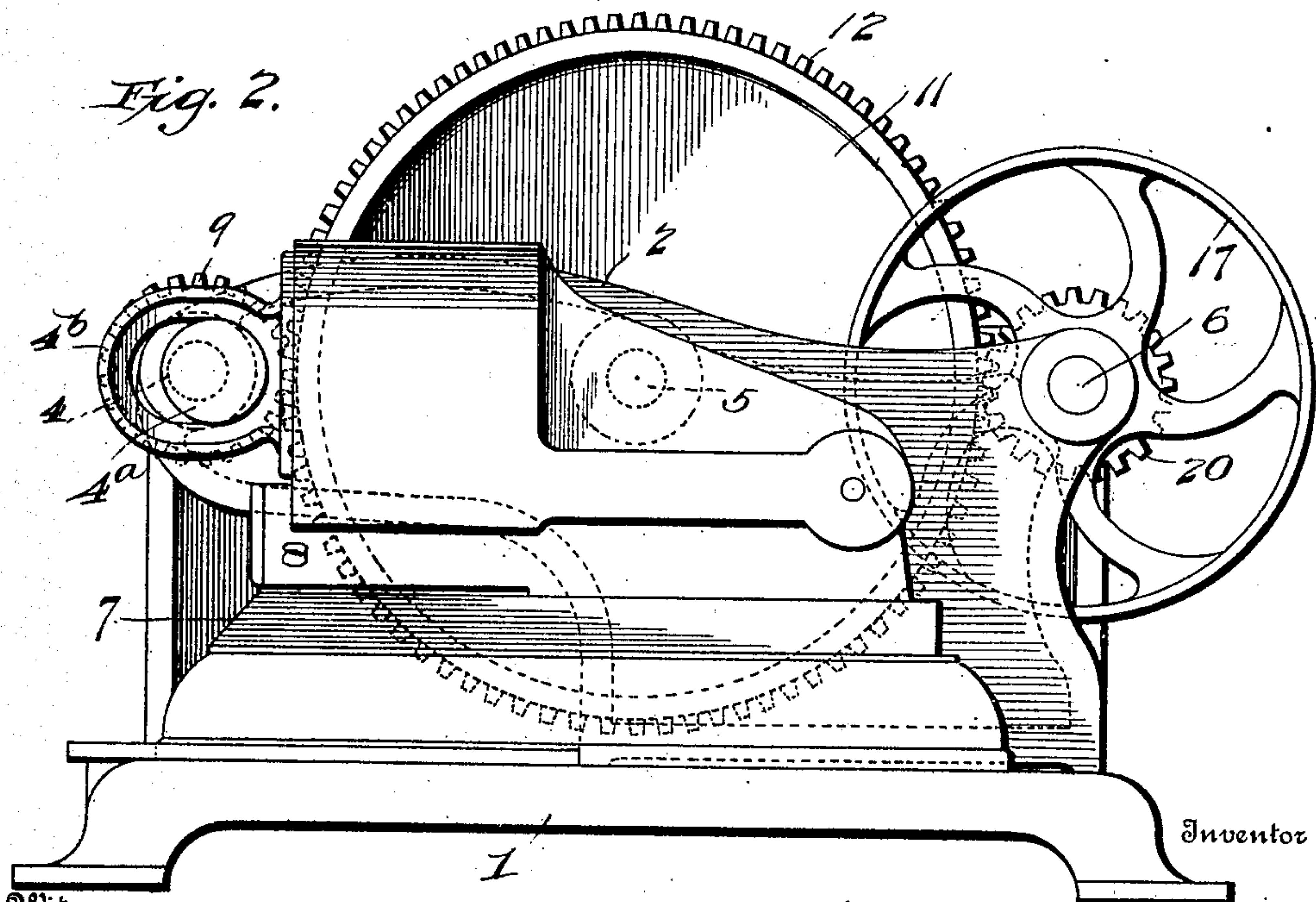
