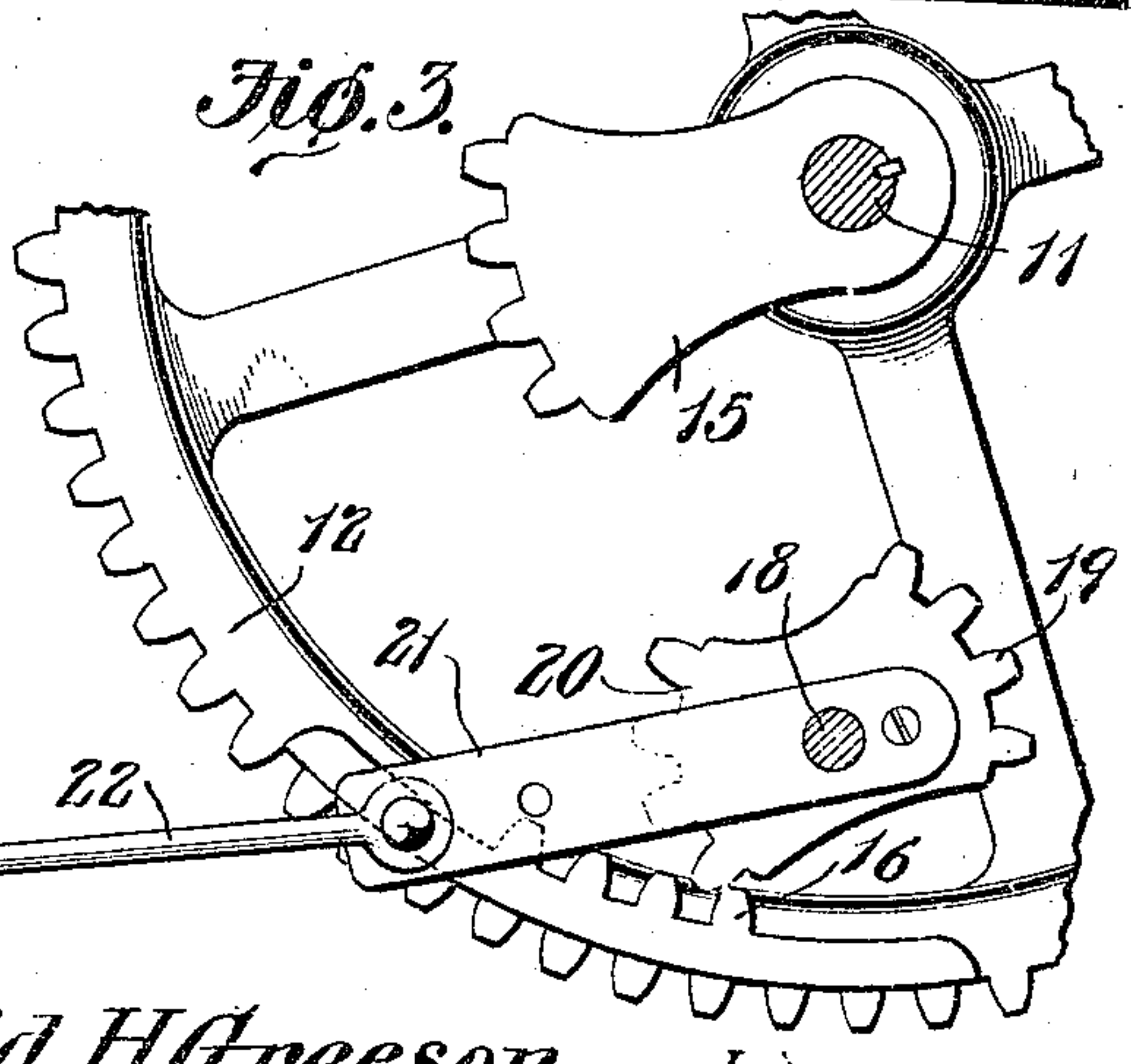
