

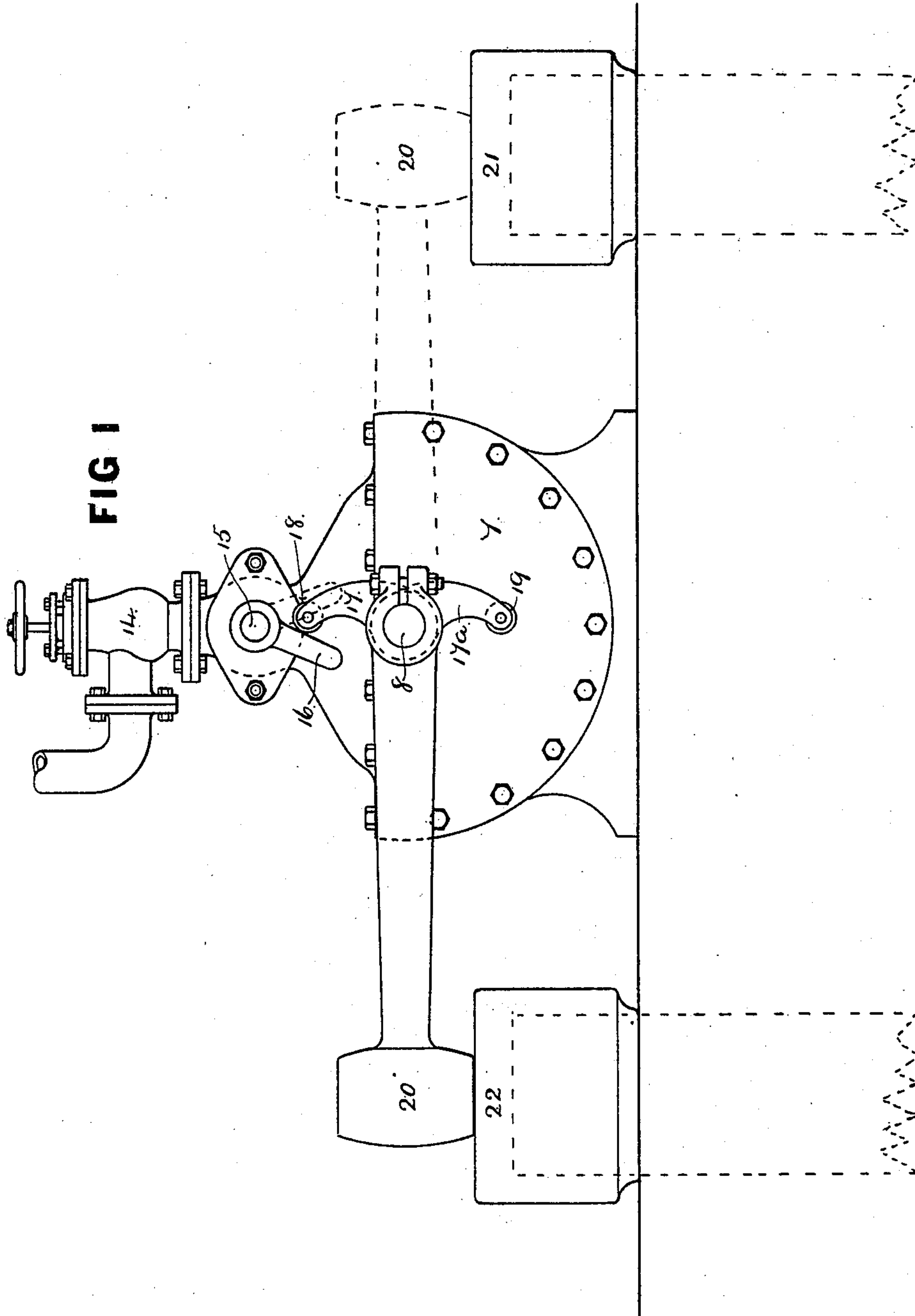
(No Model.)