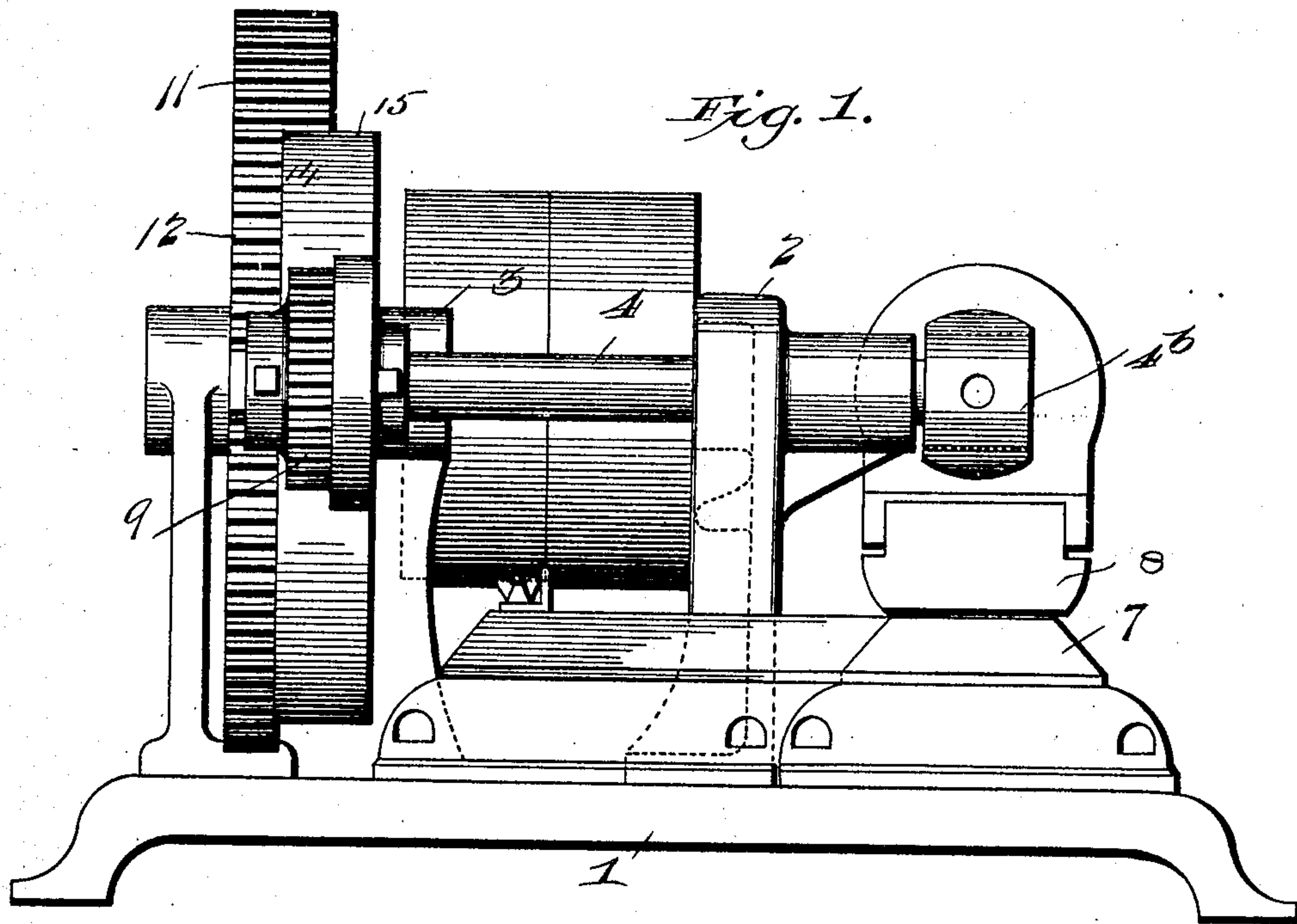


