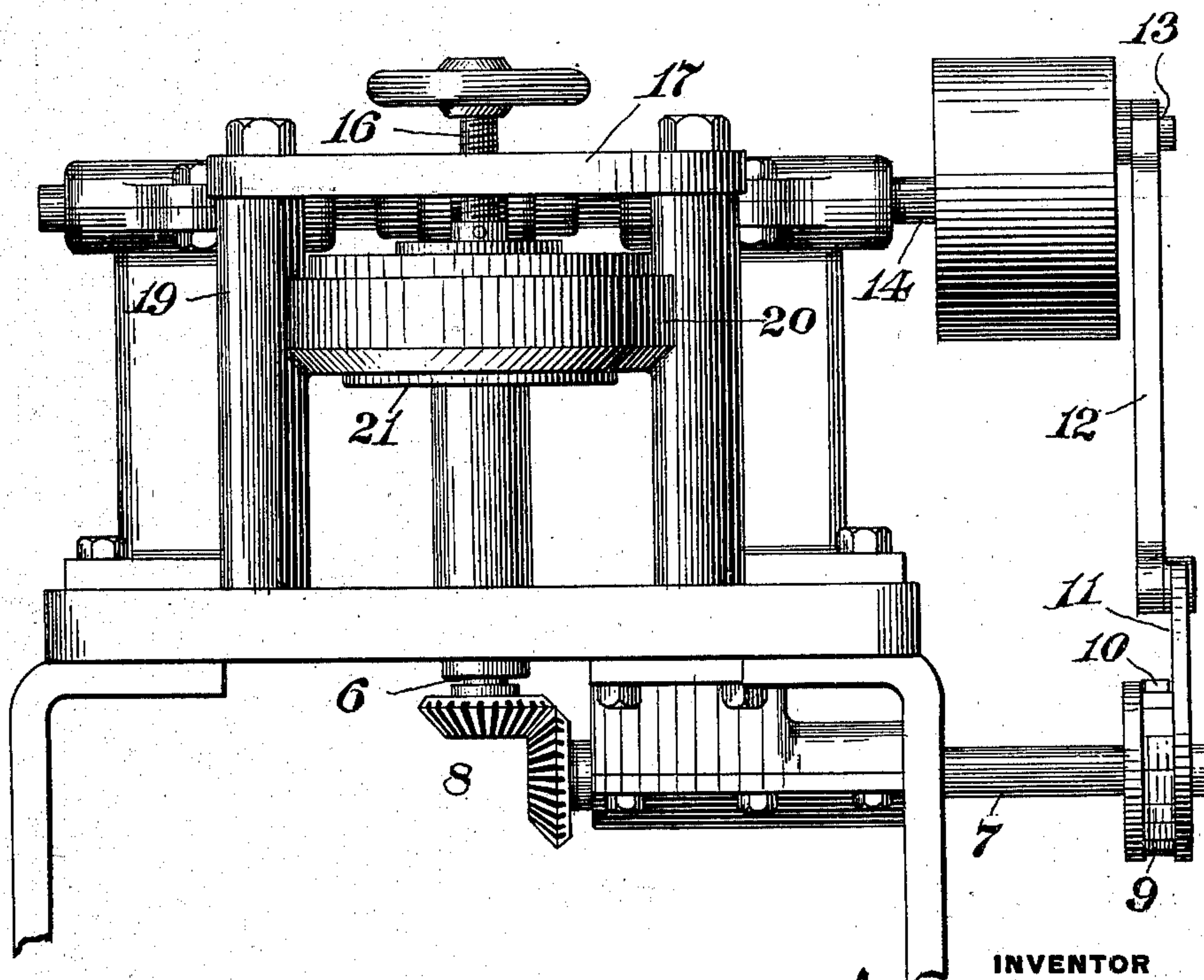


FIG. 4.



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4 SHEETS—SHEET 3.