3 Sheets—Sheet 1.

E. S. BRETT.
POWER HAMMER.

No. 594,063.

Patented Nov. 23, 1897.



Witnesses

Clayward Powell

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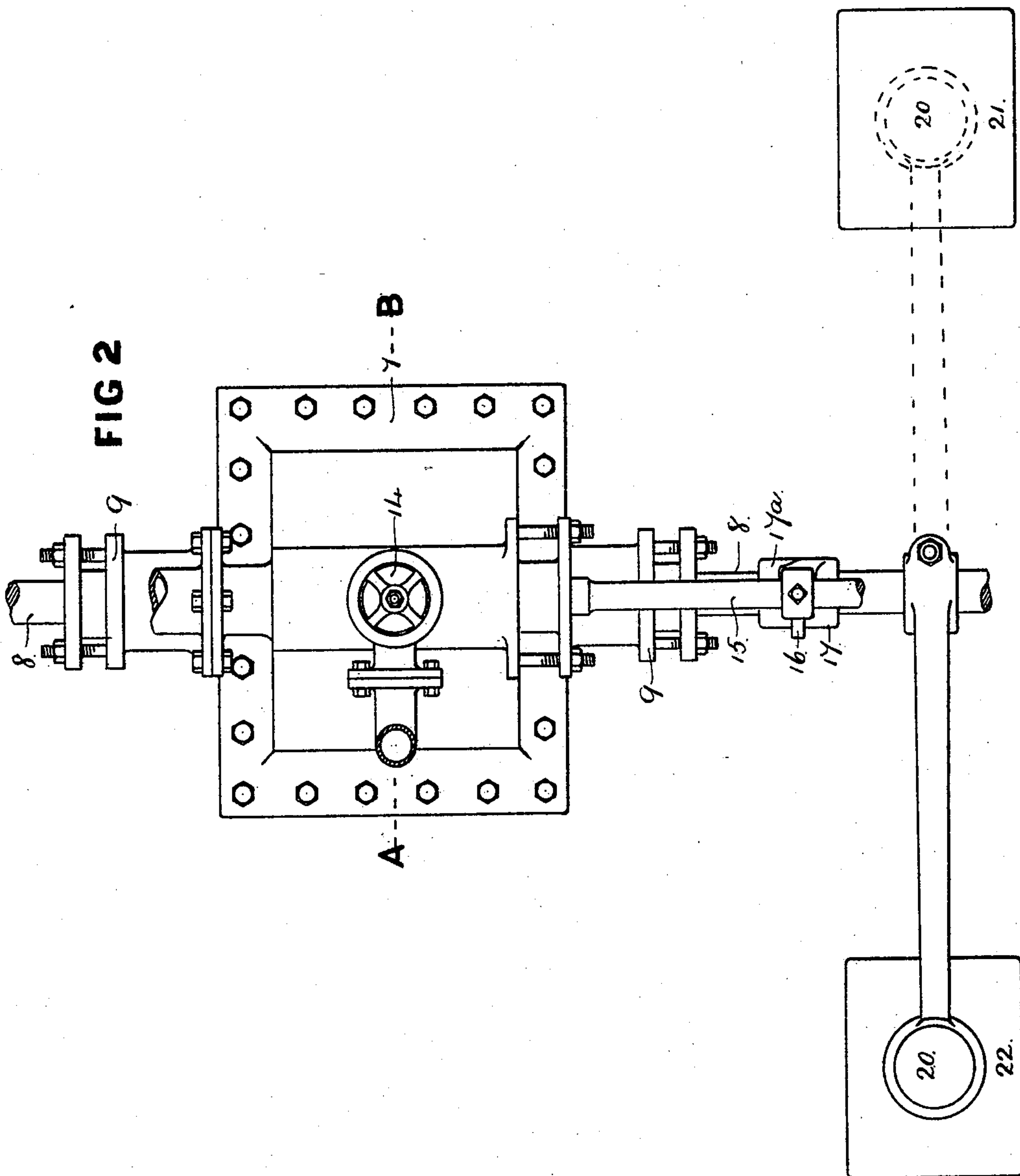
(No Model.)