No. 885,587.

W. G. CAPITAINE.
POWER PERFORATING MACHINE.
APPLICATION FILED JULY 23, 1906.

PATENTED APR. 21, 1908.

3 SHEETS—SHEET 1.



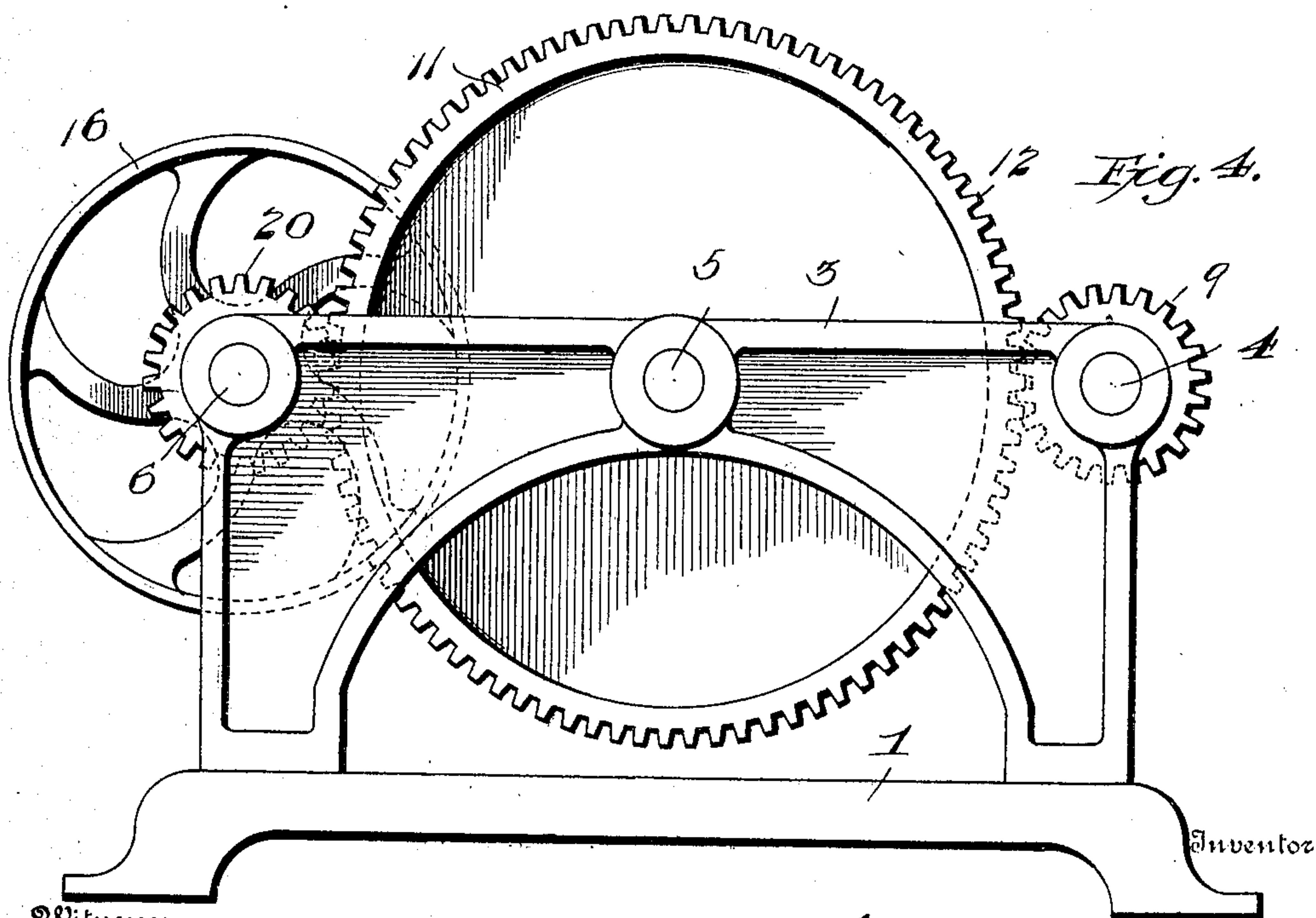
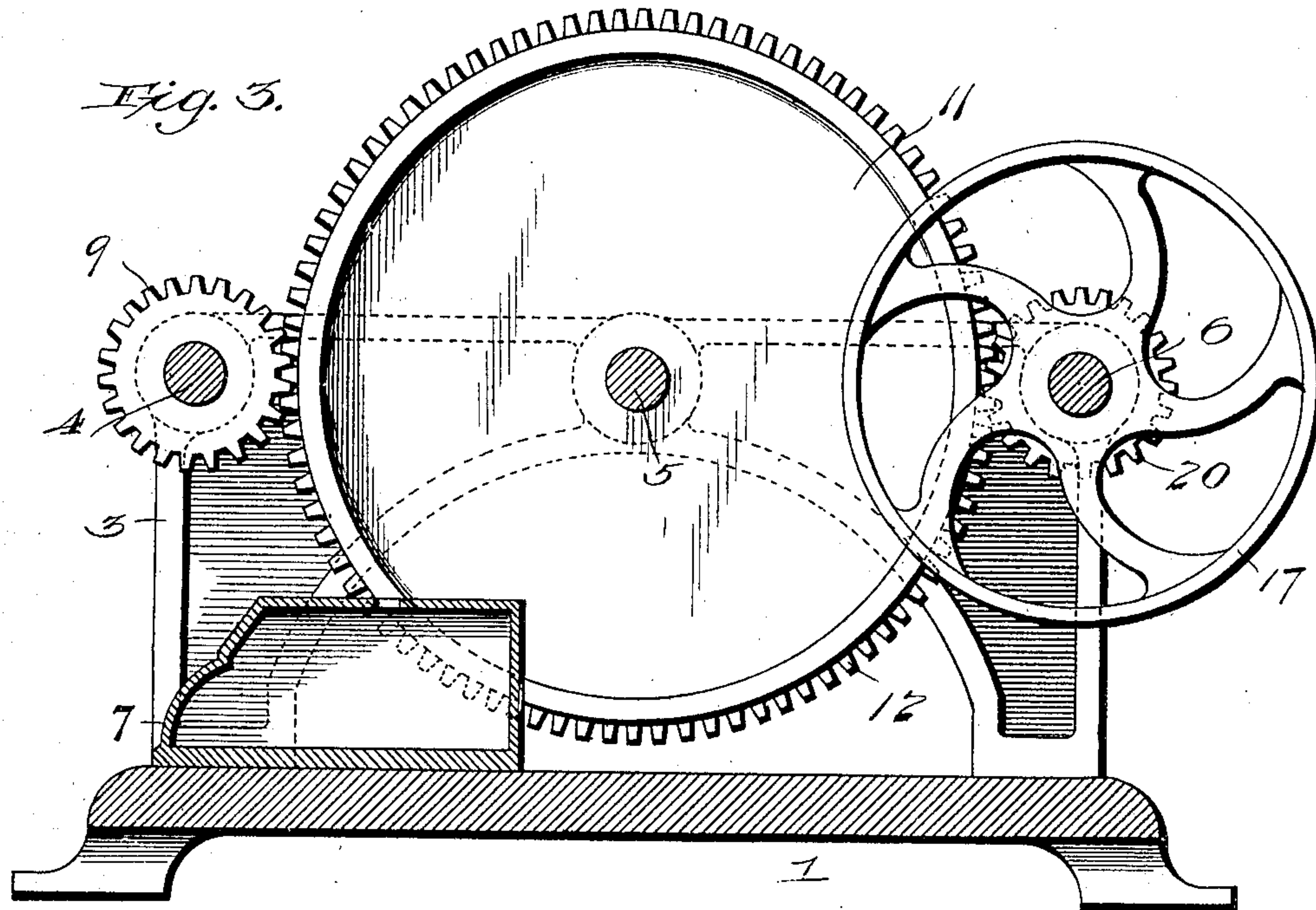
Witnesses
T. L. Mochamer
James F. Brown

Inventor
Wallace G. Capitaine
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His Attorney

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3 SHEETS—SHEET 2.