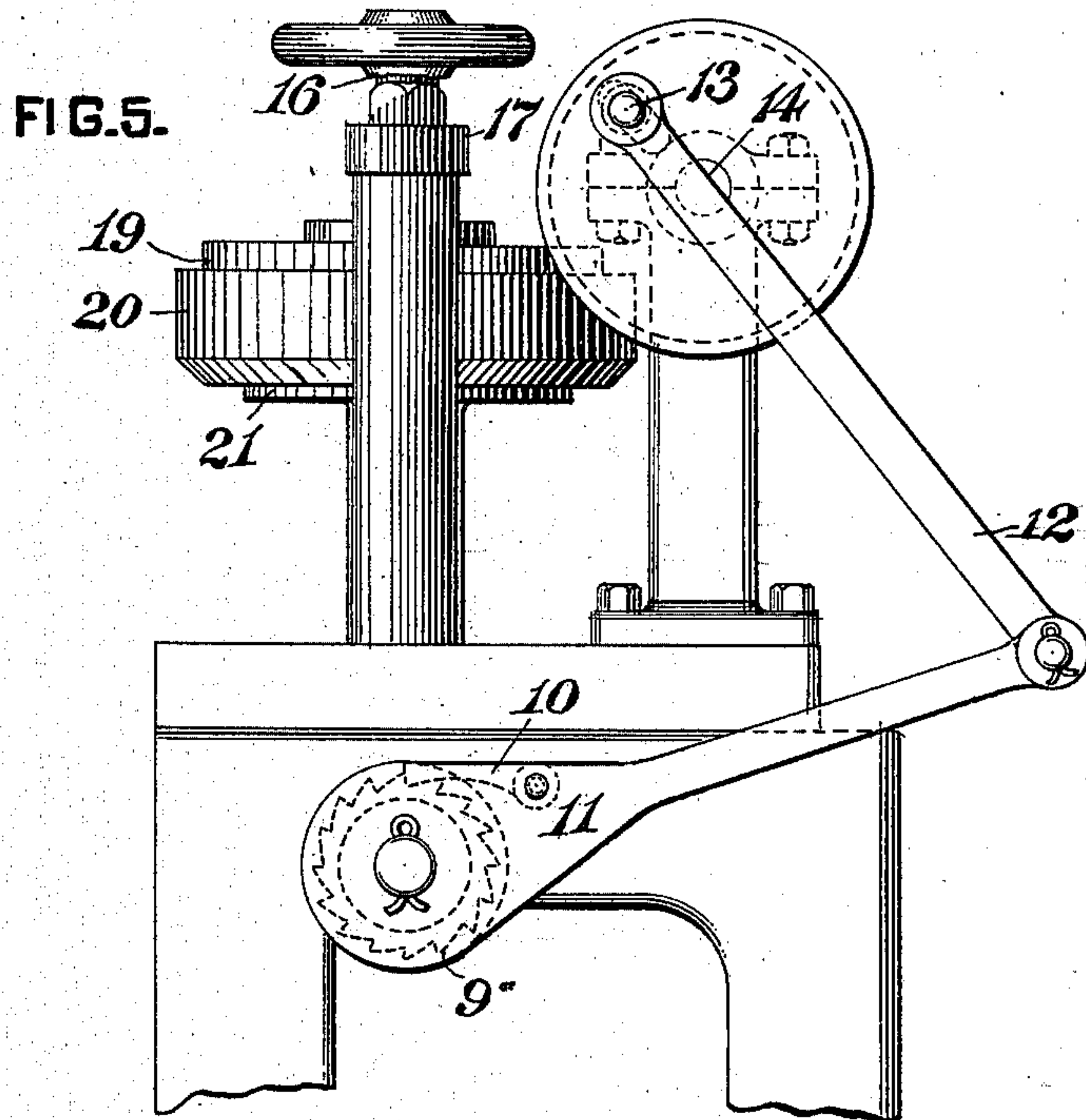
