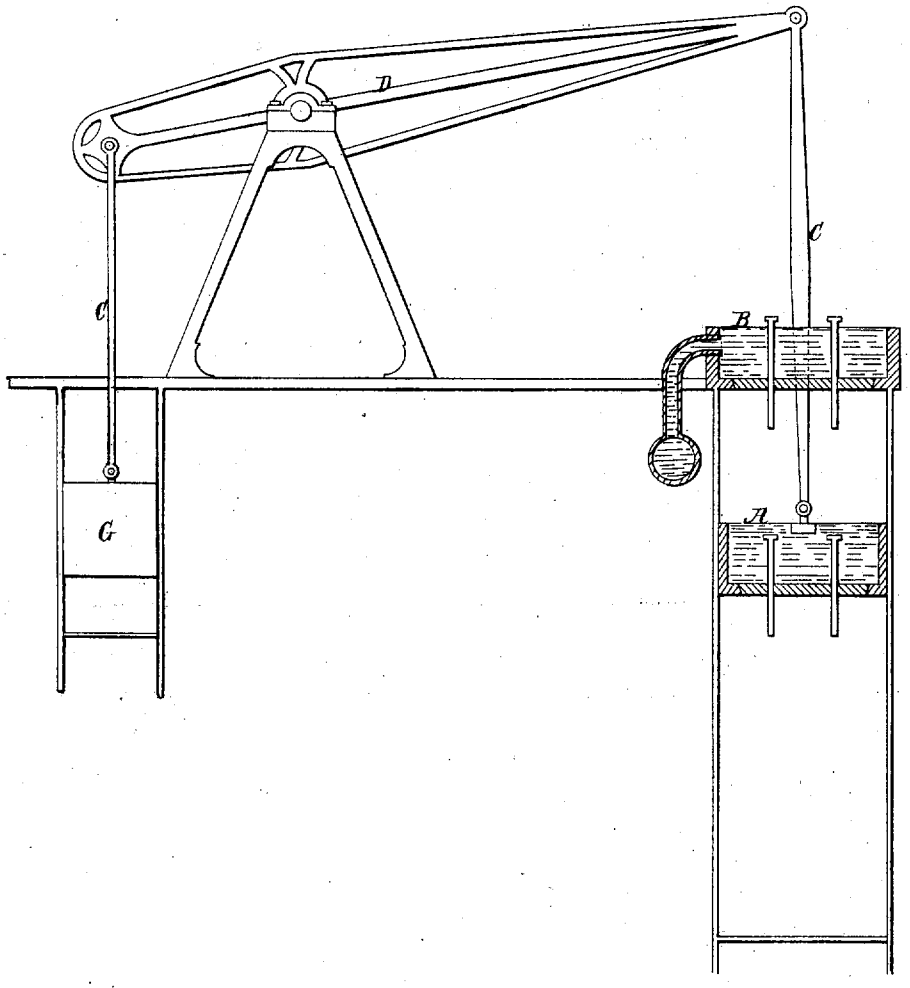
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Sheet 1 - 2 Sheets.

J. Abbott

Hydraulic Engine,

Patented Nov. 19, 1833.



N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

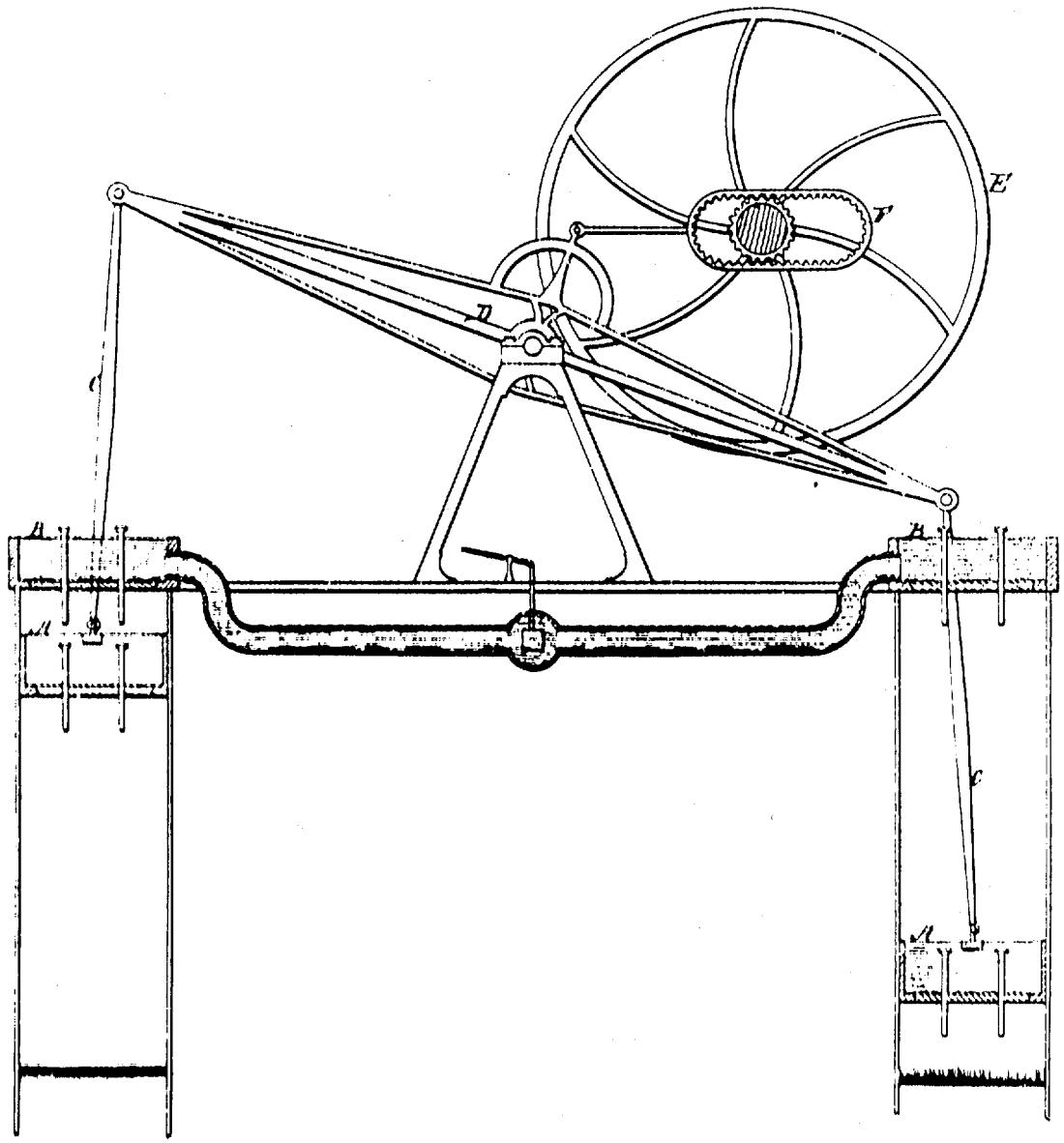
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Sheet 2 · 2 Sheets

