No. 52,762. PATENTED FEB. 20, 1866.

H. SOGGS.

WATER WHEEL.

Fig. 3

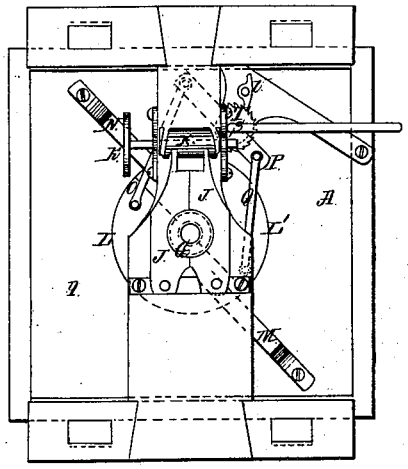


Fig. 4

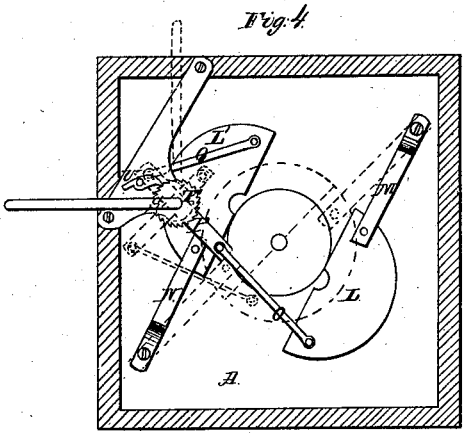


Fig. 1.

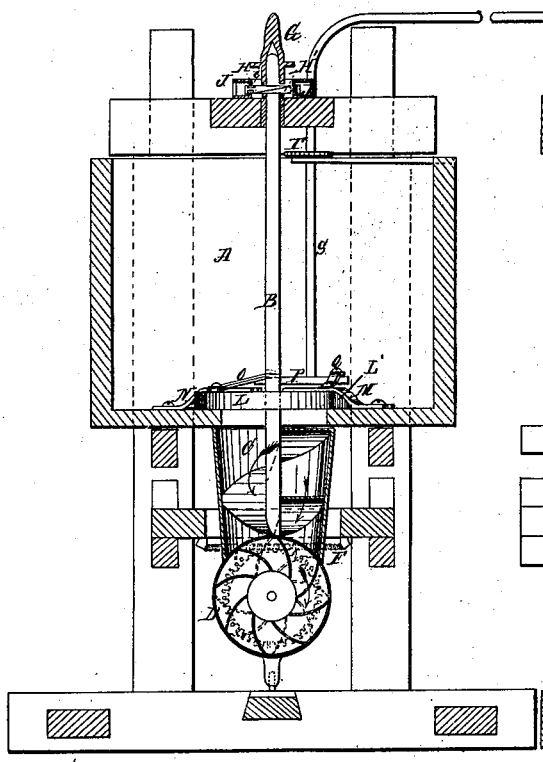
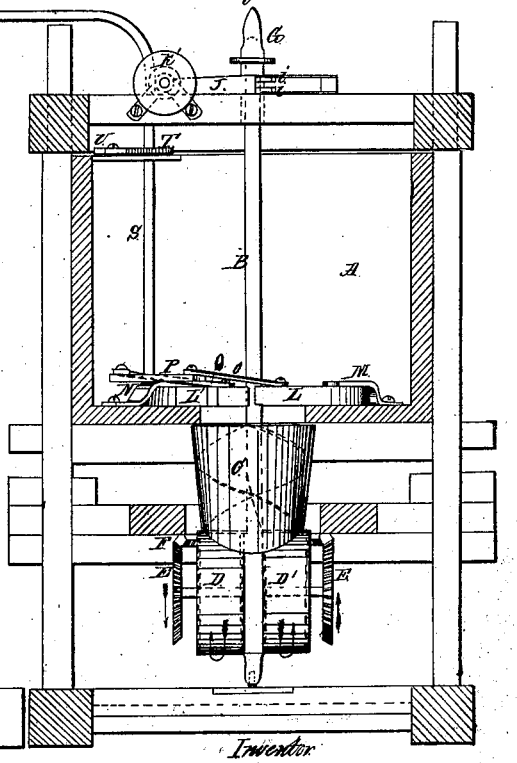


Fig. 2.



