F. Mehrman,

Water-Wheel.

No. 92,862. Patented Jul. 20. 1869.

Fig. 1.

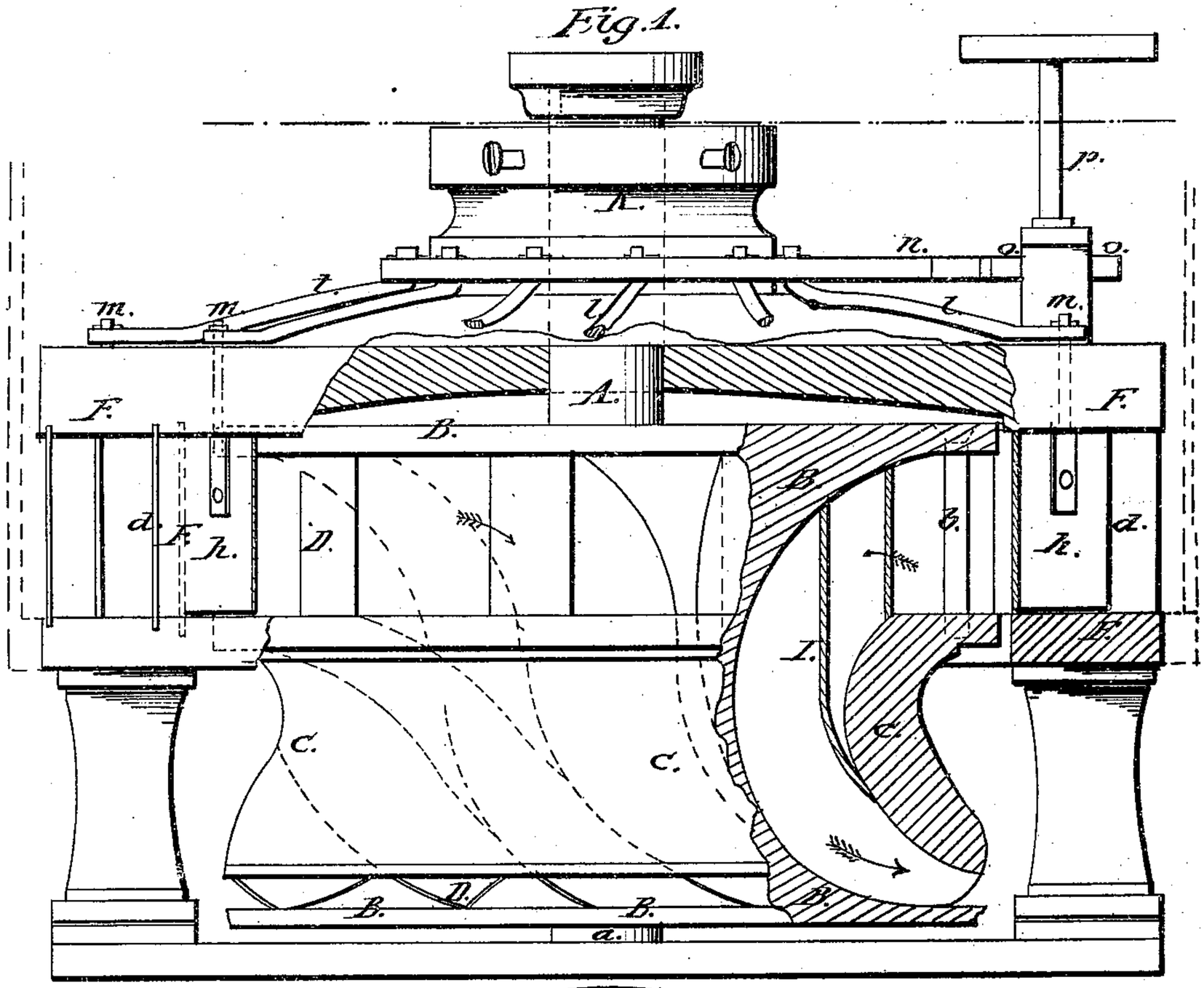


Fig. 2.