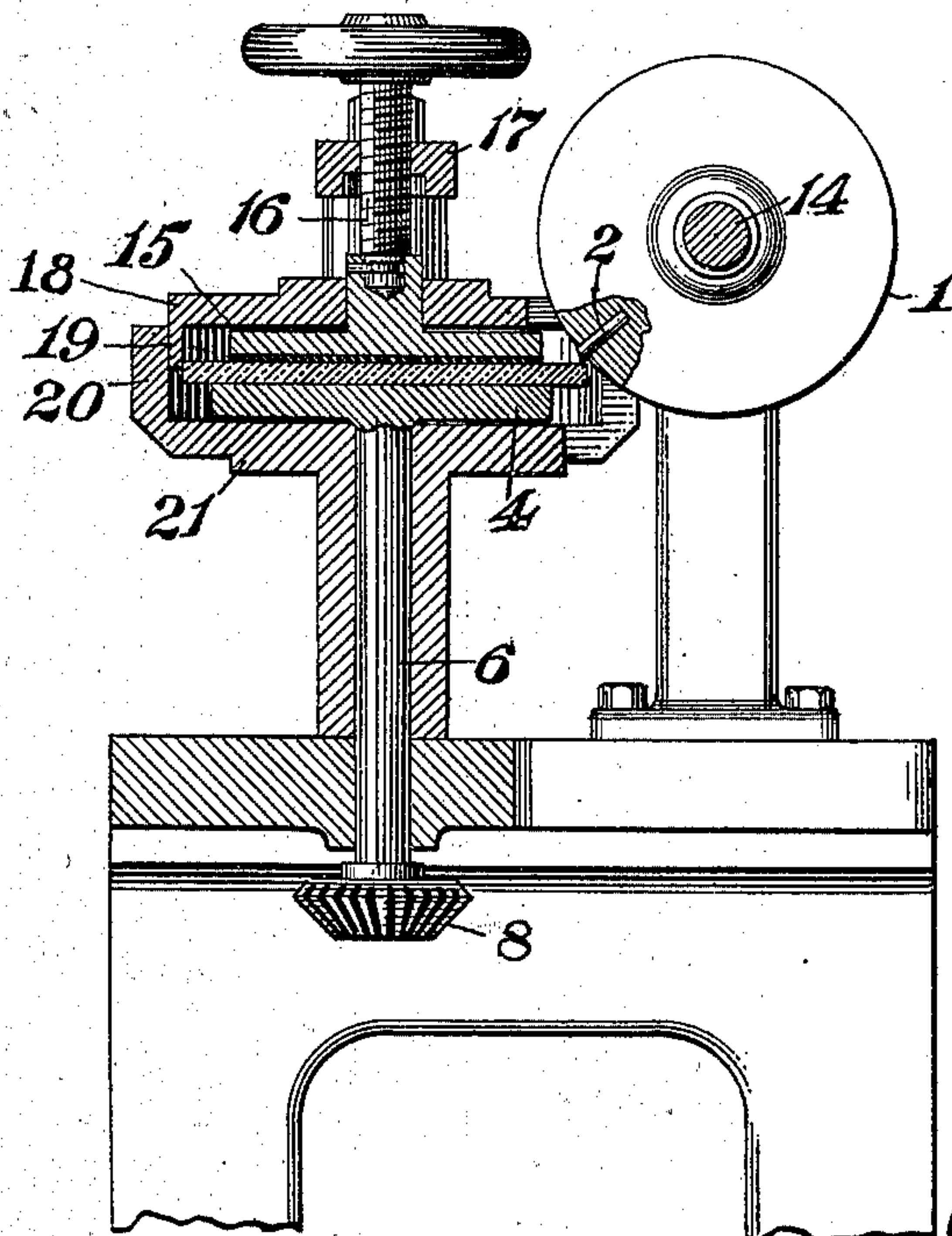