Witnesses:
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UNITED STATES PATENT OFFICE.

HENRY SOGGS, OF COLUMBUS, PENNSYLVANIA.

IMPROVEMENT IN WATER-WHEELS.

Specification forming part of Letters Patent No. **52,762**, dated February 20, 1866.

To all whom it may concern:

Be it known that I, HENRY SOGGS, of Columbus, in the county of Warren and State of Pennsylvania, have invented a new and Improved Compound Double-Acting Water-Wheel; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure I is a vertical section. Fig. II is a sectional elevation. Fig. III is a top plan. Fig. IV is a plan of gate working on the bottom of the flume.

Letters of like name and kind refer to like parts in each of the figures.

A represents the flume, which is of common construction and stands over the water-wheels.

B is a vertical spindle or shaft, which passes through the flume and supports the water-wheels at its lower end, and is intended to carry a mill-stone at its upper end.

C is a screw-wheel of ordinary construction, and is connected to the lower part of the shaft B in a manner to receive the water from the flume.

D D′ are overshot wheels, each revolving upon its own shaft or axle, and each attached to the vertical shaft B in a manner to revolve with it, and at the same time communicate the power of their axial revolutions to the driving of the vertical shaft B. This power is communicated by means of the spur-wheels E, fixed on each axle of the overshot wheels and engaging with the stationary circular rack F. These overshot wheels are connected to the vertical shaft immediately below the screw-wheel, so that the water from the screw-wheel is discharged into the overshot wheels. By this arrangement I get a double use of the water—first, on the screw-wheel, and second on the overshot wheels, for propelling purposes.

Upon the top of the shaft B is a cap, G, for the support of the upper mill-stone. The lower end of this cap rests upon the wedges H H′, and may be raised or lowered by a movement of the wedges. These wedges have grooved heads, as shown, which grooved heads work between circular flanges *i*, which project downwardly and upwardly within and form a part of the expansible jaws J.

The ends of the jaws J work in the worm K, so that by turning the worm right or left the jaws will be expanded or contracted in a manner to move the wedges to and from each other, and thereby raise and lower the cap, and with it the mill-stone.

K′ is a hand-wheel on the worm-shaft for turning the same.

My improved gate consists of two half-circles of wood, L L, placed upon the bottom of the flume and working over the aperture through which the water is discharged into the screw-wheel. These half-circles are worked by a series of levers or bars, M N O P Q, and vertical shaft S, so arranged as to give them parallel movements outwardly and inwardly, and consequently to open and close in a manner to regulate the quantity of water to be used on the wheels.

The lever M is pivoted to the half-circle L and to the bottom of the flume, as shown. The lever N is pivoted to the bottom of the flume and to the half-circle L′, as shown. The lever O is pivoted to the half-circle L and cross-bar P. The lever Q is pivoted to the half-circle L′ and to the cross-bar P, as shown in the drawings, and the cross-bar P is fastened at its center to the upright shaft S, so that when the upright shaft is turned to the right or to the left the half-circles L L′ will, by the operation of this arrangement of the levers be made to recede from or approach each other, (as may be,) thus enlarging or diminishing the supply of water to the wheels, as may be required.

The shaft S is held as placed by means of the pall T and ratchet-wheel U.

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

1. The combination and arrangement of the screw-wheel C and overshot wheels D D′, including the gearing thereof, with the shaft B, so as to admit of a double use of the water, substantially as described.

2. The combination of the wedges H H′ with the jaws J and cap G, for the purpose of raising and lowering the mill-stone, substantially as set forth.

3. The adjustable gate composed of the half-circles L L′, and operated by the shaft S and arrangement of levers, substantially as described.

HENRY SOGGS.

Witnesses:

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