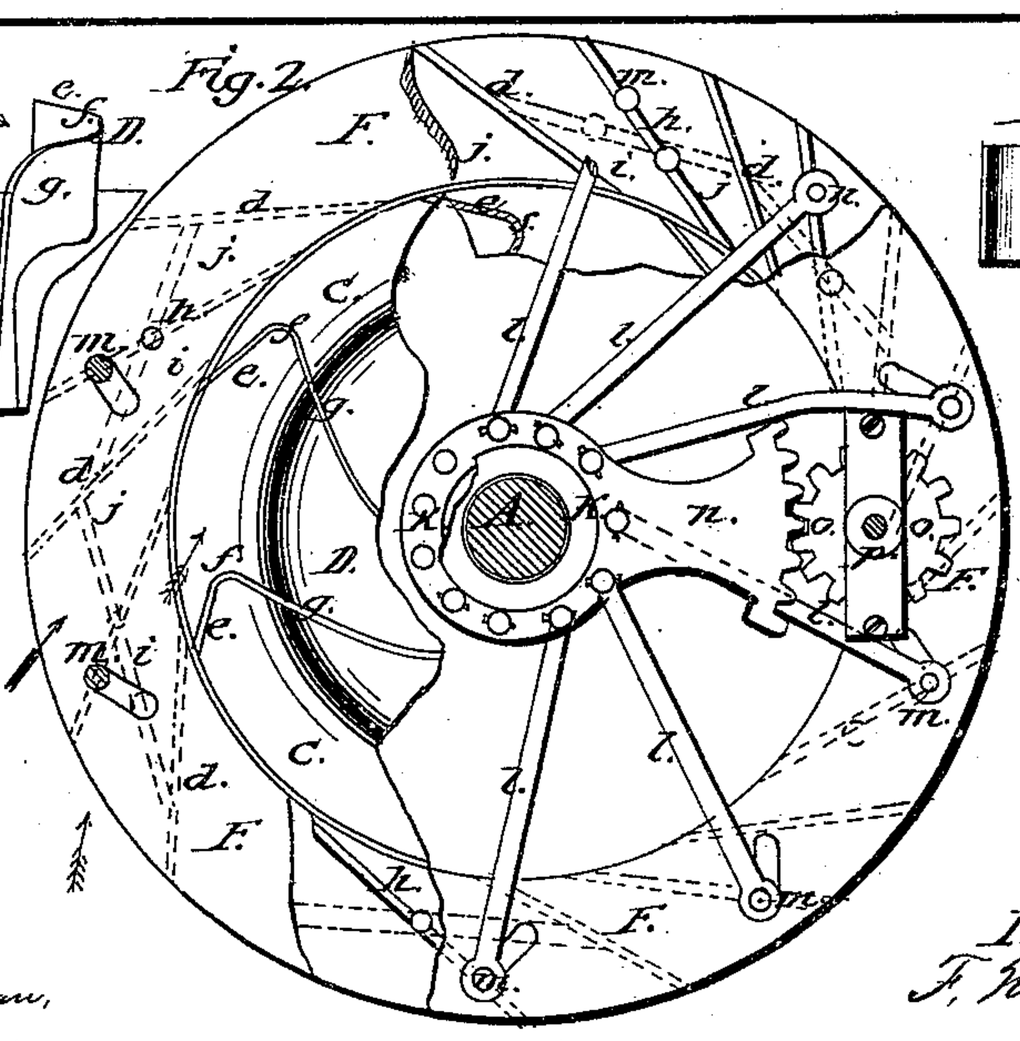


Fig. 3.

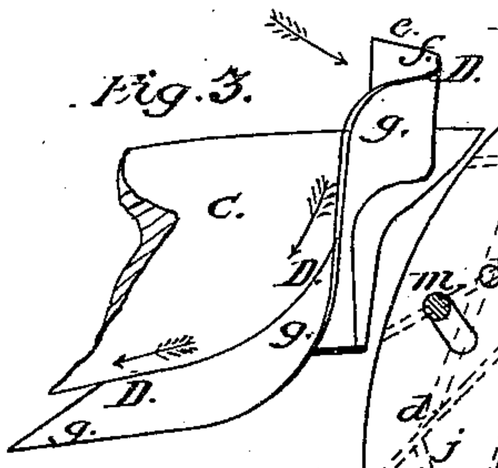
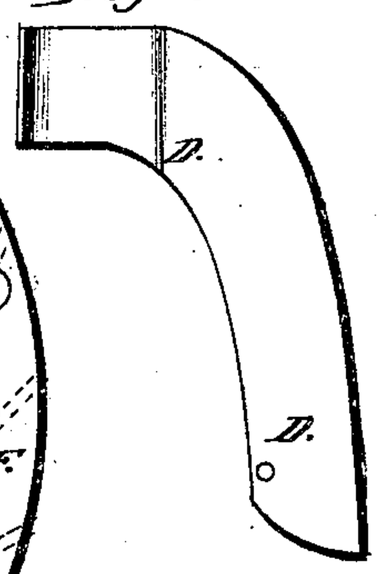