J. Abbatt,

Hydraulic Engine,

Patented Nov. 19, 1833.



1780X John Abbott Nov 19, 1833

The Schedule referred to in these Letters Patent and forming part of the same containing a description of the mode of using water power invented by John Abbott himself of his improvement in the mode of using water power by a direct application of its weight to a lever beam or vibrating circle. To all to whom these presents shall come. Be it known that I John Abbott of Reading in the County of Middlesex and Commonwealth of Massachusetts Gentleman have invented a new mode of using water power by a direct application of its weight to a lever beam or vibrating circle illustrated by the accompanying Model and specified in the words following, to wit. My invention consists in applying the weight of water at any given height to one or more buckets or vessels suspended by chains, rods or like gears and connected with a lever beam or operating on a vibrating circle or segment of a circle. Said buckets or vessels being placed in a perpendicular direction in any open space and unconfined, but kept in their right line by guide rods and near a flume or any fountain of water. The water is let into one of the vessels or buckets at its height by the stopping the spout or discharging orifice of the flume or fountain and suffering it to rise a little and being full it descends. and the valve closes, and by its descent it raises the alternate or opposite bucket or vessel. As soon as the descending bucket reaches the bottom of the fall it by its weight against the bottom or against one or more rods on the perpendicular guides causes one or more valves, in the bottom or sides of the said bucket to be thereby opened and the water is immediately discharged or exhausted. The alternate ascension of the buckets or buckets alternately rising

to the lever beam or vibrating circle and as is shown in the accompanying model. the lever or vibrating circle (which is caused upon its own axis independent of the main shaft) and the suspending rods or line gears opposite upon the main shaft by the means of pinion and ratchet wheel. The ratchet wheel is fixed firmly on the main shaft, the pinion wheel revolves upon the same shafts and being acted upon alternately by the suspending rods or line gears, and striking a cog or spring on the ratchet keeps the main shaft rebalancing. A fly or any dimmeter may be attached to the main shaft to regulate motion as the case may require. For the purpose of overcoming any tendency to check the alternate motion when the rafters are falling or disengaging (being the point of time when a change of motion is effected) a pendulum may be introduced as in the accompanying model, the vibration of which gives additional force to the required motion, I do not consider the pendulum as indispensible but practice will determine the point. By this invention a great power is obtained by a less quantity of water than by any other means known to the inventor and if properly constructed there need be no waste of water, and there is great economy, for a small excavation only being required to admit a free passage up and down of the buckets and a race way to discharge the water, and the motion from the main shaft communicated by the vibrating circle or lever beam, may be by timber immediately to the running gears of a mill without the expense of the heavy gears usually attended to water wheels. The use of this power may be indefinitely extended in addition to the application to mill gears, it may be applied as a moving power to machinery of all kinds where by the

according radial to an elevation by any number of pinions (equal to one three pinion for instance) may be given by the use of my hydraulic lever, an inclined beam in proportion to its height, and it may also be advantageously used for the raising of weights in warehouses and other places where a fountain could be had. Whatever may have been described in the foregoing specification, my whole invention consists, viz, and all that I claim is the application of the weight of water in a perpendicular line, to turn one or more wheels, moving in an open space, connected with one or more levers beams or beams of one or more vibrating circles or segments of a circle, so as to communicate motion, and operate as a substitute for the common water wheel, And also my invention in the mode of gearing as is herein described, consists in applying to any shaft one or more ratchet or pinion wheels, connecting with and receiving motion from the gears either perpendicular horizontal or at an angle, the ratchet wheel being firmly fixed on the main shaft has a motion independent of the bevil gears, and is operated upon by the pinion (which revolves on a lady shaft) when such operation is required, by means of a band fixed on the pinion, which causes the ratchet to drive the main shaft, as the bevil gears may rise and fall or in any way operate upon it and this improvement in the mode of gearing, may be applied to steam engines generally. In testimony that the above is a true specification of my said invention as above described. I have hereto set my hand this eighteenth day of September eighteen hundred and thirty three

Witnesses

Thomas D Dey

Matthew Vanderbilt

John [illegible]