Witnesses

T. L. Mosher
James F. Brown

By

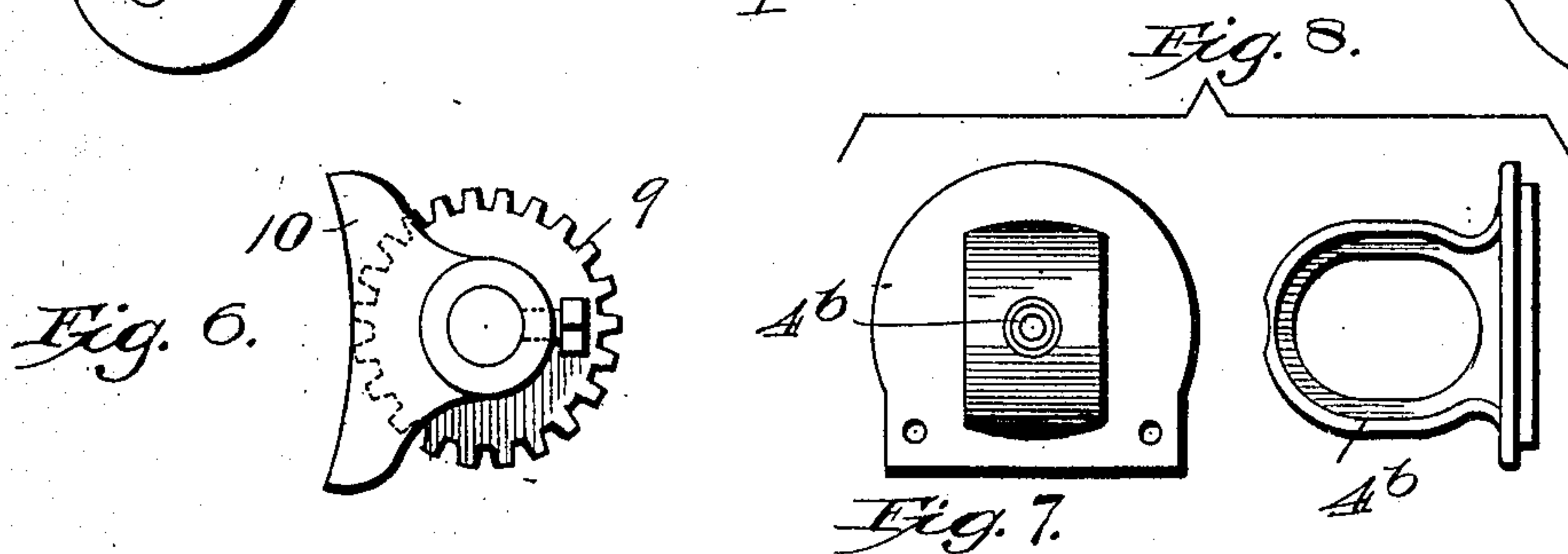
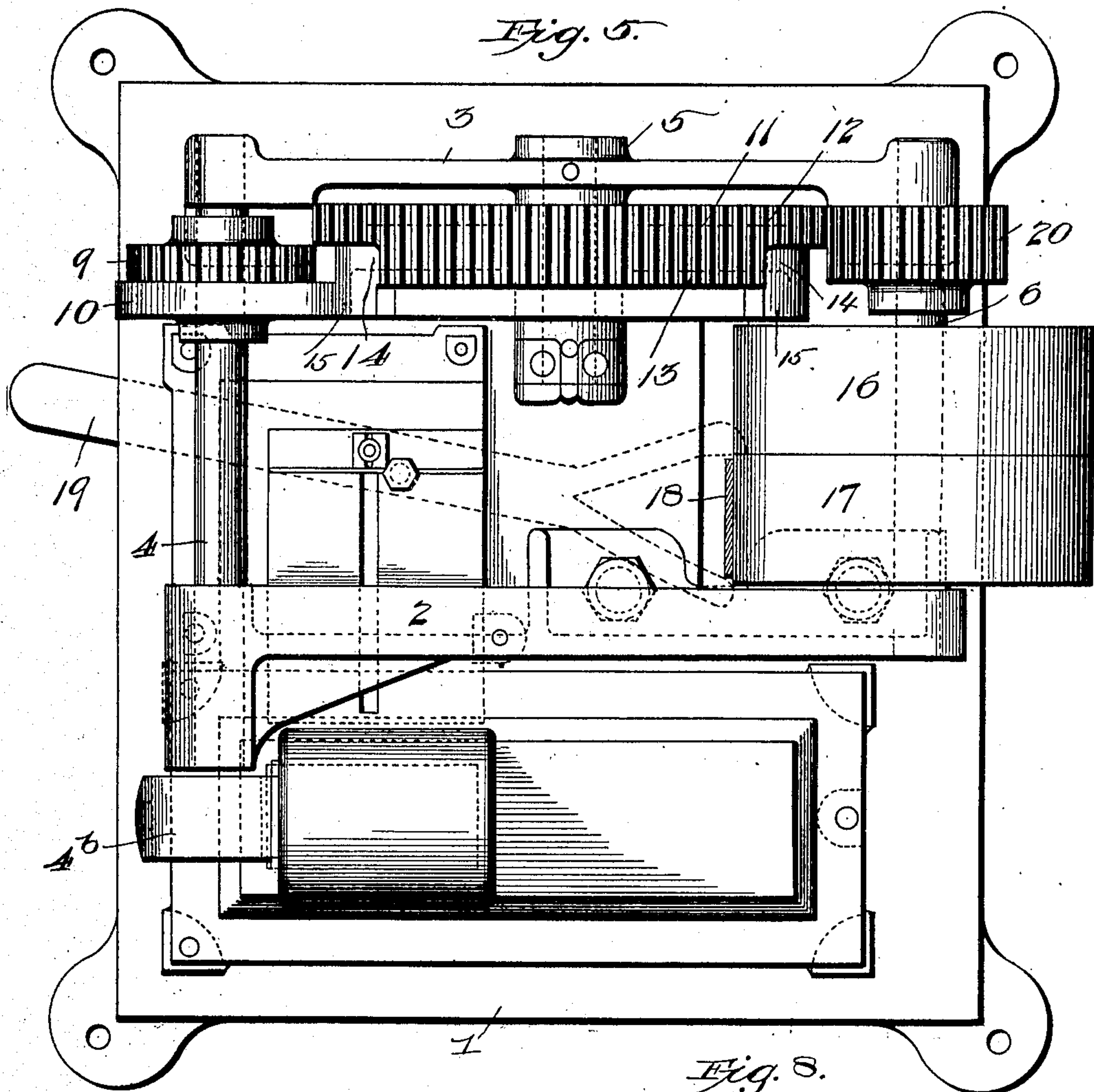
Wallace G. Capitaine
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His Attorney.

