G. A. MYERS.
Wind-Mills.

No. 151,311. Patented May 26, 1874.

Fig: 1.

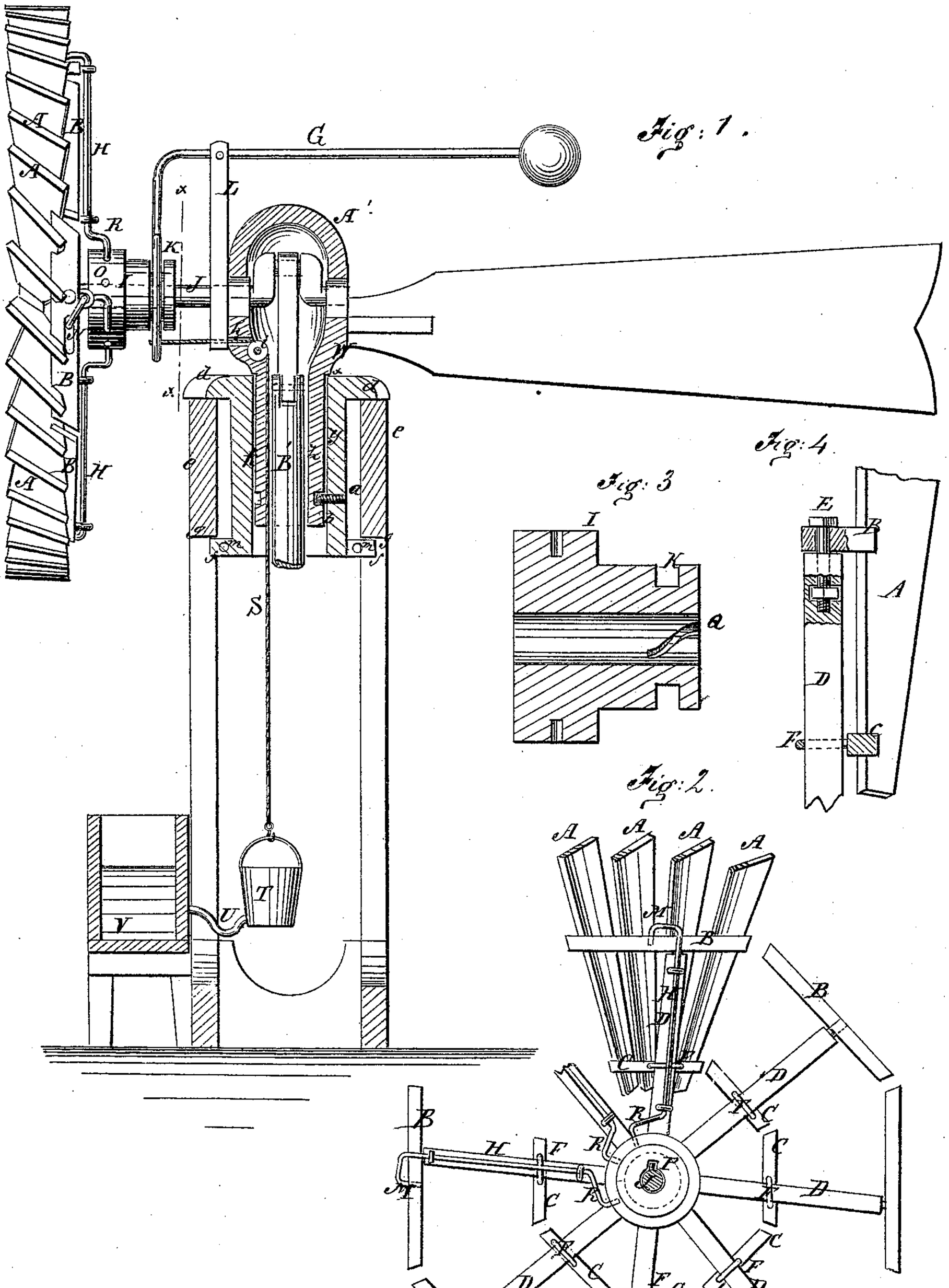

Fig: 3

Fig: 4

Fig: 2.

