(No Model.)

S. S. RICHARDSON.

WATER MOTOR.

No. 289,560. Patented Dec. 4, 1883.

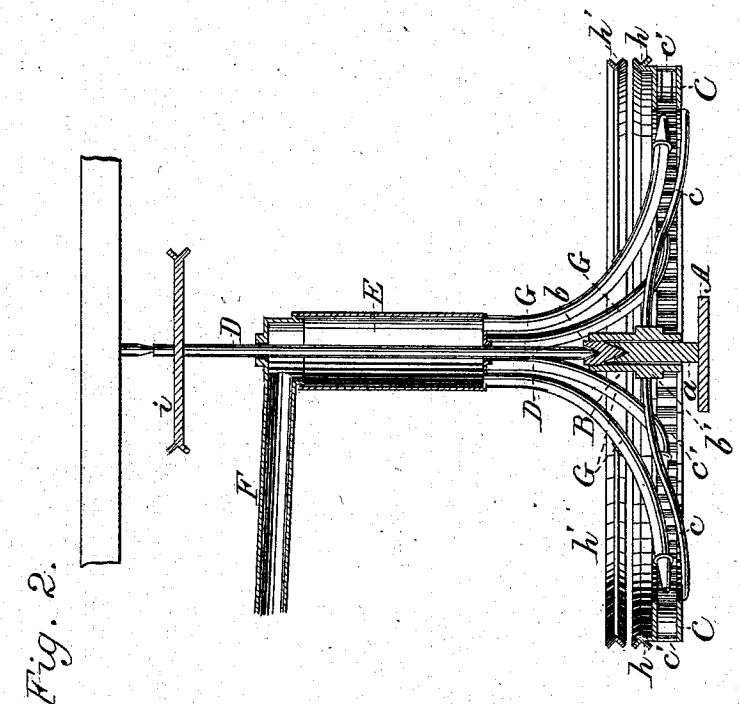


Fig. 2.

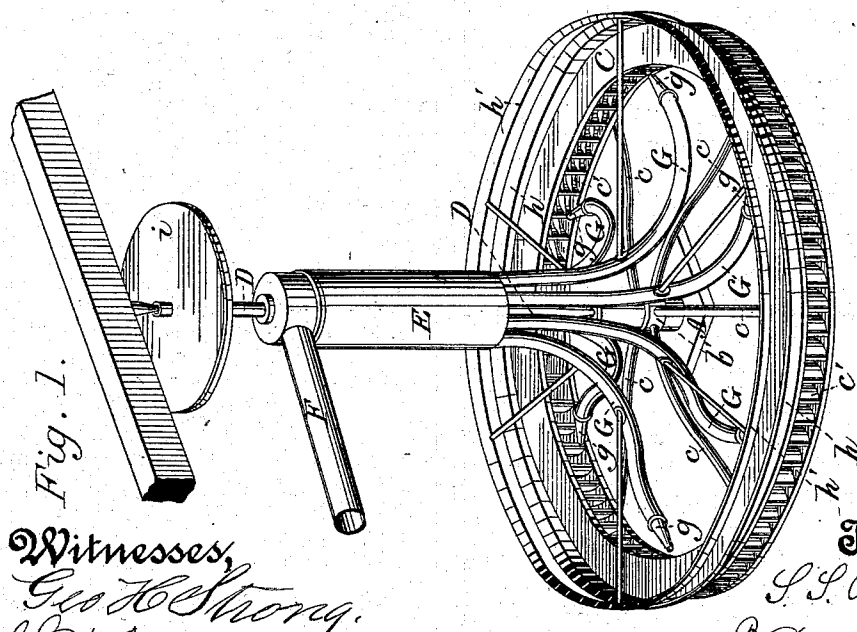


Fig. 1.

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UNITED STATES PATENT OFFICE.

SAMUEL S. RICHARDSON, OF HAPPY CAMP, CALIFORNIA.

WATER-MOTOR.

SPECIFICATION forming part of Letters Patent No. 289,560, dated December 4, 1883.

Application filed March 13, 1883. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL S. RICHARDSON, of Happy Camp, county of Del Norte, State of California, have invented an Improved Water-Motor; and I hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to a new and useful water-motor; and it consists in a centrally-mounted water-wheel, and in a series of curved spouts so mounted in connection with said wheel as to direct their discharge against the wheel to rotate it in one direction, while they themselves rotate in an opposite direction, and in certain details of construction necessary to accomplish this result, all of which will hereinafter fully appear.

The object of my invention is to combine the power of the ordinary rotating spouts with that of a water-wheel by utilizing the waste of the former, whereby I am enabled to provide a powerful and effective device.

Referring to the accompanying drawings, Figure 1 is a perspective view of my water-motor. Fig. 2 is a vertical section of the same.

A represents a foundation, in which is secured a standard, *a*.

B is a sleeve having a bearing, *b*, screwed in its top and mounted upon the standard *a*, whereby the sleeve is pivoted to revolve. Upon the sleeve is secured a collar, *b'*, from which the arms *c* of the water-wheel C radiate. This wheel consists of two rims, one above the other, having intervening buckets, *c'*. These buckets are formed as shown in Fig. 1, being laterally concaved. Mounted in the top of bearing *b* is a shaft, D, having secured upon it a water-jacket, E.

F is an elbow above the water-jacket, and the shaft D passes through its top in a suitable stuffing-box, so that both shaft and water-jacket may revolve, while the elbow remains stationary. The water-jacket has a bottom, out of which extend pipes G. These pass down and are bent outwardly, and all are curved backwardly, and provided with spouts or nozzles *g*, directed from inside of the water-wheel against the faces of the buckets *c'*.

The operation is as follows: Water under pressure is admitted through the elbow and passes down through jacket and pipes G. In its discharge from nozzles *g* it causes the backward rotation of the pipes and jacket, upon the well-known principle of Barker's or Whitelaw's mill. The water which these spouts discharge is directed into the buckets *c'*, causing the opposite rotation of wheel C. In order to deliver the power of these devices, I connect with the rim of the wheel C a pulley, *h*, and I connect with the pipes G a pulley, *h'*, by means of arms, as shown. The power from these pulleys may be transmitted to the same shaft by crossing the belt of one. Upon top of the shaft D, I place a pulley, *i*, to which any suitable power may be applied in case it should be necessary to augment the revolution of the jacket and pipes. This arrangement of parts utilizes the power ordinarily wasted by the discharge of the rotating mill and gives a combined power, which may be used for any suitable purpose.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The centrally-mounted water-wheel C, having buckets *c'*, and a central hub or sleeve, B, having a top bearing, *b*, in combination with the water-jacket E, having shaft D mounted in said bearing, the curved pipes G, having nozzles *g*, and the stationary elbow F, all arranged and operating substantially as herein described.

2. The vertically-mounted water-jacket and curved delivering-pipes G, in combination with the pulley *h'*, connected with said pipes, substantially as herein described.

3. The centrally-mounted water-wheel C, having buckets *c'*, and a hub or sleeve, B, having a top bearing, *b*, in combination with the water-jacket E, having a shaft, D, mounted in said bearing, the curved pipes G, having nozzles *g*, the stationary elbow F, through which shaft D extends, and the pulley *i* on said shaft for applying auxiliary power, substantially as herein described.

In witness whereof I hereunto set my hand.

SAMUEL S. RICHARDSON.

Witnesses:
E. W. SKELTON,
J. H. BLOOD.