3 Sheets—Sheet 2.

E. S. BRETT.
POWER HAMMER.

No. 594,063.

Patented Nov. 23, 1897.



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(No Model.)

3 Sheets—Sheet 3.

E. S. BRETT.
POWER HAMMER.

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FIG 3

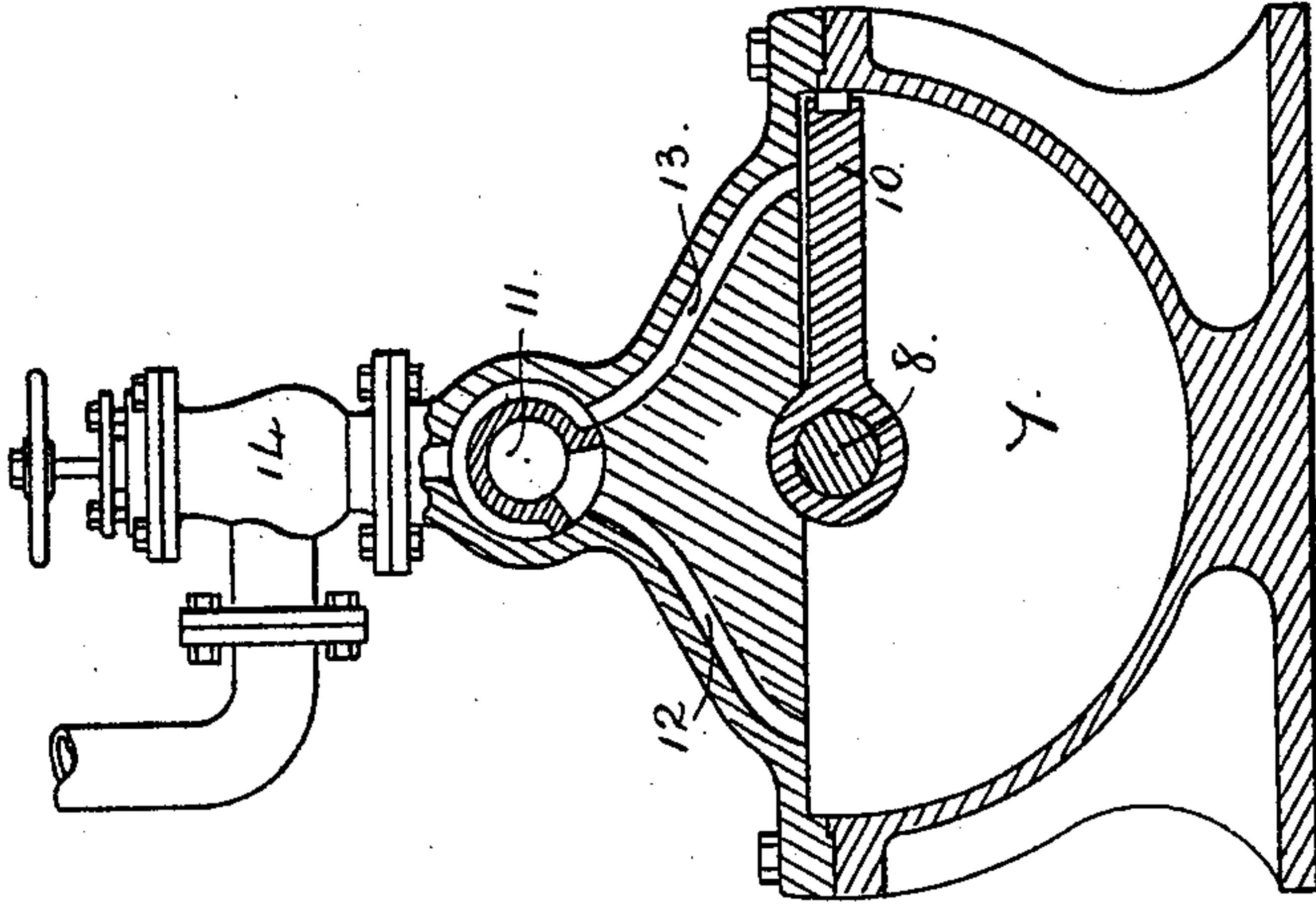


FIG 5

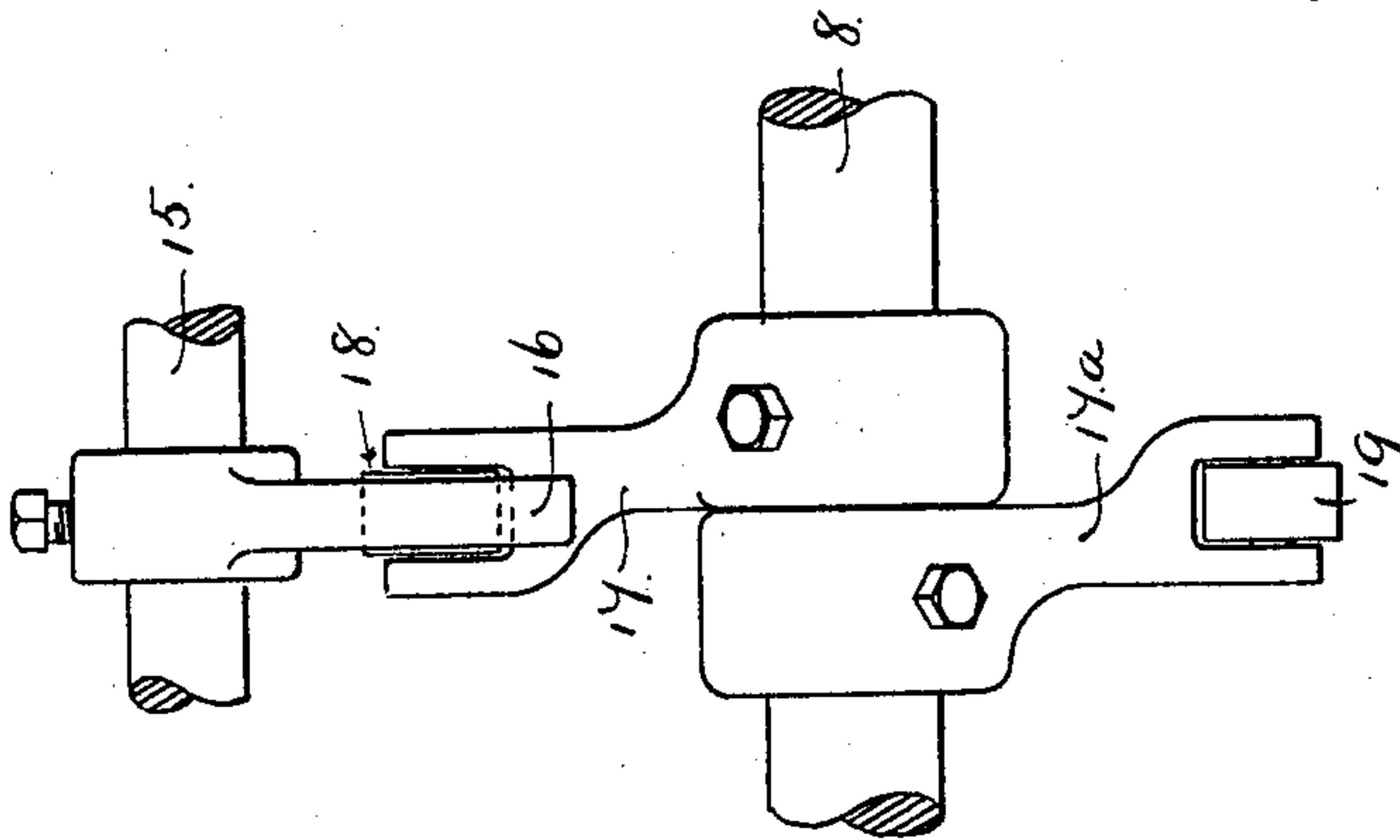