FIG. 6.



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4 SHEETS—SHEET 4.

FIG. 7.

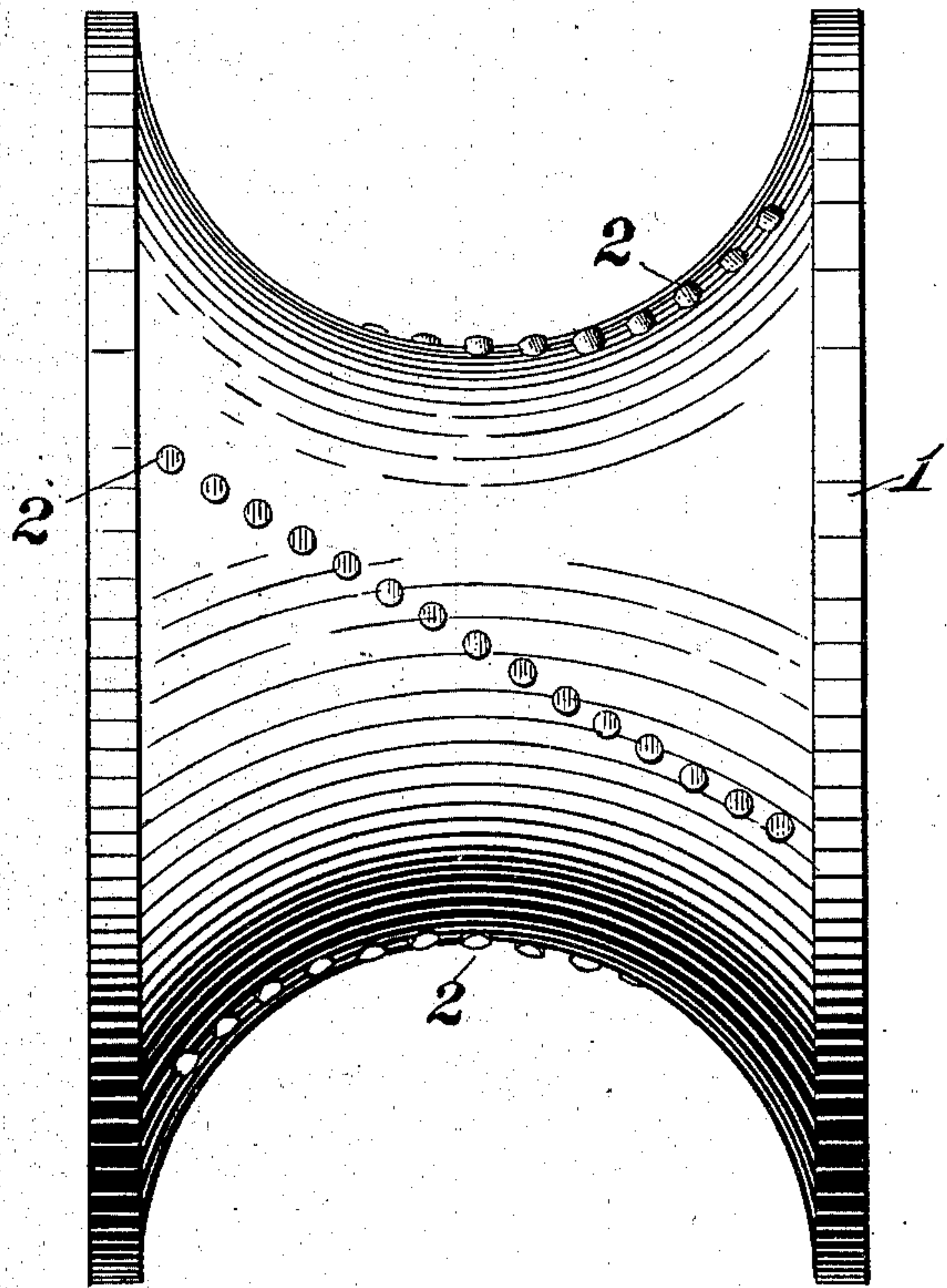
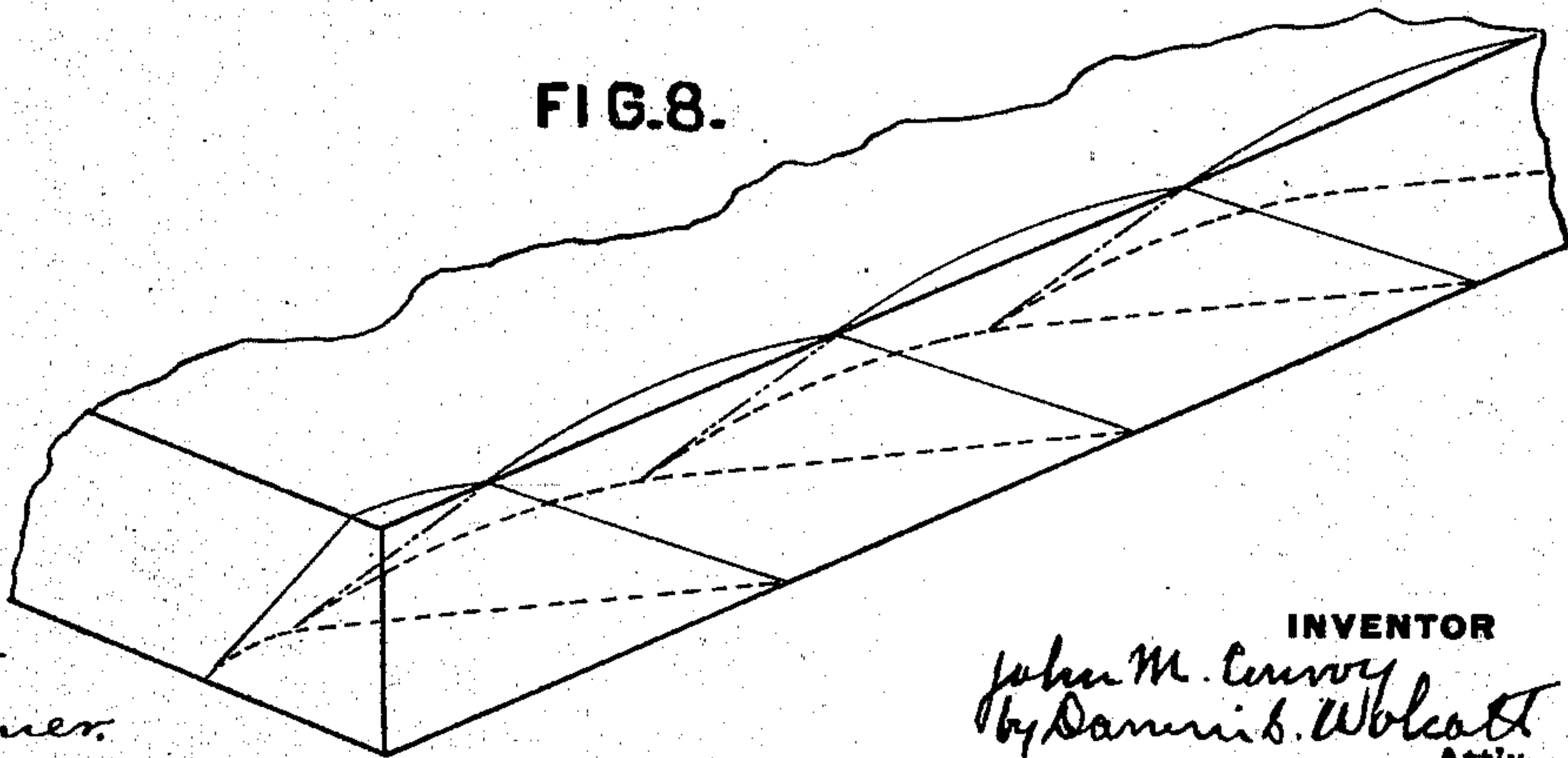


