

L. Wentworth

Wind Wheel,

No 30,848,

Patented Dec. 4, 1860.

Fig. 1.

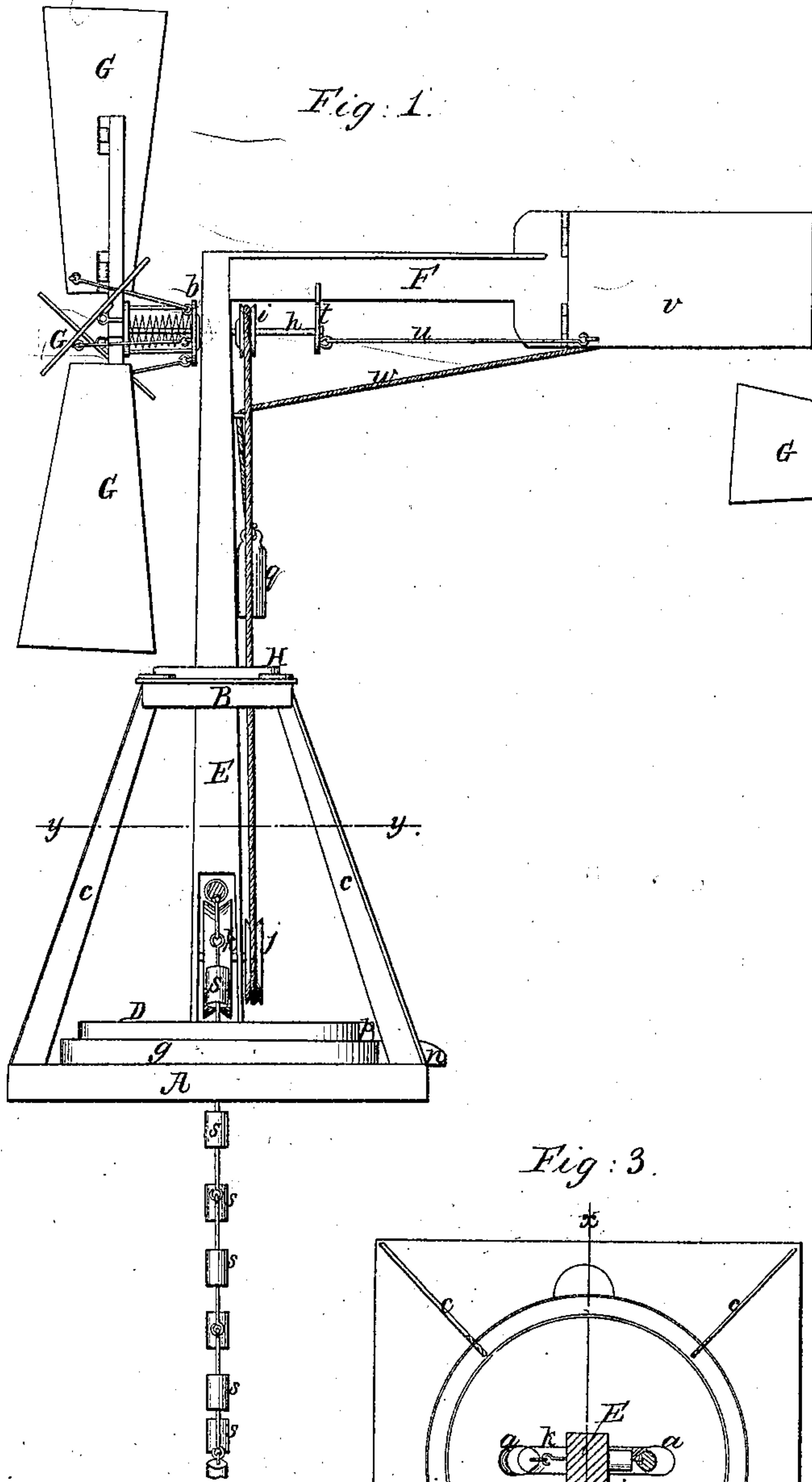


Fig. 2.