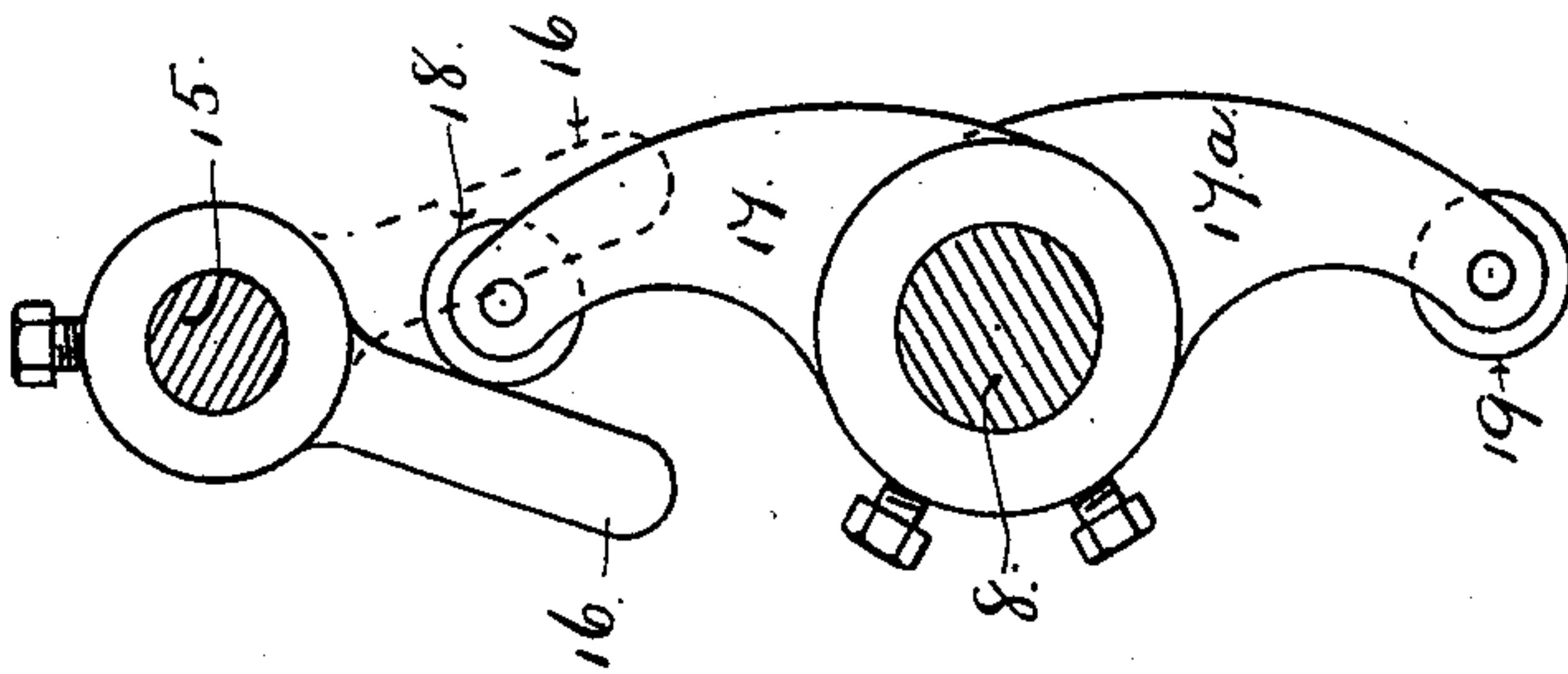


FIG 4



Witnesses

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UNITED STATES PATENT OFFICE.