No. 885,587.

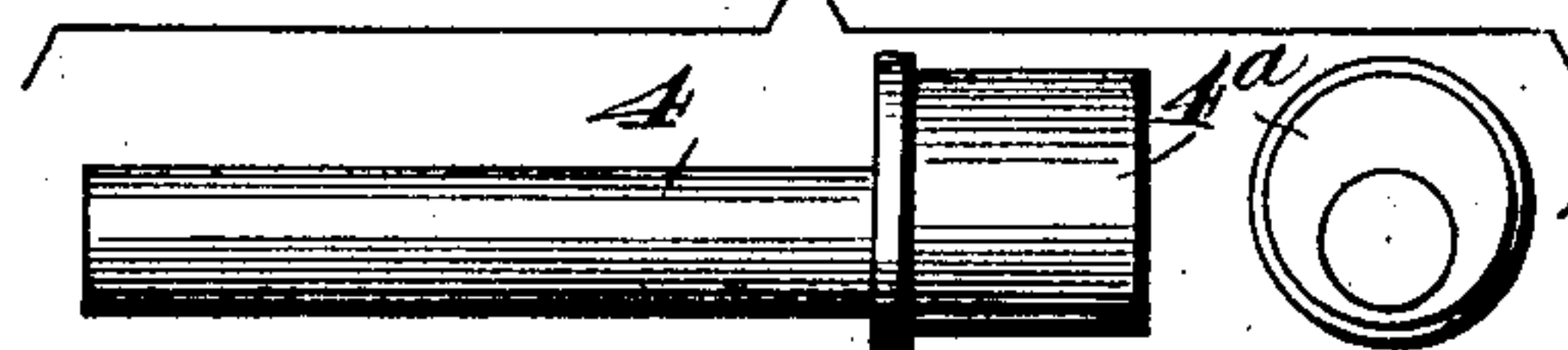
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3 SHEETS—SHEET 3.



