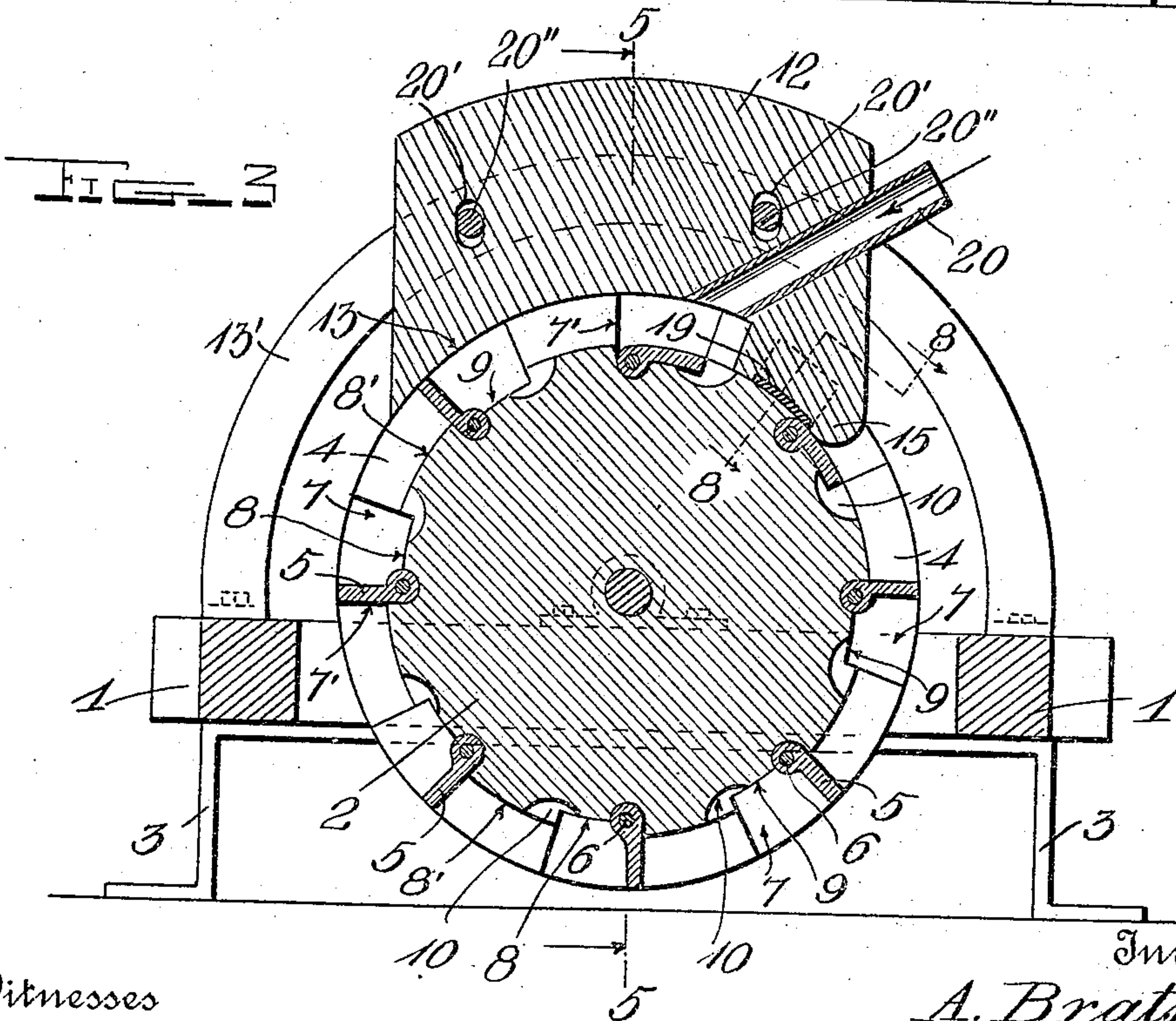
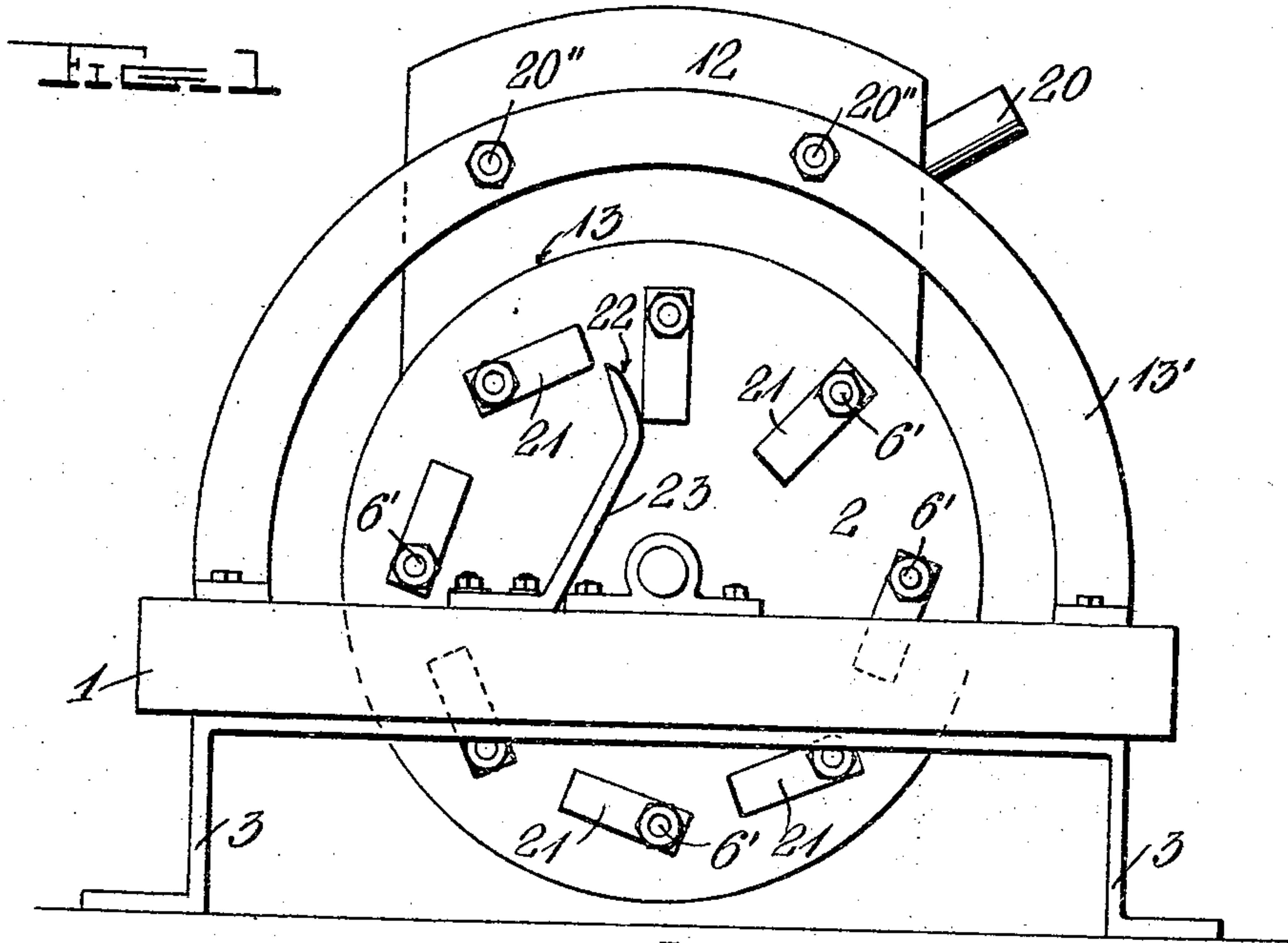