EDWARD SAMUEL BRETT, OF COVENTRY, ENGLAND.

POWER-HAMMER.

SPECIFICATION forming part of Letters Patent No. 594,063, dated November 23, 1897.

Application filed June 21, 1897. Serial No. 641,566. (No model.)

To all whom it may concern:

Be it known that I, EDWARD SAMUEL BRETT, a subject of the Queen of Great Britain, residing at Meriden Street, Coventry, England, have invented certain new and useful Improvements in Power-Hammers, of which the following is a specification.

My invention relates to improvements in power-hammers in which a hammer-head is carried at the one end of its helve, the other end of the helve being secured to a part rotating shaft, which latter is operated by a piston within a cylinder by the agency of steam or other suitable fluid means of force; and the objects of my improvements are, first, to operate a radial hammer by means of a part rotating radial piston within a cylinder; second, to provide a double-sided action by the said hammer, and, third, to provide facilities for the operation of the valve. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is an end elevation of the entire hammer; Fig. 2, a plan view of the hammer; Fig. 3, a vertical section of the hammer on line A B, Fig. 2; and Figs. 4 and 5 enlarged detailed views of the valve-operating mechanism.

Similar reference-figures refer throughout the several views to the same thing or part.

I will describe these my improvements as though steam was the force medium employed, although it will be readily seen that other fluid-pressure may be used with but small variation in detail of the parts.

7 is the cylinder or pressure-chamber which is secured to a suitable fixed base. Concentric with this cylinder is the main shaft 8, which is suitably provided for by stuffing-box glands 9 9, &c., as required. Upon this shaft is fixed the piston 10, which is capable of a backward and forward part rotating motion.

11 is the inlet-valve, which is preferably of the circular type, as shown, but which may be substituted, if desired, by a flat or other shaped valve. The circular valve, however, appears to answer best.

12 and 13 are the communicating ports from the valve 11 to the pressure-chamber 7, one upon either side of the piston.

14 is a controlling stop-valve, through which the steam may be adjustably passed into and through the valve 11.

The automatic working of the valve 11 from the reciprocating motion of the shaft 8 may be done in various ways, but that shown answers the purpose well, and is as follows: Upon the valve-spindle 15 is the crank-arm 16, which is adjustably fixed to suit the position of the valve 11. Upon the main shaft 8 are secured the cam-levers 17 and 17^a, having antifriction-rollers 18 and 19, by which—during the reciprocal half-turn movement of the piston 10—the valve 11 is opened to steam or to exhaust, as the case may be. As seen, for instance, in Fig. 3, the port is open to steam by reason of the cam 17 having in its previous movement pushed the lever 16 and valve 11 to the left, as shown. The piston will now be pushed around to the other side, and in so doing will raise the hammer 20 a half-turn, so that it will strike upon the anvil 21, as shown in dotted lines, it having previously struck upon the anvil 22 in a similar manner. The cam 17^a is so placed as to cut off steam from port 13 and open it to exhaust before the piston reaches the half-turn. The return stroke is effected and controlled in a similar manner.

As will be clearly seen, one hammer and one anvil only may be used, or any number of hammers may be suitably fixed upon the same shaft, the latter being lengthened to suit. It will also be seen that, if desired, when one hammer and one anvil only are used steam may be admitted to one side of piston only, so as to raise the hammer and then allow it to fall of its own weight. The construction and shape of the hammer-heads 20 and the anvils 21 and 22 will be variously arranged to suit the work in hand.

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

1. In power-hammers the combination with the valve 11, ports 12 and 13, spindle 15 and crank-arm 16, of the cams 17 and 17^a with shaft 8 substantially as set forth and shown.

2. In power-hammers the combination with a part rotating shaft 8 of the hammer 20 having a double face, with double anvils 21 and 22, substantially as set forth and shown.

EDWARD SAMUEL BRETT.

Witnesses:

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