Witnesses:

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UNITED STATES PATENT OFFICE.

GEORGE A. MYERS, OF SCHOOLCRAFT, MICHIGAN.

IMPROVEMENT IN WINDMILLS.

Specification forming part of Letters Patent No. **151,311**, dated May 26, 1874; application filed October 18, 1873.

To all whom it may concern:

Be it known that I, GEORGE A. MYERS, of Schoolcraft, in the county of Kalamazoo and State of Michigan, have invented a new and Improved Windmill, of which the following is a specification:

The invention will first be fully described, and then pointed out in the claims.

Figure 1 is a sectional elevation of my improved machine; Fig. 2, a cross-section on the line *x x* of Fig. 1. Fig. 3 is a detail of the wind-wheel, and Fig. 4 is a section of the collar on the crank-shaft for connecting the vane-sections and the weighted lever.

Similar letters of reference indicate corresponding parts.

A represents the vanes of the wind-wheel, which are connected in groups of, say, four to short cross-bars B and C, so as to form a section of the wheel. The outer cross-bar is pivoted a little one side of its middle to the end of the wheel-arm D by a bolt, E, and the inner bar is yoked to said arm by a staple, F, so that the section can swing around out of the wind when the force of the wind rises above the limit which it is to bear, which is governed by the weighted lever G, whose office it is to hold the vanes in the wind. Each section is connected by a double-cranked rod, H, with a sliding hub or collar, I, on the crank-shaft J, to which the weighted lever G is connected, the said lever being cranked and crotched, so that it embraces the hub in a groove, K, so that being pivoted in the upright L, it tends to push the hub toward the wheel and hold the vanes in the wind. The cranked rods are pivoted on the arms of the wheel, and one end is connected to the cross-bar B by the bent end M in a stock, N, and the other end is connected to the hub by entering a hole, O. The hub is fitted to slide on the shaft along a stud-pin, P, and the groove Q for said stud-pin is made spiral to allow the hub to turn at the same time that it slides to accommodate the swing of the cranks R of the rods H.

It is designed to have the weight adjustable on the lever in practice, so that the wheel may be gaged for more or less power, according to the work to be done.

The lever has a chain, S, suspended from the end connected with the hub, and holding a bucket, T, which is connected near the bottom by a flexible tube, U, with the water-trough V near its bottom, so that when the trough has been filled by the pump the weight of the bucket, which fills from the trough at the same time, will pull the collar back and automatically stop the wheel, and when the water is exhausted, the weighted lever will shift it back again, so that the wind will automatically set the machine in motion again. The crank-shaft J is mounted on the top of a hollow casting, W, which rests at the shoulder X on the top of the cast-metal socket-piece Y, and has a tubular extension, Z, fitting in said socket-piece, and secured against being lifted out by the wind by the set-screw *a* screwing into the annular groove *b*, so as to allow the casting W to turn freely. The casting W has a cap, A′, fitting on it above the crank-shaft, to exclude snow and rain from the tubular part of the casting, in which the pump-rod B′ works, to prevent it from freezing fast. The part Z has a hole, *h*, through one side near the top, by which the chain which suspends the bucket T enters to pass over the pulley *i* for suspending it, which must be on the casting to revolve with it and the wheel, and from said wheel there is a groove, *k*, extending to the bottom, to provide space for the chain in which it will be protected from the pump-rod.

The socket-piece Y is made in two parts, divided vertically and bolted together, as shown at *m*, and has a flange, *d*, at the top, resting on and bolted to the top of the standard *e*, and at the bottom it has lugs *f*, which turn under the shoulders *g* of the standard, and assist the bolts in the flange *d* at the top to hold the socket-piece on the top of the standard.

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

1. The hollow casting W, for the support of the crank-shaft, having the shoulder X, extension Z, annular groove *b*, and the cap A′, substantially as specified.

2. The hollow casting W, having the hole *h*, pulley *i*, and the groove *k*, and the weight-chain S arranged in said casting, substantially as specified.

3. The socket-piece Y, made in two parts, bolted together, and having the flange *d* and projection *f*, in combination with the standard *e*, substantially as specified.

GEORGE A. MYERS.

Witnesses:
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