A. BRATSCHIE.
WATER MOTOR.
APPLICATION FILED FEB. 4, 1909.

945,746.

Patented Jan. 11, 1910.
2 SHEETS—SHEET 1.



Witnesses

C. H. Griesbauer

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by

A. Bratschie

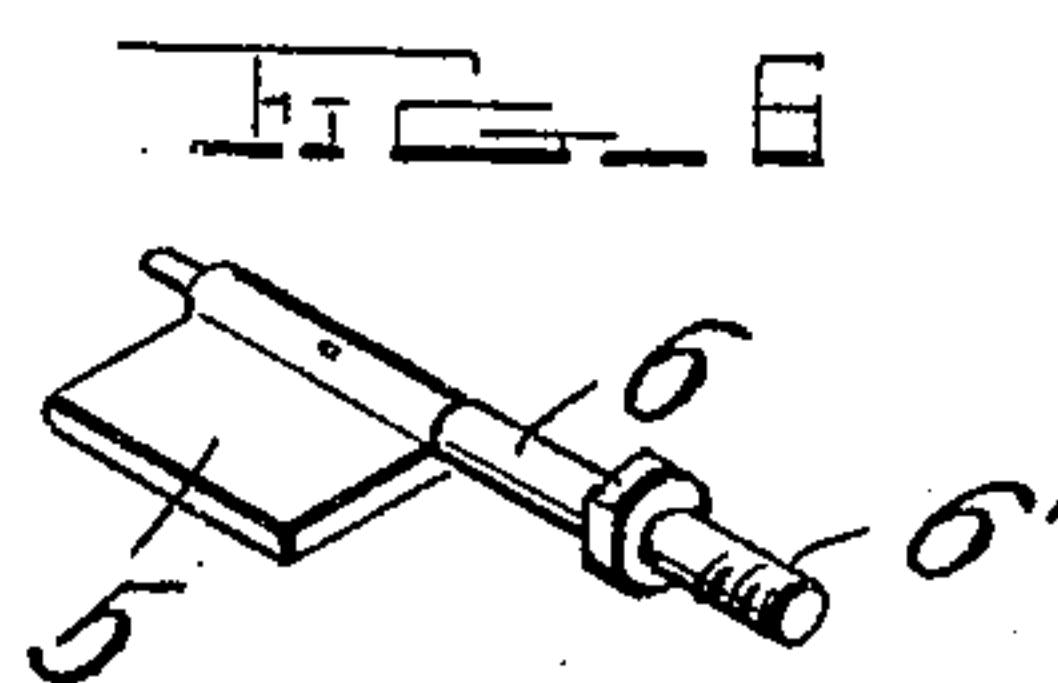
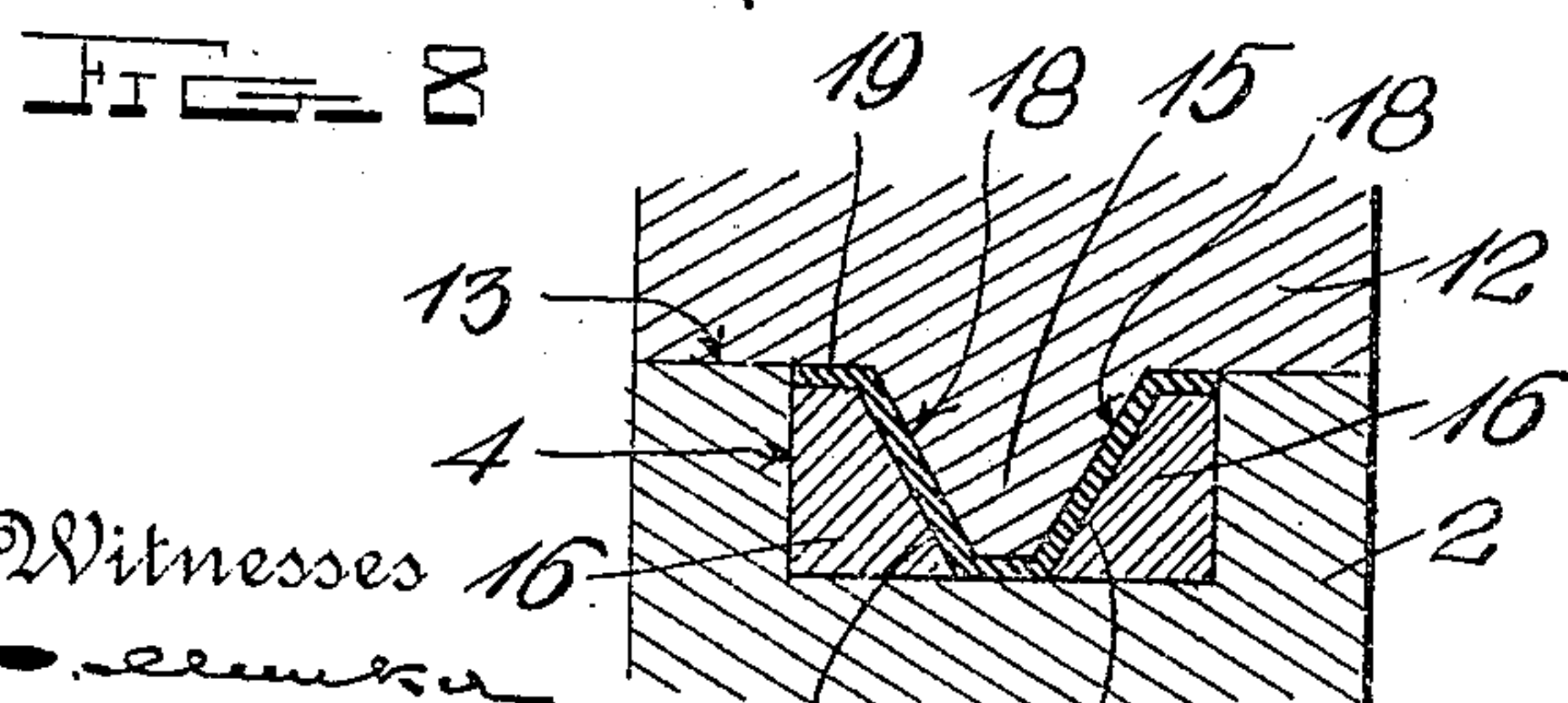