Witnesses

T. L. Mockmore
James F. Brown



By

Inventor
Wallace G. Capitaine
Joe. L. Skidmore
His Attorney.

UNITED STATES PATENT OFFICE.

WALLACE G. CAPITAINE, OF RICHMOND, VIRGINIA.

POWER PERFORATING-MACHINE.

No. 885,587.

Specification of Letters Patent.

Patented April 21, 1908.

Application filed July 23, 1906. Serial No. 327,416.

To all whom it may concern:

Be it known that I, WALLACE G. CAPITAINE, a citizen of the United States, residing at Richmond, in the county of Henrico and State of Virginia, have invented certain new and useful Improvements in Power Perforating-Machines, of which the following is a specification.

This invention relates to perforators or punches for paper or other sheet material, and one of the principal objects of the same is to provide means for gearing up a machine of this character so that it may be run by power, and in which the perforating tools or punches are timed by the gearing to remain in position to permit the sheet material to be fed into the machine and to then operate quickly to punch the sheet and retract the perforators to give time for feeding another sheet into the machine.

Another object is to provide simple and efficient means for operating a paper perforator at suitable intervals to permit sufficient time between each operation to properly feed the paper to the machine.

In the use of hand operated perforating machines it has been found difficult to turn out perfect work, and even then the operation is slow and tedious.

One of the principal objects of my invention is to overcome the defects existing in such machines.

The objects referred to are accomplished by means of the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation of a machine made in accordance with my invention; Fig. 2 is a side elevation of the same; Fig. 3 is a vertical front to rear section; Fig. 4 is a side elevation, taken from the side opposite to that shown in Fig. 3; Fig. 5 is a plan view of the machine; Fig. 6 is a side view of a pinion and sliding shoe; Fig. 7 is a side and end view of the eccentric shaft, and Fig. 8 is a similar view of the cam bearing for said eccentric.

Like numerals designate like parts wherever they occur in the different views of the drawings.

Referring to the drawings for a more particular description of the machine, the numeral 1 designates the base of the machine, and 2, 3, are the frame bars which are suitably tapped to provide bearings for the shafts 4, 5, and 6. The female die plate 7 and the

movable male die 8, may be of any required conformation, depending upon the character of the work to be done and the class of material to be operated upon. The shaft 4 is provided with an eccentric 4^a, which engages a cam bearing 4^b connected to the male die member, and by means of which the male die 8 is moved up and down relatively to the female die plate 7. On the shaft 4 is a pinion 9, upon the hub of which a sliding shoe 10 is formed or properly secured. Fixed to the shaft 5 is the large gear wheel, 11. This gear wheel is provided with cogs 12 which extend entirely around the periphery of said wheel, and a suitable number of said teeth or cogs 12 are extended laterally and inwardly as shown at 13, see Figs. 1 and 5, thus forming a smooth peripheral portion 14, between the lateral termination of the teeth 12 and 13, which smooth portion 14 only partially surrounds the wheel, while the entire peripheral portion of the wheel is smooth at 15, as clearly shown in Fig. 5. The pinion 9 engages the teeth 13, and the sliding shoe 10 slides upon the smooth periphery 15 thereby serving as a guide to insure proper register of the cogs on the gear wheel 11 and the pinion 9. On the shaft 6 is a fast pulley 16 and a loose pulley 17, and a belt 18 from any suitable motor engages the pulleys and may be shifted by the lever 19 from one pulley to the other, as will be understood. Fixed to the shaft 6 is a pinion 20 which is in mesh with the teeth or cogs 12 of the large gear wheel.