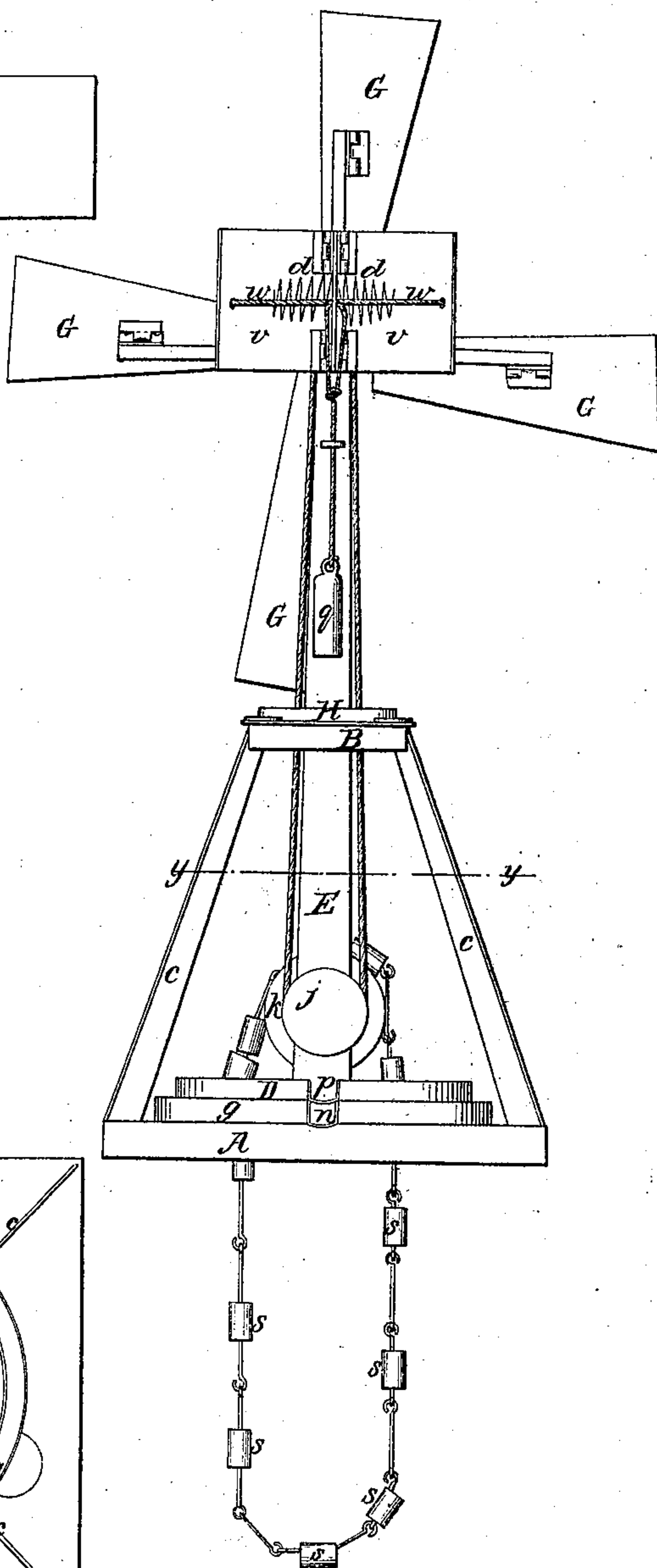


Fig. 3.