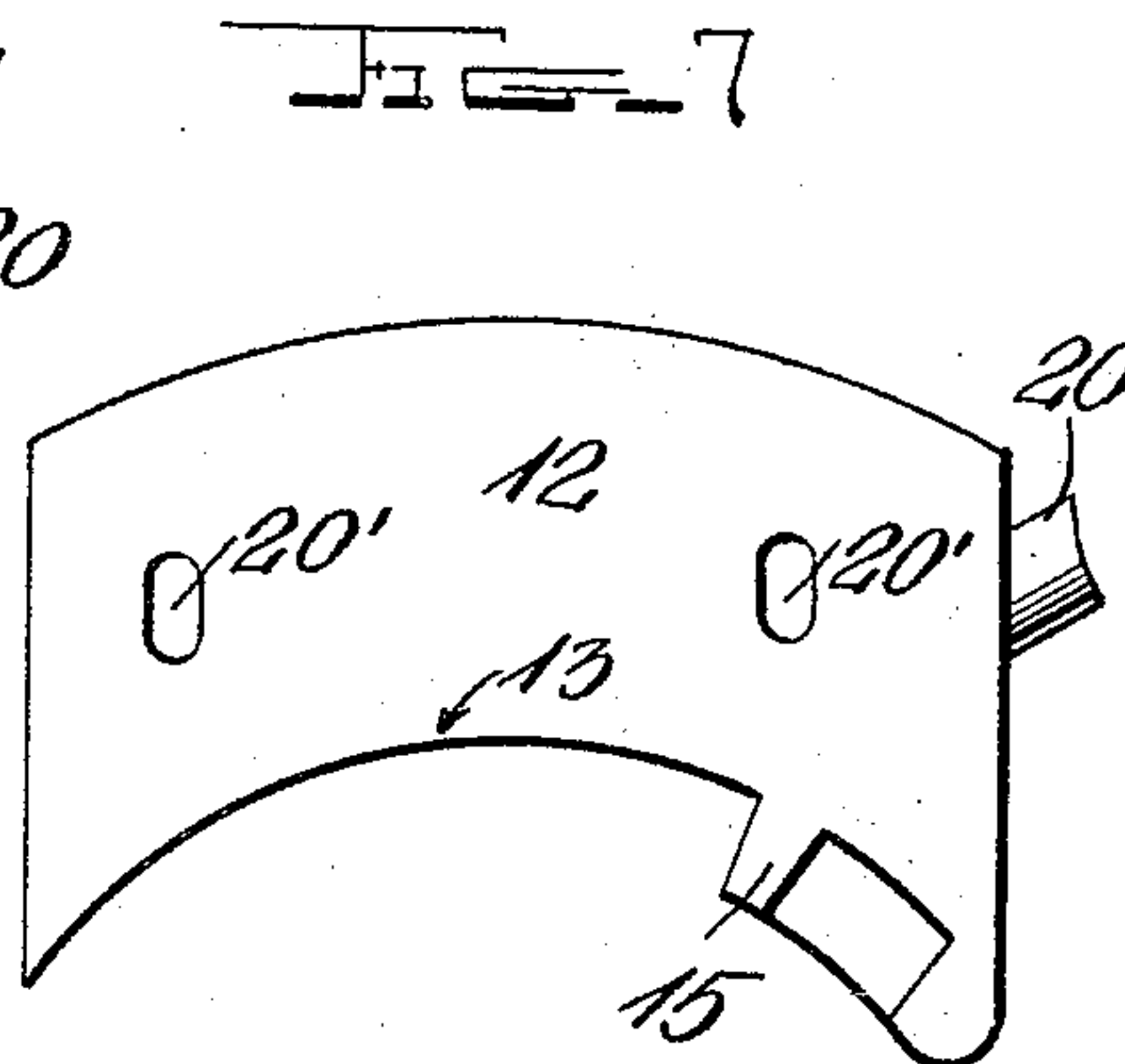
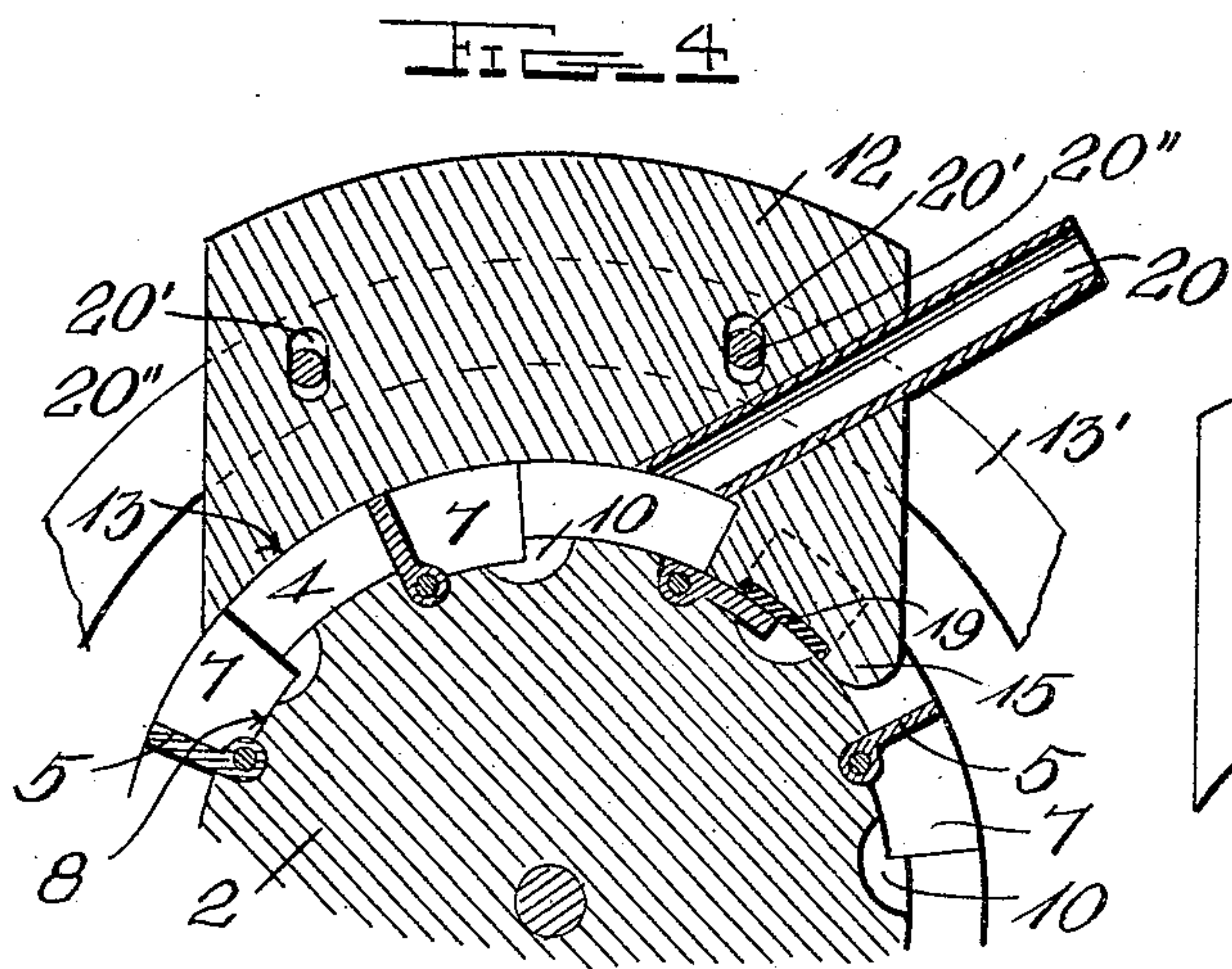