FIG. 8.



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# UNITED STATES PATENT OFFICE.

JOHN M. CONROY, OF ALLEGHENY, PENNSYLVANIA.

## ORNAMENTING GLASS.

SPECIFICATION forming part of Letters Patent No. 723,139, dated March 17, 1903.

Application filed October 22, 1902. Serial No. 128,222. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN M. CONROY, a citizen of the United States, residing at Allegheny, in the county of Allegheny and State of Pennsylvania, have invented or discovered certain new and useful Improvements in Ornamenting Glass, of which improvements the following is a specification.

The invention described herein relates to certain improvements in the art of shaping or producing an ornamental effect on the edges of glass articles, such as mirrors, &c., and has for its object the breaking away or removal of portions of the edges, more especially with reference to the production of inclined scallops or indentations along the edge of the article, said scallops being at an angle less than a right angle with the surfaces of the article.

The invention is hereinafter more fully described and claimed.

In the accompanying drawings, forming a part of this specification, Figure 1 is a plan view of a form of apparatus for the practice of my invention. Fig. 2 is a sectional elevation of the same. Fig. 3 is a plan view of another form of apparatus. Figs. 4 and 5 are front and side elevations of the same. Fig. 6 is a sectional elevation. Fig. 7 is an elevation illustrating a modification in the shape of the drum, and Fig. 8 is a diagrammatic view illustrative of the fracture of the glass.

In the practice of my invention the glass is struck a sharp blow with a suitable tool at a point closely adjacent to its edge, the direction of impact being at an angle to the surface of the article. As the result of such a blow a piece of glass is so broken out from the edge and opposite side of the article as to leave a scallop extending at an angle from the edge on which the blow was struck inwardly to a point some distance from the opposite edge. A series of scallops can be formed in like manner adjacent to each other, the width of the scallops being dependent upon the distance between the points at which the blows are struck and the regularity of the spacing of the blows. I have found that by evenly spacing the points of impact with the tool and making the blows uniform, or practically so, as to force, the pieces of glass

removed are quite uniform in size and shape and that there is very little splintering of the glass. Except at and adjacent to the point of impact of the tool no sharp points or cutting edges are formed on the article, although such sharp points or edges are found in the pieces of glass removed.

A convenient form of apparatus for ornamenting straight edges is shown in Figs. 1 and 2 and consists of a power-driven drum 1, having a series of pins 2 projecting from its periphery, and a rest or support 3 for the glass. As shown, the pins are so arranged as to strike successively on the glass, as I have found that the best results are attained when an appreciable time elapses between successive blows. Such improved results incident to the time-spacing of the blows are due, as I now believe, to the opportunity afforded for the recovery of the glass from the strains produced by one blow before being subjected to the next. As will be readily understood, the time interval can be had by spacing the pins farther apart and increasing the speed of the drum or by placing the pins nearer together and decreasing the speed of the drum.

In Figs. 1 and 2 I have shown my preferred form or construction of mechanism for ornamenting—e. g., scalloping articles having straight edges. The drum 1 is made with a width of face at least equal to the length of the edge to be operated on, and one or more rows of pins 2 are secured in the periphery of the drum in such manner that the pins will strike successively on the article. The spacing of the pins around the periphery will be dependent upon the peripheral speed of the drum, or the speed of the drum is regulated in accordance with the spacing of the pins, so that an opportunity may be afforded for the recovery of the glass from the strains produced by one pin before being subjected to the action of another pin. The diameter or width of the pins and their spacing across the face of the drum is regulated by the width of the scallop to be formed. One or more rows or series of pins may be used if the drum is rotated slowly, so that a number of edges may be operated on during each revolution of the drum. The rest-bar 3 is adjustably mounted on the frame of the machine and arranged, preferably, in such relation to the axis of the