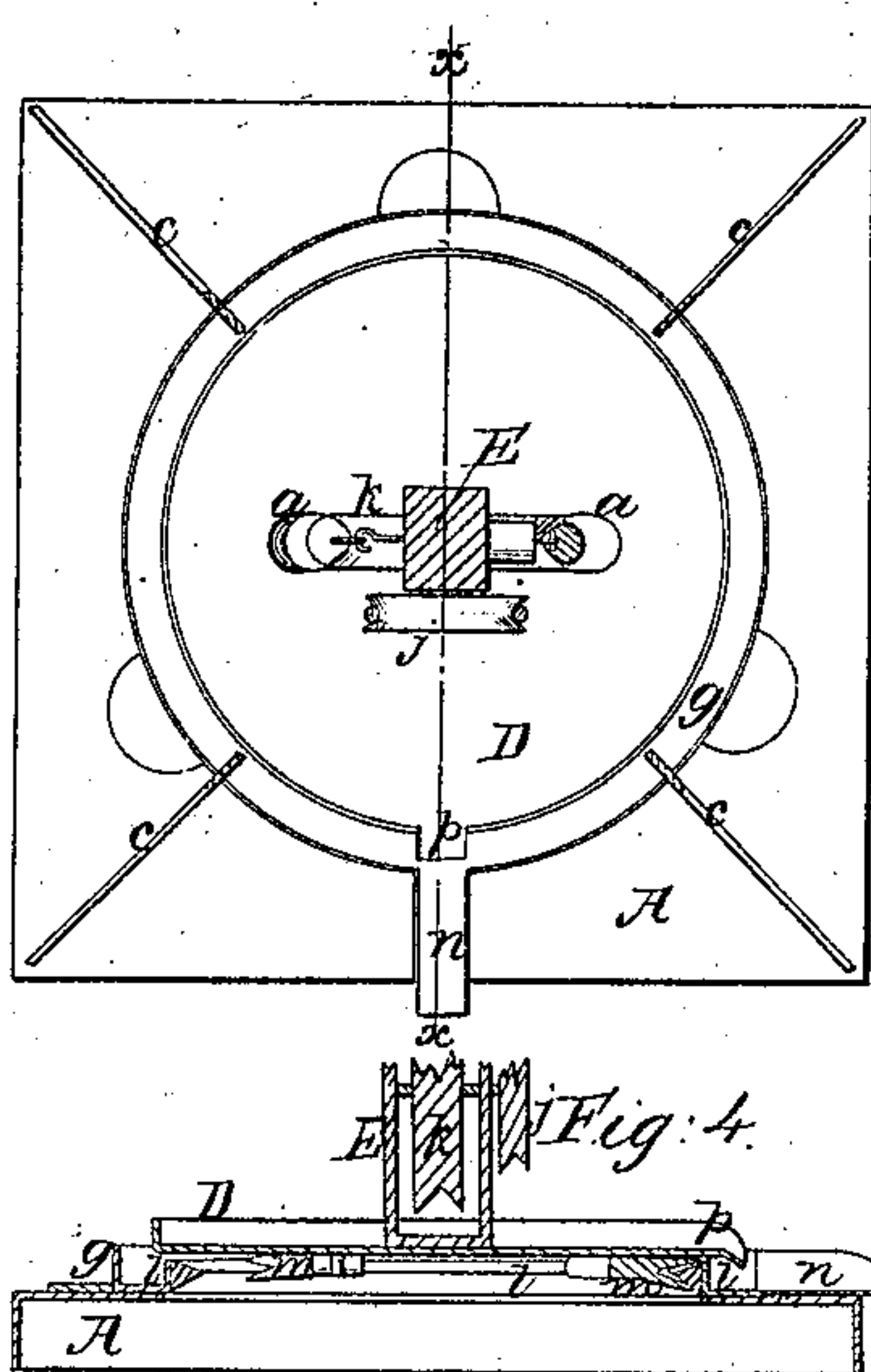
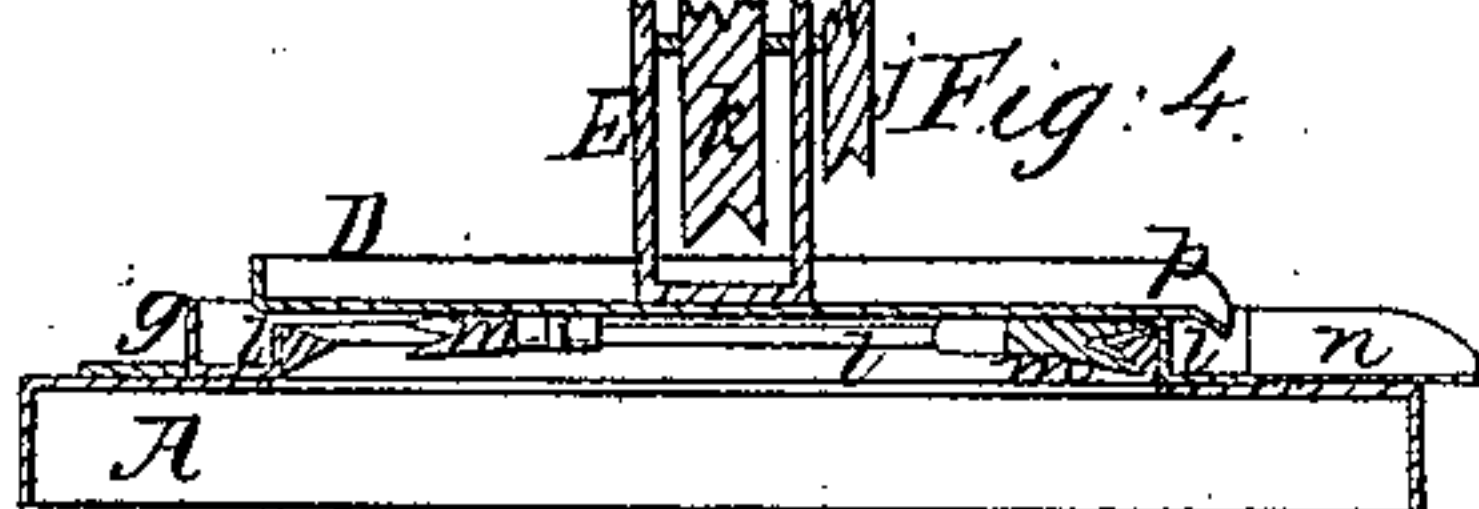