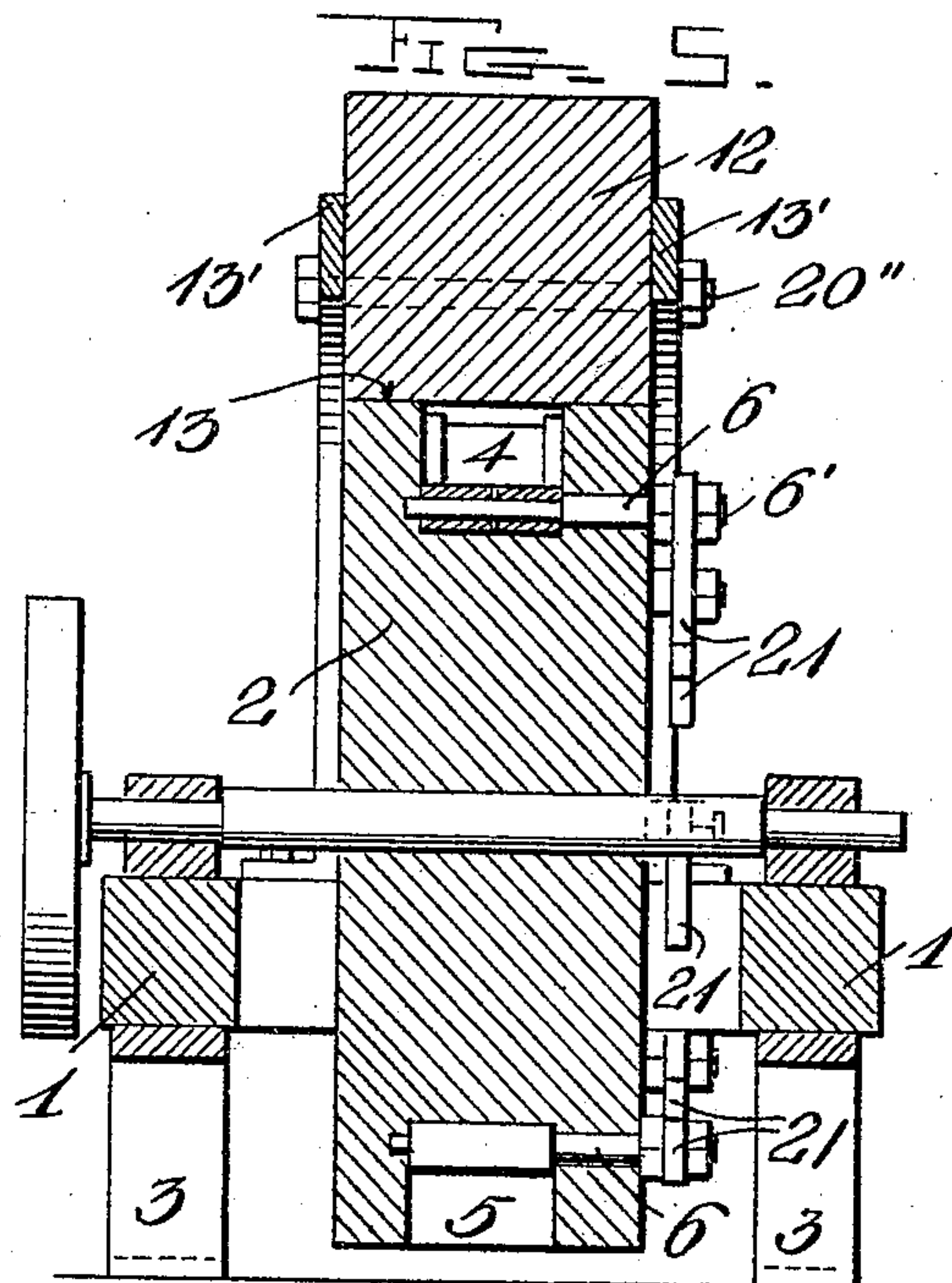
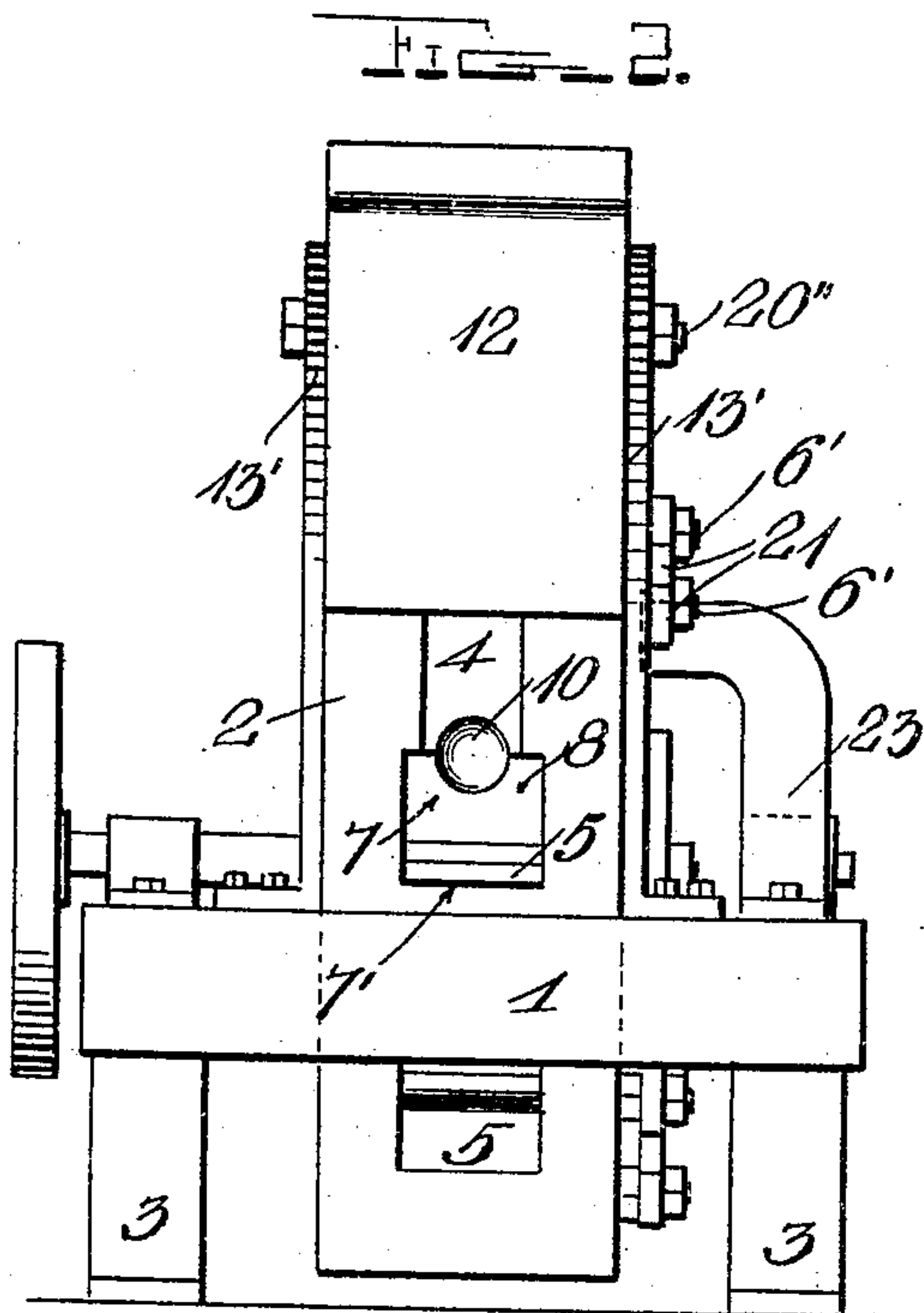
Attorneys

