G. W. KELLOGG.

CAM DRIVEN MULTIPLE CYLINDER PUMP APPARATUS.

APPLICATION FILED MAY 28, 1909.

973,668. Patented Oct. 25, 1910.

Fig. 2.

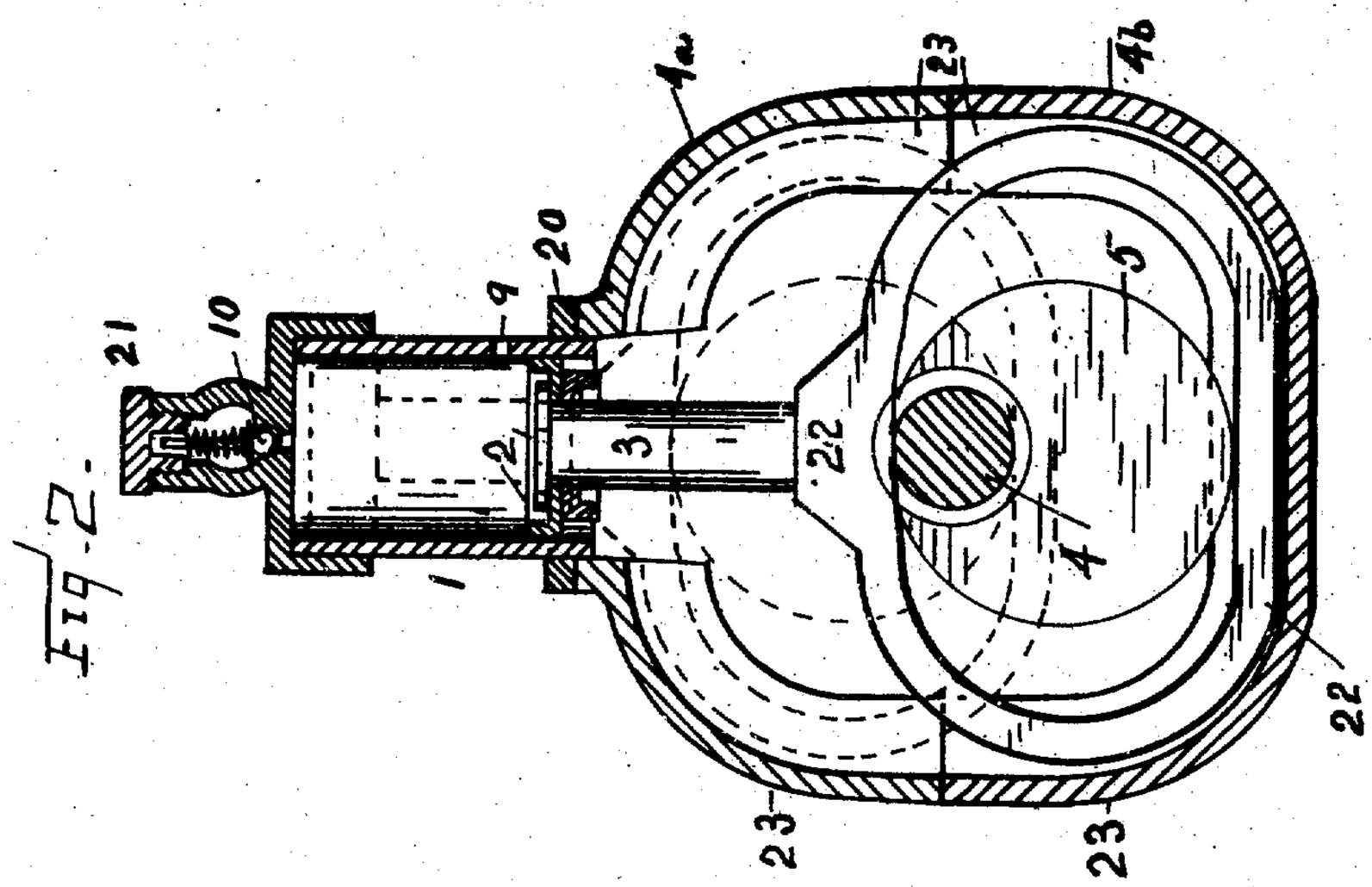
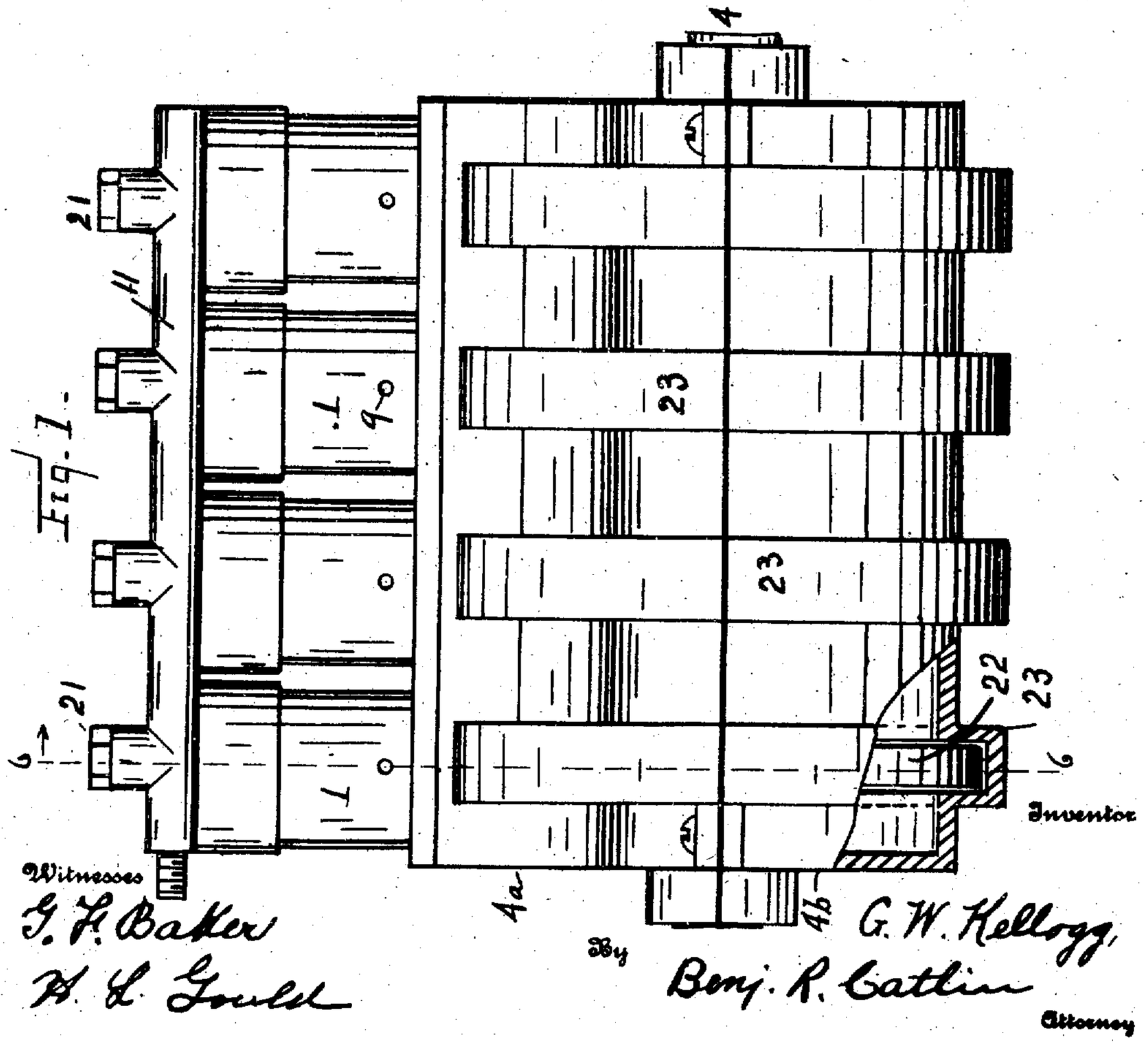


Fig. 1.