Fig. 4.



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UNITED STATES PATENT OFFICE.

LUTHER WENTWORTH, OF BURLINGTON, IOWA.

IMPROVED APPARATUS FOR ELEVATING WATER.

Specification forming part of Letters Patent No. 30,848, dated December 4, 1860.

To all whom it may concern:

Be it known that I, LUTHER WENTWORTH, of Burlington, in the county of Des Moines and State of Iowa, have invented a new and Improved Apparatus for Elevating Water from Wells, &c., by the Power of the Wind; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification, in which—

Figures 1 and 2 are side elevations of said apparatus; Fig. 3, a section in the line *y y* of Figs. 1 and 2, and Fig. 4 a section in the line *x x* of Fig. 3.

Similar letters indicate the same parts in each of the drawings.

The supporting-frame of my water-elevating apparatus is constructed by uniting the broad base A with the ring-shaped elevated cap B by means of the uprights *c c* in the manner represented in the drawings. The said broad base A of the supporting-frame has a large circular opening whose periphery is surmounted by an annular-shaped and firmly-secured trough *g*, which has a lateral discharging-nozzle at *n*. A flange *l*, which projects from the inner periphery of the said annular-shaped trough *g*, supports the round dish-shaped table D by means of a suitable number of jaws *m m*, which are secured to the under side of said table. From the center of the table D there rises the vertical shaft E, which passes through the round opening in the cap B of the supporting-frame and to a considerable distance above the same. The round plate H, which is secured to the shaft E and whose periphery fits accurately within the aperture in the cap B of the supporting-frame, serves to steady the said upright in its vertical position and in such a manner as to allow it to freely rotate upon its axis.