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2 SHEETS—SHEET 2.



Witnesses
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UNITED STATES PATENT OFFICE.

AMIEL BRATSCHIE, OF NEW CASTLE, PENNSYLVANIA.

WATER-MOTOR.

945,746.

Specification of Letters Patent.

Patented Jan. 11, 1910.

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To all whom it may concern:

Be it known that I, AMIEL BRATSCHIE, a citizen of the United States, residing at New Castle, in the county of Lawrence and State of Pennsylvania, have invented certain new and useful Improvements in Water-Motors; 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.

This invention relates to water motors of that class which are provided with peripheral blades or wings to receive the impact or force of the water or other motive fluid.

The principal object of this invention is to provide a motor of this kind in which the resistance offered by the motive fluid to the raising of the blades or wings into operative position will be equalized by admitting the fluid under the valves or wings at the proper time.

A secondary object of the invention is to provide a machine of this kind which will be simple and durable in construction and which will produce the maximum quantity of power with a given quantity of water.

With these and other objects in view the invention consists of certain novel features of construction, combination and arrangement of parts, as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawings: Figure 1 is a side elevation of a motor embodying my invention. Fig. 2 is an end view thereof. Fig. 3 is a central longitudinal section taken through the device showing one of the blades or wings raised and the next successive blade or wing just about to be raised. Fig. 4 is a similar view of a portion of the motor showing the position of the parts just after a blade has been raised. Fig. 5 is a transverse section on the line 5—5 of Fig. 3. Fig. 6 is a detail perspective view of one of the blades. Fig. 7 is a detail side elevation of the cover plate. Fig. 8 is a transverse section taken through the abutment and removable plates of the cover plate.

Referring to the drawings for a more particular description of the invention, the numeral 1 denotes the supporting frame which is of approximately rectangular form and upon which is mounted the power wheel 2. The supporting frame is provided with legs 3 which serve to support the same at

the proper height above the ground or other surface upon which the motor may be placed.

In carrying out the invention the power wheel 2 is provided in its periphery with a central deep peripheral recess 4 in which is mounted a series of flat blades or wings 5 which are mounted upon rock shafts 6 the ends 6' of which extend through one of the side walls of the recess 4. The side walls of the recess 4 are also provided with arcuate recesses 7 to receive the edges of the blades or wings 5 attention being called to the fact that when a blade or wing is in raised or operative position its outer side edge lies flush with the periphery of the power wheel 2 and that the shoulders 7' of the recesses form stops to limit the outward surging movement of the blades or wings. Recesses 8 are also formed in the inner wall 9 of the recess 4 to receive the blades or wings when the latter are in lowered or inoperative position so that when in this position the outer faces of the blades or wings will lie approximately flush with the unrecessed portions 8' of said wall 9. Channels 10 are also formed in the inner ends of the unrecessed portions 8' of the wall 9 and lead under the blades or wings 5 to the recesses 8 the purpose of which will be hereinafter disclosed.