Fig. 4.



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FERDINAND MEHRMANN, OF FOUNTAIN CITY, WISCONSIN.

Letters Patent No. 92,862, *dated July* 20, 1869.

IMPROVEMENT IN WATER-WHEELS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, FERDINAND MEHRMANN, of Fountain City, in the county of Buffalo, and State of Wisconsin, have invented a new and useful Improvement in Water-Wheels; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 represents a side view, partly in section, of my improved water-wheel.

Figure 2 is a plan or top view, partly in section, of the same.

Figure 3 is a detail perspective view of one of the buckets.

Figure 4 is a detail side view of one of the buckets.

Similar letters of reference indicate like parts.

This invention relates to an improved water-wheel, which is so constructed that the power of the water will be entirely exhausted, and that the whole apparatus will be very effective, and operate most satisfactorily.

The invention consists in the peculiar construction of the hub and buckets, as will be hereinafter more fully described.

A, in the drawings, represents the shaft or spindle of the wheel.

It rests on a suitable step, *a*, and is, on top, guided in a suitable box or bushing, attached to a stationary frame.

The shaft is surrounded by a spool-shaped block, B, which forms the core of the wheel, and which is large on top and bottom, and narrow in the middle, as indicated by section in fig. 1.

By means of bars or rods *b b*, the rim C of the wheel is suspended from, and held on the core B.

The inner side of the rim is convex, to correspond about with the concave edge of the core, as shown in fig. 1, so that an annular space is left between the core and rim, representing a ring, with convex inner and concave outer edge.

Within this space are arranged the wheel-buckets.

These buckets D D are shaped as in fig. 3, to conduct the water from the upper to the lower part of the space in the wheel.

Each bucket is at its upper outer edge, bent outward, as at *e*, about in line with the partition *d* of the chute F, fig. 2, so that the direction of the water may not be suddenly interrupted when it enters the wheel.

Then the bucket makes a turn of about ninety degrees at *f*, and receives the water against its body *g*.

The body *g* of the bucket then gradually slopes downward in the wheel-space, but not only downward, also outward, as will be understood from fig. 3.

The water thus entering from the outside, the space between the rim and core of the wheel, on top, will act on the buckets, and will be discharged again to the outside, through the lower opening of the said space in the wheel.

The upper opening of the space in the wheel is surrounded by the stationary chute F, in which as many stationary partitions *d d* are arranged as there are buckets in the wheel.

Between every two partitions *d* is pivoted, to the top and bottom plates of the chute, a gate, *h*, which can be swung open to let the water into the wheel, or closed to keep it out.

When the gate is swung open, as in fig. 2, it will form two water-passages, *i* and *j*, between every two partitions *d*, the size of the passages being regulated by the position of the gate. When the gate is closed, as by red lines in fig. 2, the two passages will be closed.

The gates can be operated by means of an oscillating ring, K, arranged around the shaft A, and connected, by means of rods *l l*, with pins *m*, projecting through slots in the top plate of the chute from the gates.

The ring K has a toothed segment *n* projecting from it and meshing into a pinion, O, which can be turned by a suitable handle, *p*.

Having thus described my invention,

I claim as new, and desire to secure by Letters Patent—

The core of the wheel, formed by the spool-shaped block B, and the rim C, supported from the upper flange of the block, the annular space between the block and rim being provided with the buckets D, of the form shown in fig. 3, all operating as described, for the purpose specified.

FERDINAND MEHRMANN.

Witnesses:

FREDRICK KOEPPEN,

FERDINAND FETTER.