A vertical mortise near the lower end of the shaft E receives the roller K, whose periphery is of such a shape that it is capable of supporting and putting in motion the series of buckets *s s*, that are connected together by means of an endless chain that works through the curb-surrounded apertures *a a* in the curb-surrounded table D, as shown in the drawings.

The outlet *p* in the curb which surrounds the table D leads into the annular trough *g* on the base A of the supporting-frame, and consequently the water which may be poured

from the series of buckets into the space within the said curb will all flow into the said trough *g* and be discharged therefrom through its spout *n*. It will therefore be perceived that the plate D and the shaft E may be turned around upon their common axis without in the slightest degree interrupting the working of the series of connected buckets or the free discharge of the water at the spout *n* that may be elevated thereby, and consequently there will be no difficulty in imparting the desired motion to the said series of buckets by means of a wind-wheel located at the upper end of the shaft E.

The arm F, which projects at right angles from the upper end of the vertical shaft E, serves the purpose of supporting the hinged vanes *v v* and also of aiding in the support of the shaft *h* of the wind-wheel, as represented in the drawings. The said shaft *h* of the wind-wheel works in suitable journal-boxes, that may be secured within an aperture near the upper end of the shaft E or may be combined with said shaft in any other suitable manner. The inner end of the said wind-wheel shaft *h* is connected to the hinged vanes *v v* by means of the sliding box *t* and the rods *u u* in the manner represented in the drawings. The said vanes *v v* are pressed outward from each other by means of the springs *d* and they are drawn inward by the counteracting influence of the weight *q*, which is connected to the inner surfaces of said wings by means of the cord *w* and its branches in the manner represented in the drawings.

The wings G G of the wind-wheel are jointed to radial arms from the outer end of the shaft *h*, while the outer edge of each of said wings is connected to the sliding collar *b* upon said shaft by means of jointed rods, the said collar *b* being pressed inward from the head of the shaft *h* by means of a spiral spring, as shown in Fig. 1. It will therefore be perceived that when the wind-wheel is acted upon by a very strong wind an influence will be produced thereby upon the vanes *v v*, which will draw inward the shaft of said wheel and produce so great an amount of friction between the collar *b* and the outer face of the journal-box of the shaft of said wheel as will prevent the wheel from attaining a dangerous velocity, and when the wind-wheel is acted upon by a gale of wind, as a further

protection against injury thereto, the wings *G* will be turned to such an extent as to cause their edges to be presented to the action of the wind.

The pulley *j*, which is placed at the outer end of the shaft of the pulley *k*, that supports the series of connected buckets *s s*, is connected to the pulley *i* upon the wind-wheel shaft by means of a suitable band which passes through an aperture or apertures of the proper shape in the plate *H*, which steadies the movements of the upright *E* within the cap *B* of the supporting-frame.

Having thus fully described my improved apparatus for elevating water by the force of the wind, what I claim therein as my invention, and desire to secure by Letters Patent, is—

1. Supporting the vertical shaft *E* of the wind-wheel of said apparatus upon the dish-shaped turn-table *D*, when the said table is

made to close an opening in the base-plate *A*, which is surrounded by the annular trough *g*, and when the endless series of connected buckets *s s* are made to pass up and down through apertures in the said dish-shaped turn-table, all substantially as herein set forth.

2. Combining the shaft *h* of the within-described wind-wheel with the hinged vanes *vv*, when the springs *dd* and the weight *q* are combined with the said hinged vanes, and when the said wind-wheel is made to operate the series of connected buckets *s s*, substantially in the manner herein set forth.

The above specification of my improved apparatus for elevating water from wells, &c., by the force of the wind signed and witnessed this 11th day of October, 1860.

LUTHER WENTWORTH.

Witnesses:

C. MARBLE,
HENRY J. JARVIS.