A cover or top plate 12 is mounted between two semi-circular side plates 12' bolted at their lower ends to the supporting frame. This cover or top plate 12 is provided with a lower curved edge 13 to receive the peripheral surface of the power wheel and is also provided at its outer end with a correspondingly curved inwardly extending abutment 15 having its opposite sides recessed to receive the removable plates 16, having inwardly inclined inner surfaces 17 to coact with the beveled surfaces 18 of the recessed portion of said abutment, a strip of packing 19 being arranged in the recessed portion of the abutment to provide a water tight joint at this point. A supply pipe 20 extends obliquely through one end of the top or cover plate and is arranged so that its inner end positions immediately in advance of the inner end of the plate 15.

It is to be particularly observed that the apertures 20' in the cover plate to receive the bolts 20'' by means of which said plate is secured in position are slightly elongated in order that the cover may be adjusted from time to time to compensate for any wear up-

on its lower edge 13 and upon the abutment 15 and section 16 and for this reason a water tight fit between the cover plate and the periphery of the power wheel may be maintained at all times.

The shafts 6 of the blades or wings 5 are provided at adjacent ends with operating arms 21 adapted to engage the beveled face 22 of a bracket 23 projecting vertically from one of the side pieces of the supporting frame 1 whereby the rock shafts 6 are successively actuated to swing the blades or wings into raised or operative position or in position to receive the force of the incoming water or other fluid.

In the operation of the device when one of the arms 21 engages the beveled or cam-shaped surface 22 of the bracket 23 its rock shaft is actuated and swings the adjacent blade or wing into raised or operative position or into position to receive the force or impact of the incoming water which passes into the peripheral recess 4 of the power wheel between said blade or wing and the inner ends of the plate 15 of the cover plate and the removable sections 16. In passing under the top or cover plate the blades or wings are successively swung into lowered position by engaging the outer end of the plate 15 thereof. As the power wheel continues to revolve the operating arm of the next blade or wing is brought into contact with the beveled or cam surface of the bracket 23 or in position to raise said blade or wing when the inner end of the plate 15 is in the position indicated in Fig. 3 and the inner end of the supply pipe 20 is in registration with the adjacent channel 10. It will thus be seen that as the water or motive fluid is supplied under the blades or wings at the proper time instead of directly thereon, that the back pressure of the water tending to resist elevation of the blade or wing about to be raised is equalized and the machine will consequently produce greater power with a given quantity of water than would otherwise be possible.

From the foregoing description taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention as defined in the appended claims.

What I claim as my invention is:

1. In a water motor of the class described,

comprising a cylindrical power wheel having a deep peripheral recess, a series of rock shafts mounted in the recessed portion of the wheel, blades or wings mounted on the shafts, a bracket having a beveled or cam surface to engage the arms of the rock shafts whereby the blades or wings are successively swung into raised or operative position to receive the force or impact of the incoming pressure fluid, a cover plate over the power wheel, and means for supplying a pressure fluid to the power wheel under the blades or wings in order that the back flow tending to resist elevation of the blades or wings will be equalized.

2. A water motor of the class described, comprising a power wheel having a central relatively deep peripheral recess, the inner walls of said recess being provided with a series of circumferentially spaced recesses and the unrecessed portions of said wheel having channels leading to or communicating with said series of recesses, a series of blades or wings adapted to lie in said recesses with their top faces flush with the unrecessed portions of the inner wall of said peripheral recess, an adjustable cover plate having a curved surface to receive the periphery of the power wheel, and an inwardly extending abutment at its outer end to fit into the peripheral recess thereof, a supply pipe extending obliquely through the outer end of the cover plate with its inner end positioning immediately in advance of the abutment, and means to successively swing the blades or wings into raised or operative position.

3. A water wheel of the class described comprising a power wheel having a peripheral recess, a series of blades or wings mounted in the recess of said power wheel, means for successively swinging the blades or wings into raised position to receive the force or impact of the incoming fluid, a vertically adjustable cover plate having its inner surface curved to receive the periphery of the power wheel, an inwardly extending abutment at the outer end of the cover plate, said abutment fitting in the peripheral recess of the power wheel and having its side face recessed, a strip of packing in the recessed portion of the abutment, and removable plates to hold the packing in position.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

AMIEL BRATSCHIE.

Witnesses:

E. EDMONSTON, Jr.,
J. P. DUFFIE.