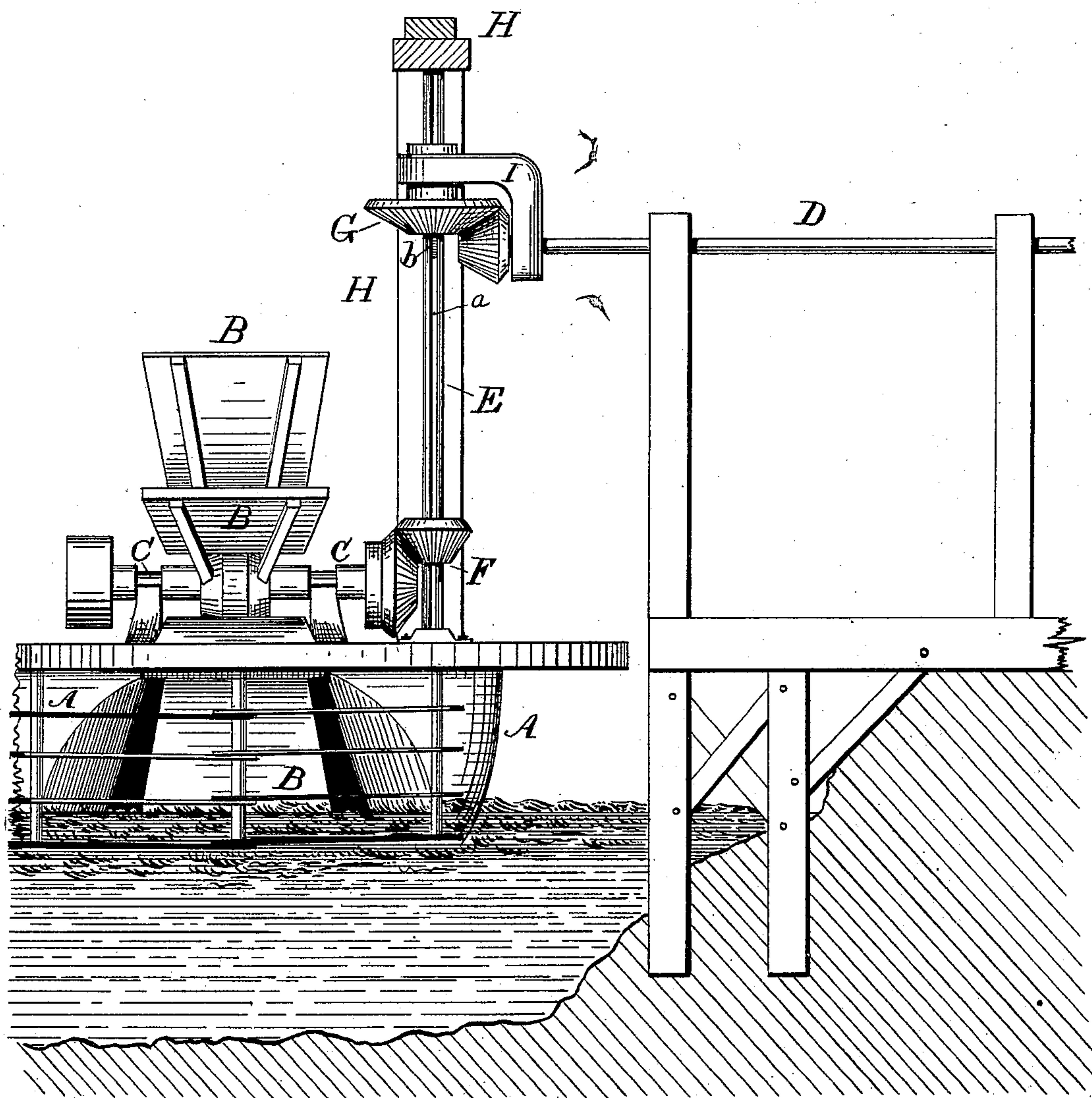


(No Model.)

D. J. HARRELL.
FLOATING MILL POWER.

No. 245,489.

Patented Aug. 9, 1881.



WITNESSES:

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DAVID J. HARRELL, OF COCHRAN, GEORGIA.

FLOATING MILL-POWER.

SPECIFICATION forming part of Letters Patent No. 245,489, dated August 9, 1881.

Application filed February 15, 1881. (No model.)

To all whom it may concern:

Be it known that I, DAVID J. HARRELL, of Cochran, in the county of Pulaski and State of Georgia, have invented a new and Improved Floating Mill-Power; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention relates to an improvement in such motors or mill-powers as are placed on scows moored in a stream and adapted to be driven by its current. I employ a rotating current-wheel provided with floats or buckets, and placed vertically in the usual way between two boats or floating structures that have like buoyancy and are rigidly connected, so as to move together as the stream rises or falls. I provide an automatic connection between such wheel and the machinery of a mill or factory located on the contiguous bank of the stream, so that no interruption in the operation of the machinery can occur by variation in the height of the water.

The construction and arrangement of parts embodying my invention are as hereinafter described and claimed.

In the accompanying drawing, forming part of this specification, I have represented the connection and relation of parts—that is to say, of the current-wheel, boats, gearing, and shafting.

The letters A A indicate two scows, which are rigidly connected and placed longitudinally parallel but separated by a space of sufficient width to accommodate the undershot current-wheel B. The latter is constructed with radial paddles and mounted upon a horizontal axis, C, rotating in bearings secured to the decks of the respective scows A A. Said scows are moored in a stream, in a direction parallel to its course, opposite the point where the mill or other machinery to be driven is located, and are provided with a wedge-shaped skeleton bow, to enable them to ward off drift-wood and yet allow the water to flow with due rapidity through the wheel-space between them. The wheel B will obviously be rotated by the water impinging on the paddles, and its speed be determined by the swiftness and

consequent force of the current. The power thus furnished is utilized and transmitted to the mill machinery by a line of horizontal shafting, D, which is geared with the vertical shaft E, having its bearings in a suitable framework, H, secured to the platform of the scows. Rotation is imparted to shaft E directly from the axis C of the current-wheel by means of the bevel-gearing F. The gear G is adapted, by a spline-connection, to slide up and down on the shaft E, and also to rotate therewith—that is to say, said shaft has a lengthwise groove, a, in which a key, b, of the gear G fits, as shown. Said gear being attached to a fixed bracket, I, the shaft E slides through it as the scows A rise or fall with the stream. Thus, whether the water be high or low, the gear G will remain in mesh with the pinion of the shaft D, and will constantly rotate, so that the transmission of power from the wheel B to the machinery of the mill standing on the bank will continue uninterrupted by any variation in the level of the stream.

On the outer end of the wheel-axis C is mounted a pulley, from which power may also be taken by means of belting, when required.

As before stated, the scows A are moored in the stream; but it is apparent they must be allowed only true vertical movement as the stream rises and falls, and no movement laterally or in the arc of a circle. As a means of insuring vertical movement, piles may be driven, to serve as guides, and the scows adapted to slide between them, while prevented from lateral or endwise movement.

Having thus described my invention, what I claim as new is—

The combination, with a floating current-wheel whose axis is provided with a bevel-gear and a line of shafting suitably arranged for transmitting power to other machinery, of a vertical shaft and a gear having a spline-connection therewith, substantially as shown and described, to operate as specified.

DAVID JOS. HARRELL.

Witnesses:

ABEL WALTER,
T. R. HENDRICKS.