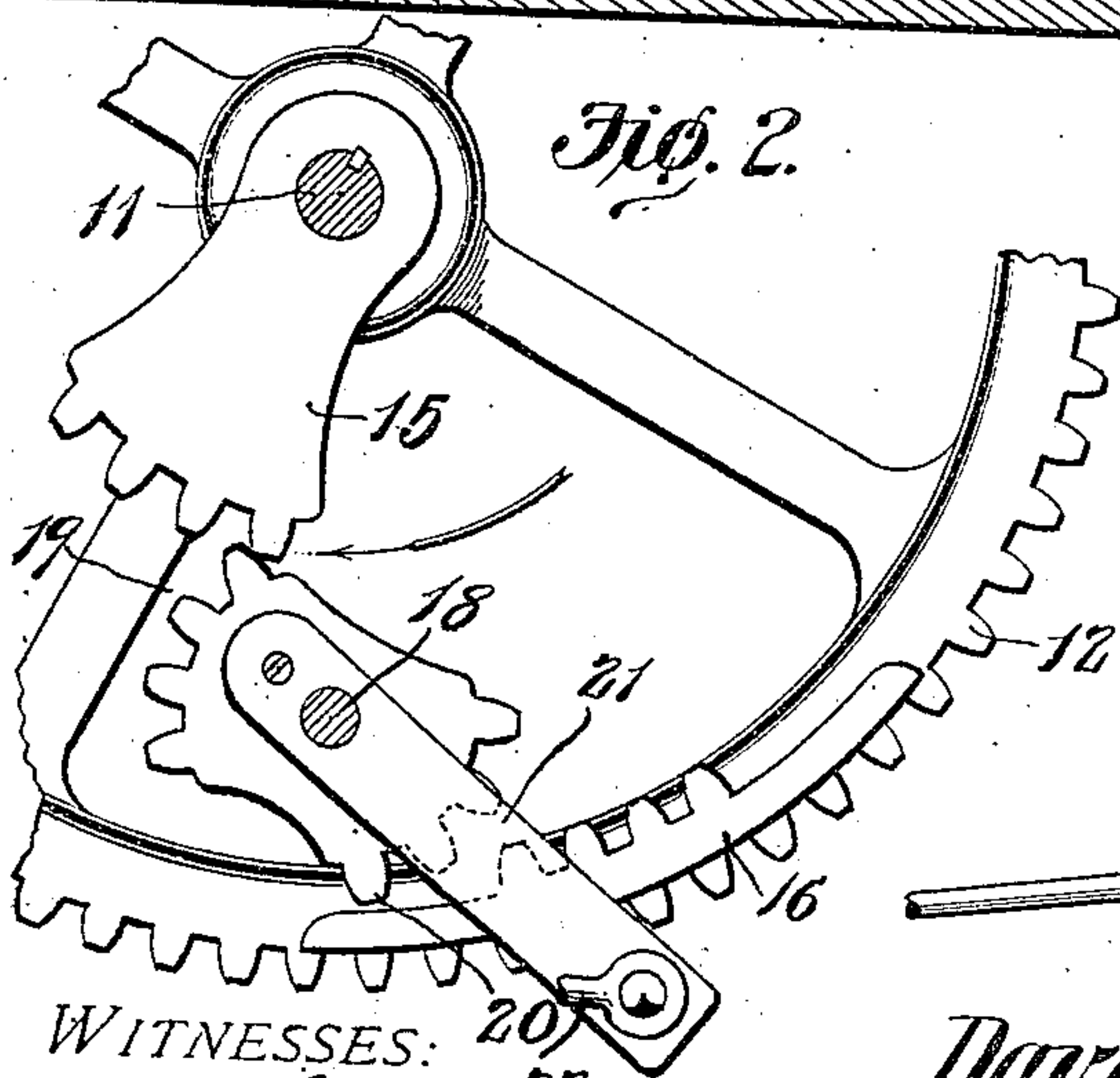
