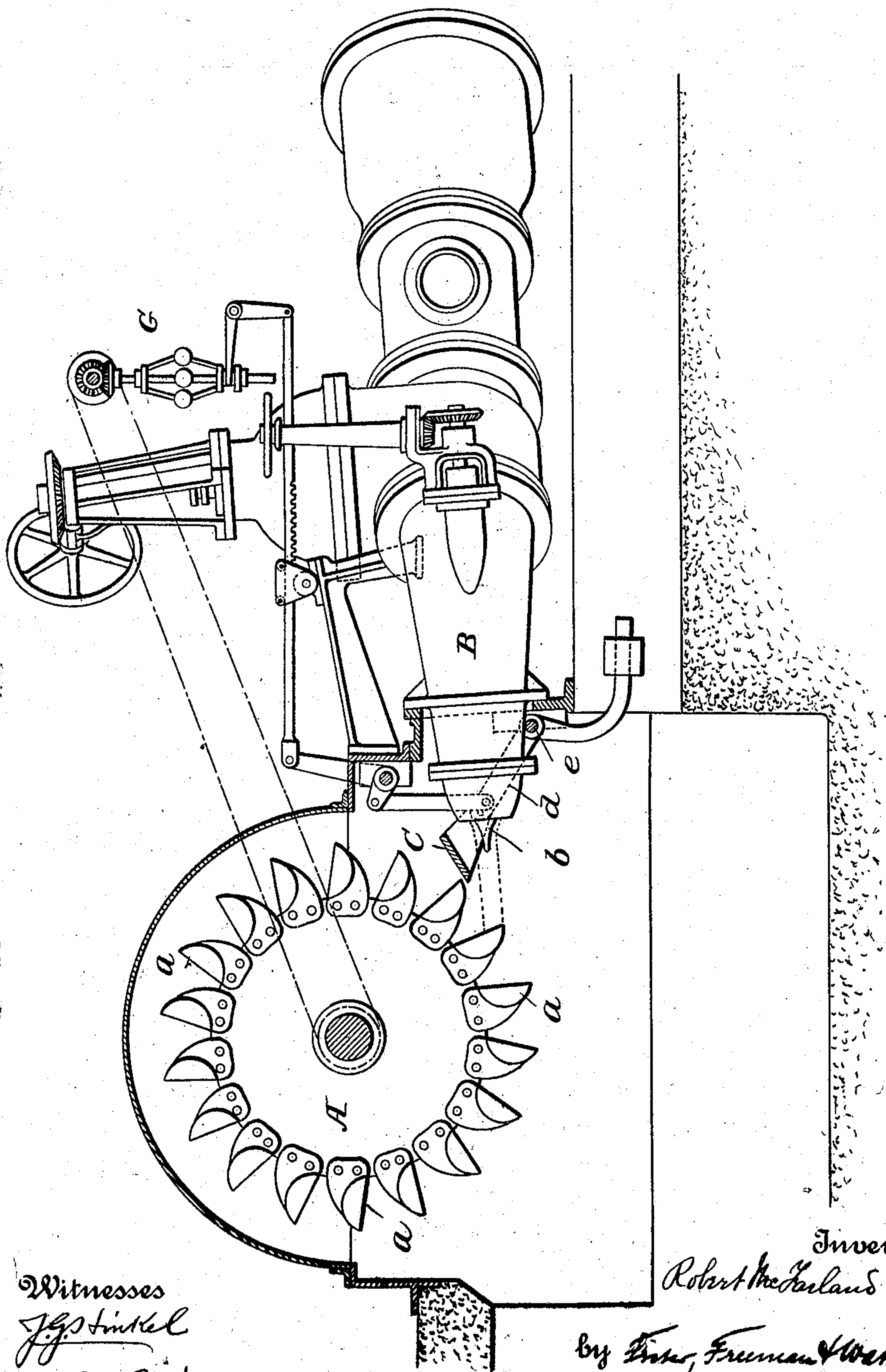


R. McF. DOBLE.
IMPACT WATER MOTOR.
APPLICATION FILED OCT. 4, 1906.

924,150.

Patented June 8, 1909.



Witnesses
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UNITED STATES PATENT OFFICE.

ROBERT McFARLAND DOBLE, OF SAN FRANCISCO, CALIFORNIA, ASSIGNOR TO ABNER DOBLE COMPANY, OF SAN FRANCISCO, CALIFORNIA.

IMPACT WATER-MOTOR.

No. 924,150.

Specification of Letters Patent.

Patented June 8, 1909.

Application filed October 4, 1905. Serial No. 281,288.

To all whom it may concern:

Be it known that I, ROBERT McFARLAND DOBLE, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Impact Water-Motors, of which the following is a specification.

In that class of impact water motors in which regulation is effected by deflecting the jet, it is common to swing the nozzle. It has also been common to cut off part of the jet by a blade swung to carry its inner edge to a greater or less extent into the jet and thus deflect a part of the jet. The former mode involves expensive construction; the latter is objectionable from the fact that heretofore the deflecting plate has always been carried upward from below the jet so that the force of the latter, or that part thereof which strikes the jet, tends to lift the plate and results in thus varying the force of the jet. The plate thus hinged below the jet also tends to fall away from the jet if there is any looseness in the connections with the governor, and a further objection is the rapid wear of the edge of the plate, requiring frequent renewals. I overcome these objections by so supporting the deflector that it will swing or move into the jet from above, as fully set forth hereinafter, and as shown in the accompanying drawing which shows a side elevation in part section of sufficient of an impact motor to illustrate my invention.

The wheel A is of ordinary construction and provided with the usual blades *a* against which the jet is thrown from the nozzle forming part of the casing B. The jet is so controlled as to compensate for major variations by a suitable device, as a valve *b*. To compensate for the minor variations in the load, the jet is deflected to a greater or less extent from the buckets *a* by a deflector C. As shown, the deflector is a plate inclined in respect to the jet, and so arranged as to approach the jet from above, its outer edge—that farthest from the nozzle—meeting the jet. This may be effected in different ways,

but as shown the plate is secured to a pivoted support, as a yoke *d*, hung by pivots *e* to the casing so as to swing to and from the jet from above, and this support is connected by any suitable connections with a governor G, which controls the position of the plate according to the load. For instance, when it is required to wholly or partially deflect the jet from the wheel, the support is lowered by the act of the governor and the plate is depressed, its extreme end passing down into the top of the jet and deflecting part or all of the latter from the wheel blades. With such an arrangement, whatever may be the back lash or slack motion, the deflector will not drop into the jet. On the contrary it will be held by the force of the water in its highest position, while any force carrying it farther into the jet will change the adjustment without lost motion. It will further be seen that as the inner edge of the plate is never presented to the jet there is no tendency on the part of the jet to carry the plate farther into the jet, and further there is no wear on the edge of the plate so that the latter does not have to be constantly renewed.

It will of course be understood that the deflector plate may be shaped in different ways, and also supported in different ways so as to present the outer edge first to the jet.

Without limiting myself to the construction and arrangement shown, I claim—

1. In an impact motor, the combination of a nozzle and a jet deflector movable to and from the jet from above the latter, substantially as set forth.

2. The combination with the nozzle of an impact motor, of a deflector and a movable support therefor arranged to support the deflector above the jet and to carry it to and from the latter, substantially as set forth.

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

ROBERT McFARLAND DOBLE.

Witnesses:

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