drums that the pins will be moving away from the bar or article resting thereon at the time of impingement on the article. I have found that it is desirable that the rest-bar should  
 5 present a firm and uniform support for the glass to prevent breakage of the articles. The article is held by the operator in such position that the pins will strike on the article closely adjacent to the edge at an angle of  
 10 about forty-five degrees to the upper surface of the article, as clearly shown in Fig. 2, and will move down and away from the article. In this movement the pin, which by preference should not strike much more than one  
 15 thirty-second of an inch from the edge of the article, does not merely nick the glass, but forces out a chip, the conoidal plane of fracture extending inwardly from the edge struck at an angle of about forty-five degrees to the  
 20 opposite face of the article, as shown in Figs. 2 and 8. As before stated, the successive chips removed are substantially uniform in shape and size. In practice the operator presses the edge of the article against the periphery of the drum at the desired angle, the  
 25 pins being set to project about a thirty-second of an inch from the periphery. It is preferred that the ends of the pins be beveled, as shown, to form a comparatively sharp striking edge and to permit the back edge of the  
 30 pin to clear the edge of the article. The position of the bar or support 3 depends upon the thickness of the glass and should for best results be so adjusted that the line of support of the glass should coincide or be closely  
 35 adjacent to the line where the plane of fracture intersects the under surface of the glass. As shown in Fig. 7, the periphery of the drum can be made to conform to the edge  
 40 contour of the article; but it is preferred when operating on articles having curved edges to employ a construction similar to that shown in Figs. 3 to 6. As shown therein, the drum is provided with a single pin and  
 45 the article is secured on a table or bearing portion 4, which is shifted step by step to bring successive portions into the plane of movement of the pin 2. The table 4 is carried by a shaft 6, driven by the shaft 7 through  
 50 the bevel-gears 8. A ratchet-wheel 9 is secured on the shaft 7, and the pawl 10 is mounted on an arm 11, pivotally mounted on the shaft 7. The back-and-forth movement of the arm is effected through the link 12 by  
 55 an eccentric-pin 13, carried by the shaft 14, on which the drum 1 is mounted. By this construction the table carrying the article will be moved forward a predetermined distance on each revolution of the drum and  
 60 pin, such distance being proportional to the desired width of scallops. In order to per-

mit of varying the feed of the table, the pin 13 is adjustably mounted, as shown in Fig. 5. The article is clamped on the table by a plate 15, loosely mounted on a screw 16, passing  
 65 through the cross-bar 17, secured to the frame of the machine. In order to insure that the axis of the plate 15 shall coincide with the axis of the table 4, a disk 18 is loosely mounted on the hub of the clamping-plate 15 and is  
 70 provided with a downwardly-projecting flange 19, which when the plate is screwed down passes inside of the rim 20 on the bed 21, which supports the table 4, as shown in Fig. 6.

In lieu of the construction shown in Figs. 75 3 to 6 the periphery of the drum may be given a contour the reverse of that of the article, as shown in Fig. 7, and provided with pins spaced, as shown in Figs. 1 and 2, with reference to successive action and arranged to impinge on the article at an angle  
 80 of about forty-five degrees.

As the planes of fracture intersect the surface of the article at an approximately uniform distance from the edge of the article,  
 85 my improved method may be employed as a preliminary step in beveling the edges of glass plates, as the major portion of glass required to be removed to form the bevel can be chipped off very rapidly by my method,  
 90 so that the comparatively slow removal by grinding would be necessary only for straightening and smoothing the bevel.

While I have shown with some particularity preferred forms of apparatus for carrying  
 95 out my improved method, no claims are made herein to such apparatus, as the same forms the subject-matter of an application, Serial No. 137,256, filed December 31, 1902.

I claim herein as my invention—

1. As an improvement in the art of shaping the edges of glass articles, the method herein described which consists in removing  
 100 by blows at successive points closely adjacent to the edge, the edge and a portion of the opposite side of the article in pieces approximately uniform in quantity, substantially as set forth.

2. As an improvement in the art of shaping the edges of glass articles, the method  
 110 herein described, which consists in removing by blows at successive points closely adjacent to the edge pieces approximately uniform in shape from the edge and a portion of the opposite side, substantially as set forth.

In testimony whereof I have hereunto set my hand.

JOHN M. CONROY.

Witnesses:

DARWIN S. WOLCOTT,  
 F. E. GAITHER.