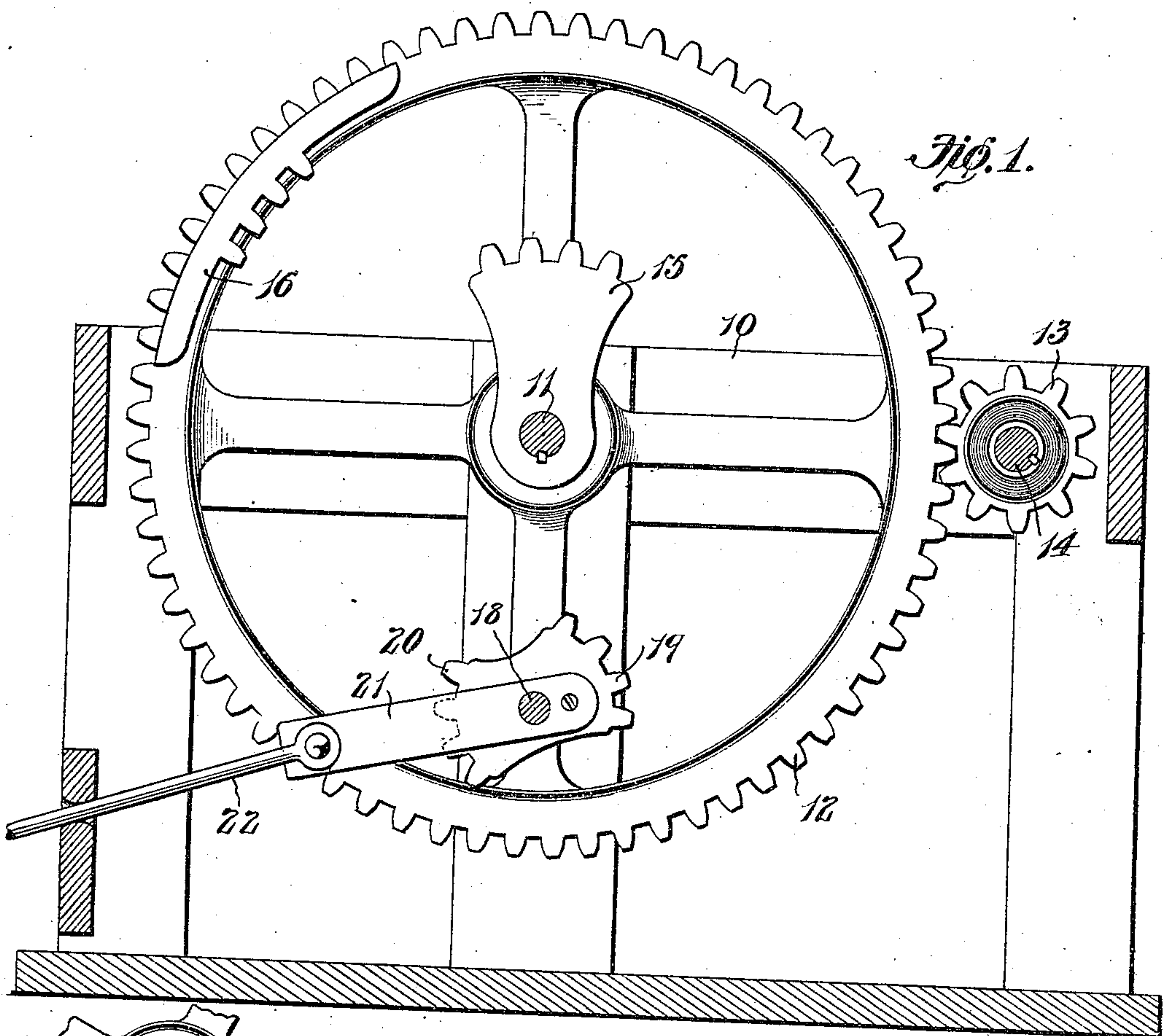


