D. C. STOVER.

Wind-Mill.

No. 165,272. Patented July 6, 1875.

Fig. 1.

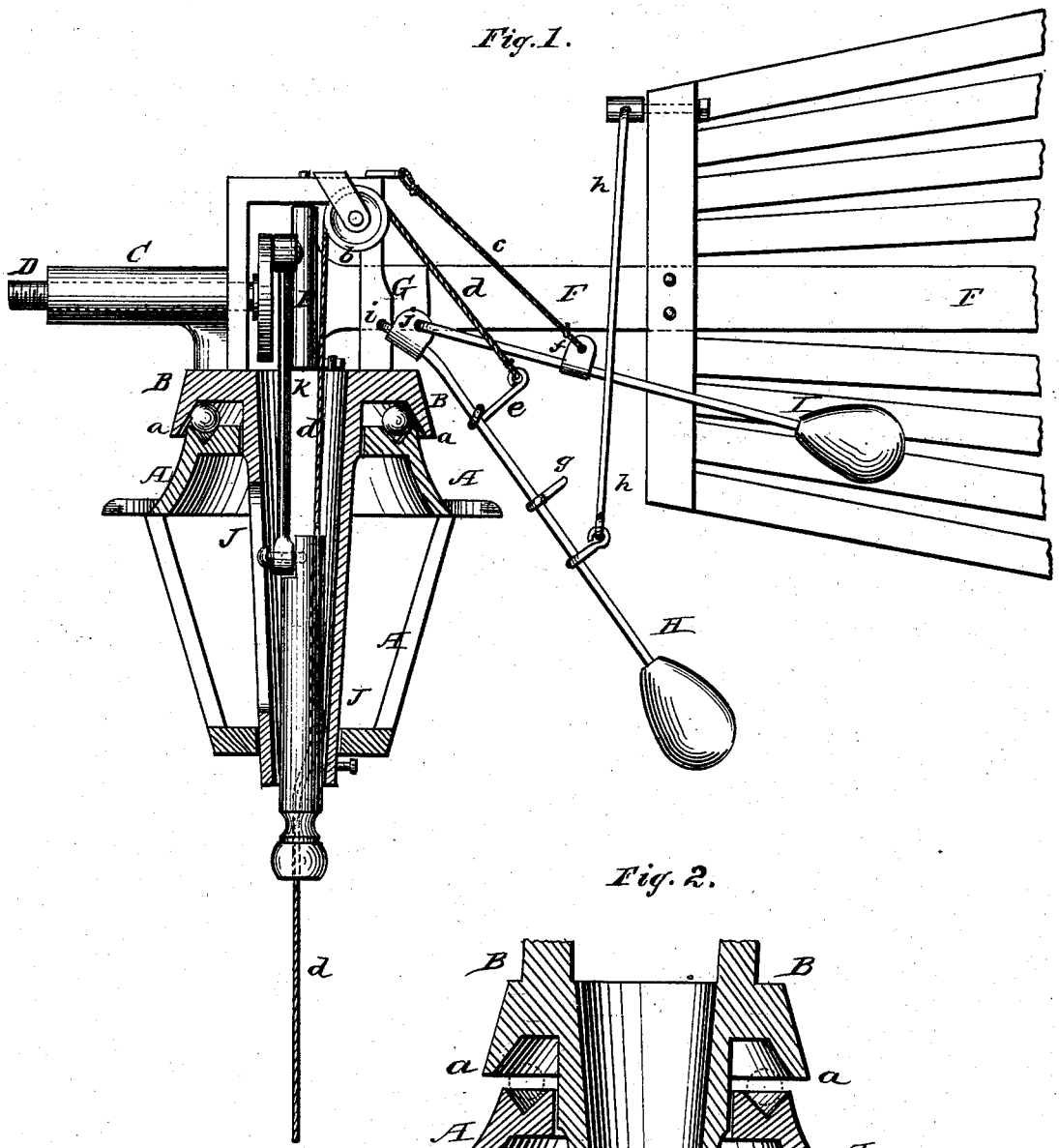
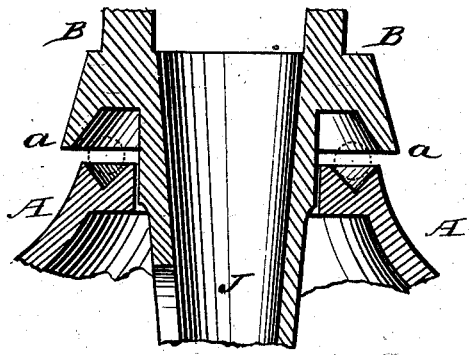


Fig. 2.