From the foregoing it will be obvious that the eccentric shaft 4 and the eccentric 4^a are intermittently rotated, said rotation occurring at the time the teeth of the pinion 9 engage the cogs or teeth 13 of the large gear wheel. The male die 8 is carried down to perforate the paper and returns to its upper position during the time of engagement of the pinion 9 with the cogs 13, while the said die is held on its upper position during the remainder of the rotation of said large gear wheel 11, the shoe 10 then sliding on the smooth peripheral portion 15, of said gear wheel 11, to insure proper alinement and register of the cogs on the pinion 9 and the teeth 13, at the beginning of their next engagement.

From the foregoing it will be obvious that owing to the comparatively quick downward and upward movement of the male die considerable time is given for the removal of the perforated sheets, and the feeding of the

sheets to be perforated, and this during the continuous rotative movement of the large gear wheel.

Various changes may be made in the arrangement and construction of the various parts without departing from the spirit and scope of the invention.

Having thus described my invention, what I desire to secure by Letters Patent and claim is:—

1. In a machine for perforating sheet material, the combination with a female punch member, and a male punch member, of means for intermittently reciprocating said male member, comprising a gear wheel provided with teeth extending around its periphery, teeth extending only partially around its periphery, and a smooth peripheral portion, a gear pinion meshing with the peripheral teeth of said gear wheel, a second pinion adapted to engage the gear teeth extending partially around said wheel, and cam mechanism carried by the shaft of said second pinion.
2. In a machine for perforating sheet material, the combination with punch members, of means for intermittently reciprocating one of said members, comprising a gear wheel having peripheral teeth, a portion of which are extended laterally, and a smooth peripheral surface, a pinion meshing with said peripheral teeth, a second pinion adapted to engage said extended teeth, cam mechanism carried by the shaft of said second pinion, and means also carried by said shaft for holding the reciprocating punch member away from the other member.
3. In a machine for perforating sheet material, the combination with punch members, of means for intermittently reciprocating one of said members, comprising a gear wheel having peripheral teeth, a portion of which

are extended laterally, and a smooth peripheral surface, a pinion meshing with said peripheral teeth, a second pinion adapted to engage said extended teeth, cam mechanism carried by the shaft of said second pinion, and means also carried by said shaft for holding the reciprocating punch member away from the other member consisting of a shoe adapted to bear upon the smooth peripheral portion of said gear wheel.

4. In a machine for perforating sheet material, the combination with two punch members, of a continuously revoluble shaft, and means for intermittently reciprocating one of said punch members, comprising a gear wheel having peripheral teeth, a portion of which are laterally extended, and a smooth peripheral surface, a pinion adapted to engage said extended teeth, a sliding shoe mounted upon the shaft of said pinion and adapted to bear upon said smooth peripheral surface, a cam upon said pinion shaft, and a bearing for said cam, said bearing being connected to the reciprocating punch member.

5. In a machine for perforating sheet material, the combination with a driving shaft, and a pinion mounted thereon, of a gear wheel having peripheral teeth, a portion of which are laterally extended, and a smooth peripheral surface, a second pinion adapted to engage said extended teeth, a sliding shoe carried by the shaft of said second pinion, and adapted to bear upon said smooth peripheral surface, a cam upon the shaft of said second pinion, punch members one of which is adapted to be reciprocated intermittently, and a cam-bearing secured to said reciprocating punch member.

WALLACE G. CAPITAINE.

In presence of—

E. C. LAIRD,
A. C. TADIN.