No. 843,598.

PATENTED FEB. 12, 1907.

D. H. GREESON.  
STEAM AND AIR VALVE OPERATOR.  
APPLICATION FILED APR. 20, 1906.



WITNESSES:  
*E. H. Stuart*  
*John Parker*

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# UNITED STATES PATENT OFFICE.

DAVID H. GREESON, OF BOWIE, TEXAS, ASSIGNOR TO GREESON, BURNETT  
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## STEAM AND AIR VALVE OPERATOR.

No. 843,593.

Specification of Letters Patent.

Patented Feb. 12, 1907.

Application filed April 20, 1906. Serial No. 312,850.

*To all whom it may concern:*

Be it known that I, DAVID H. GREESON, a citizen of the United States, residing at Bowie, in the county of Montague and State of Texas, have invented a new and useful Steam and Air Valve Operator, of which the following is a specification.

This invention relates to valve-operating mechanisms, and has for its principal object to provide a mechanism of simple construction, whereby the rotative movement of one element may be transformed into reciprocatory movement of another element.

A further object of the invention is to provide a mechanism of this type in which a double gear-segment is arranged to be engaged in successive order by a pair of racks through which positive movement will be transmitted to the segment alternately in opposite directions, the segment being arranged to assume a normal position of rest between its intervals of movement.

With these and other objects in view, as will more fully hereinafter appear, the invention consists in certain novel features of construction and arrangement of parts, hereinafter fully described, illustrated in the accompanying drawings, and particularly pointed out in the appended claim, it being understood that various changes in the form, proportions, size, and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings, Figure 1 is a sectional elevation of a valve-operating mechanism constructed in accordance with the invention. Figs. 2 and 3 are similar views of portions of the same, showing parts in different positions.

Similar numerals of reference are employed to indicate corresponding parts throughout the several figures of the drawings.

The working parts of the mechanism are supported in a suitable frame 10, having bearings for a horizontally-disposed shaft 11, on which is mounted a gear-wheel 12, and in the present instance this gear receives motion from a pinion 13, that is mounted on a shaft 14, arranged parallel with the shaft 11. To the shaft 11 is secured a small segment or curved rack 15, and to the outer portion of

the gear is secured a second rack 16, the operating-faces of these racks being spaced from each other radially with respect to the gear-wheel. The frame is further provided with a short shaft or stud 18, on which is loosely mounted a double segment, having two sets of rack-teeth 19 and 20, which are arranged, respectively, for engagement by the racks 15 and 16. Secured to the double segment 19 is an arm 21, and to the lower end of this arm 21 is secured a valve-operating arm 22, which may be guided in any suitable manner and through which reciprocatory movement is imparted to a valve or other suitable mechanism.

During the operation of the device, the valve-rod being at full stroke to the left, the gear 12 is rotated at any desired speed and the rack 15 is first brought into engagement with the upper teeth 19 of the segment, rotating the latter to the position shown in Fig. 2 and moving the arm 21 rearward through an arc of somewhat more than one hundred and twenty degrees, and after the final disengagement of the rack with the teeth 19 the parts are held in the position to which they have been moved by friction or other force acting on the valve or its rod. The teeth of the rack 16 will then engage the teeth 20, and the segment will be rotated in the opposite direction to the position indicated in Fig. 3, moving the arm 21 to its initial position and completing the full stroke of the valve.

The apparatus may be employed to advantage as a mechanical movement for transforming rotative into reciprocatory movement and is of especial value in the operation of valves of fluid-pressure-operated mechanisms of different types.

The apparatus is found of especial value in the operation of steam cotton-presses. Under ordinary conditions the pressman must stand very close to the press and in a position that is very injurious to health. By employing this mechanism the controlling-valve of the press may be operated by the ginner, who stands generally at a considerable distance from the press proper.

I claim—

In apparatus of the class described, a double-segment gear, the segments being of the same radius, a valve-operating arm project-

ing from said gear, a rod extending from the  
free end of the arm, a revoluble wheel or disk,  
and a pair of spaced racks revoluble with the  
wheel or disk and arranged to successively  
5 engage the gear-segment and oscillate the  
same.

In testimony that I claim the foregoing as

my own I have hereto affixed my signature in  
the presence of two witnesses.

DAVID H. GREESON.

Witnesses:

B. WOODS,  
CECIL THOMAS.