WITNESSES:
P. C. Dieterich
K. E. Scott

INVENTOR:
Danl. C. Stover
per.
C. H. Watson
ATTORNEY.

UNITED STATES PATENT OFFICE.

DANIEL C. STOVER, OF FREEPORT, ILLINOIS.

IMPROVEMENT IN WINDMILLS.

Specification forming part of Letters Patent No. **165,272**, dated July 6, 1875; application filed May 8, 1875.

To all whom it may concern:

Be it known that I, DANIEL C. STOVER, of Freeport, in the county of Stephenson and State of Illinois, have invented new and useful Improvements in Windmills, of which the following is a full description, reference being had to the accompanying drawings, in which—

Figure 1 is an elevation, with the head partly in section; Fig. 2, a detail in section.

The object of this invention is to improve the windmill patented to E. and D. C. Stover on the 3d day of December, A. D. 1872; and its nature consists in providing the bearing-balls with a covering to protect them from storms, and in providing the vane with a secondary weight, as hereinafter more fully described.

In the drawings, A represents the top or cap of the supporting frame-work; B, the revolving head; C, the tube or bearing for the wheel-shaft; D, the wheel-shaft; E, head or shaft, to which the vane is pivoted; F, the vane-bar; G, the post or connecting-bar; H, the primary weight; I, the secondary weight; J, the tubular extension of the revolving head, giving it a lower bearing; *a*, the protecting-flange; *b*, an anti-friction pulley; *c*, the cord or chain supporting the secondary weight in position; *d*, the cord or chain for elevating the primary weight by hand; *e f*, the couplings for connecting the cords *c d* with the bars or levers of weights; *g*, a pin or stop on the bar of the weight H; *h*, the rod connecting the weight H with the vane; *i*, the pivot of the bar of the weight H; *j*, the pivot of the bar of the weight I; *k*, the pitman.

The head A may be constructed and attached to the frame-work as described in the patent hereinbefore named, or in any other suitable manner.

The revolving head B is constructed similarly to the one described in the said patent, except that it is provided with a protecting-flange, *a*, which projects over and sufficiently far below the opening for the anti-friction balls to protect them from storms, and to prevent water or snow from getting into the groove in which the balls are placed, so as to keep them from oxidizing and from becoming locked by frost or dirt. The revolving head is provided with a weight, H, which is constructed and operates substantially the same as described in the former patent, except that there is attached to its bar a stop or arm, *g*, which projects from the side sufficiently far to engage with the arm of the weight I, when raised sufficiently to come in contact therewith. The secondary weight I is pivoted at *j*, and is supported in position by the cord, chain, or rod *c*, and this secondary weight comes into operation only when the winds are strong. In light winds the weight H alone controls the vane, and gives it an easy and light movement up to the point where the arm *g* comes in contact with the bar or lever of the weight I. In moving beyond this point the vane lifts the secondary weight I, which requires a stronger pressure, and the two weights, when together, have sufficient play to permit the vane to turn far enough to throw the wheel out of the wind. This extra weight I starts the vane back, or starts the wheel into the wind with a strong movement, so that there is no liability of the wheel remaining out of the wind or becoming stuck when at its farthest point.

In order to throw the wheel out of the wind and hold it in that position, the cord *d*, which is brought down so as to be within reach, is pulled, and, the rod *h* being a stiff rod, the vane will be thrown around and held by fastening the cord when in that position.

The wheel, which is not shown, may be made in any of the well-known forms; and the vane may be made in the form shown, or any other suitable form.

What I claim as new is as follows:

1. The frame-cap A, having a groove in the upper portion, furnishing an entire support for the balls, in combination with the recessed revolving head B, having a depending flange, *a*, whereby the balls are supported free from the shaft and protected, substantially as and for the purpose herein specified.

2. The weights H and I, arranged so that the weight H moves independently a certain distance before the weight I is raised, then both raised by the same power, in combination with a vane and mechanism for raising the weights, substantially as herein specified.

DANIEL C. STOVER.

Witnesses:

E. A. WEST,

O. W. BOND.