Witnesses

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CAM-DRIVEN MULTIPLE-CYLINDER PUMP APPARATUS.

973,668. Specification of Letters Patent. Patented Oct. 25, 1910.

Application filed May 28, 1909. Serial No. 499,019.

To all whom it may concern:

Be it known that I, GEORGE W. KELLOGG, a resident of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Cam-Driven Multiple-Cylinder Pump Apparatus; and I do hereby 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 pertains to make and use the same.

This invention relates to air pump apparatus, and to efficient driving and operating devices therefor, the object of the invention being to provide an apparatus of large capacity, easily and smoothly driven, and of comparatively low height.

The invention consists in the construction hereinafter described and particularly pointed out.

In the accompanying drawing which illustrates the invention and forms part of the specification,—Figure 1 is a side view of the preferred construction of the apparatus; Fig. 2 is a section thereof on line 6, 6 of Fig. 1.

The apparatus comprises a plurality of parallel pump cylinders 1, in each of which is a piston 2 having a rod 3. Said cylinders are supported on a hollow base, preferably divided into upper and lower sections 4^a, 4^b, the latter supporting a shaft 4, on which are circular eccentrics 5, one for each cylinder, and said eccentrics are preferably spaced or stepped around the shaft so as to actuate the pistons successively. Connected to each piston rod is a strong link-like body 22, within each of which one of the eccentrics is held and in which it rotates with shaft 4 which may be driven by any suitable power. As here shown the cylinders 1 are all mounted on a common plate 20 which is secured to the upper section 4^a of the body. Each cylinder has an air inlet 9 at such a point in its length that the piston on its back stroke passes below the inlet, whereby air is admitted which is compressed on the upstroke and driven by valve 10. As before indicated, compression in the cylinders follows one after the other, and the air may be led from pipe 11 to any suitable reservoir or place of use directly, or may be diverted through one or more of the branch connections to whistles or other devices to be operated.

In order that the size and weight of the pump may be reduced, and to provide guides or ways for the links 22 to move in, the castings 4^a, 4^b, are each cast with a comparatively small body, and with projecting, interiorly grooved parts 23 of suitable size and form to accommodate said links. By the described means the several pistons are positively driven in both directions, the strain on the shaft is distributed, and the links are effectively guided. Lubricating oil may be placed in considerable quantity in the lower section of the hollow body whereby the links and eccentrics will be kept lubricated.

Having thus described the invention what I claim is,—

1. The combination of a hollow base comprising upper and lower separable sections having each a plurality of projecting interiorly grooved parts, a plurality of cylinders mounted in a longitudinal row on the upper section, each above a separate groove, a piston and rod adapted to reciprocate, and guided by the corresponding groove, a power shaft extending longitudinally in said base, spaced eccentrics on said shaft, one in each of said links for reciprocating its piston, and a passage with which the cylinders communicate by separate valved ports.

2. The combination of a hollow base comprising upper and lower separable sections having each four registering projecting interiorly grooved parts, four cylinders mounted in a longitudinal row on the upper section, one above each grooved part, a piston and rod for each cylinder, a link connected to each piston rod and adapted to move in and be guided by the corresponding groove, a power shaft extending longitudinally in said base, spaced eccentrics on said shaft, one in each of said links for reciprocating its piston, and a common pipe or passage with which the cylinders communicate by separate valved ports.

In testimony whereof, I have signed this specification in the presence of two subscribing witnesses.

GEORGE W. KELLOGG.

Witnesses:

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