

F. Peabody,
Wind Wheel,

N^o 14, 113.

Patented Jan. 22, 1856

Fig. 2.

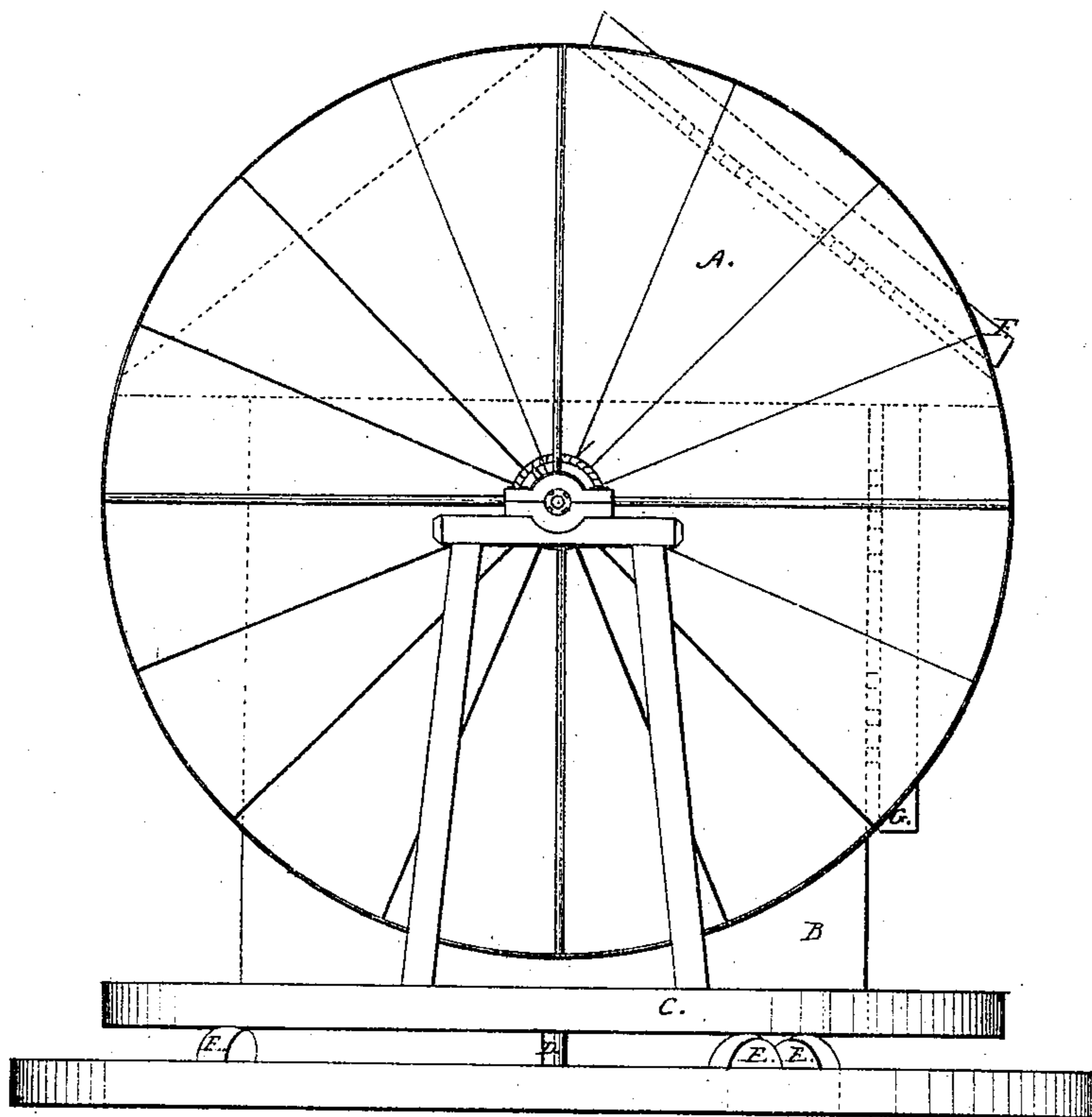
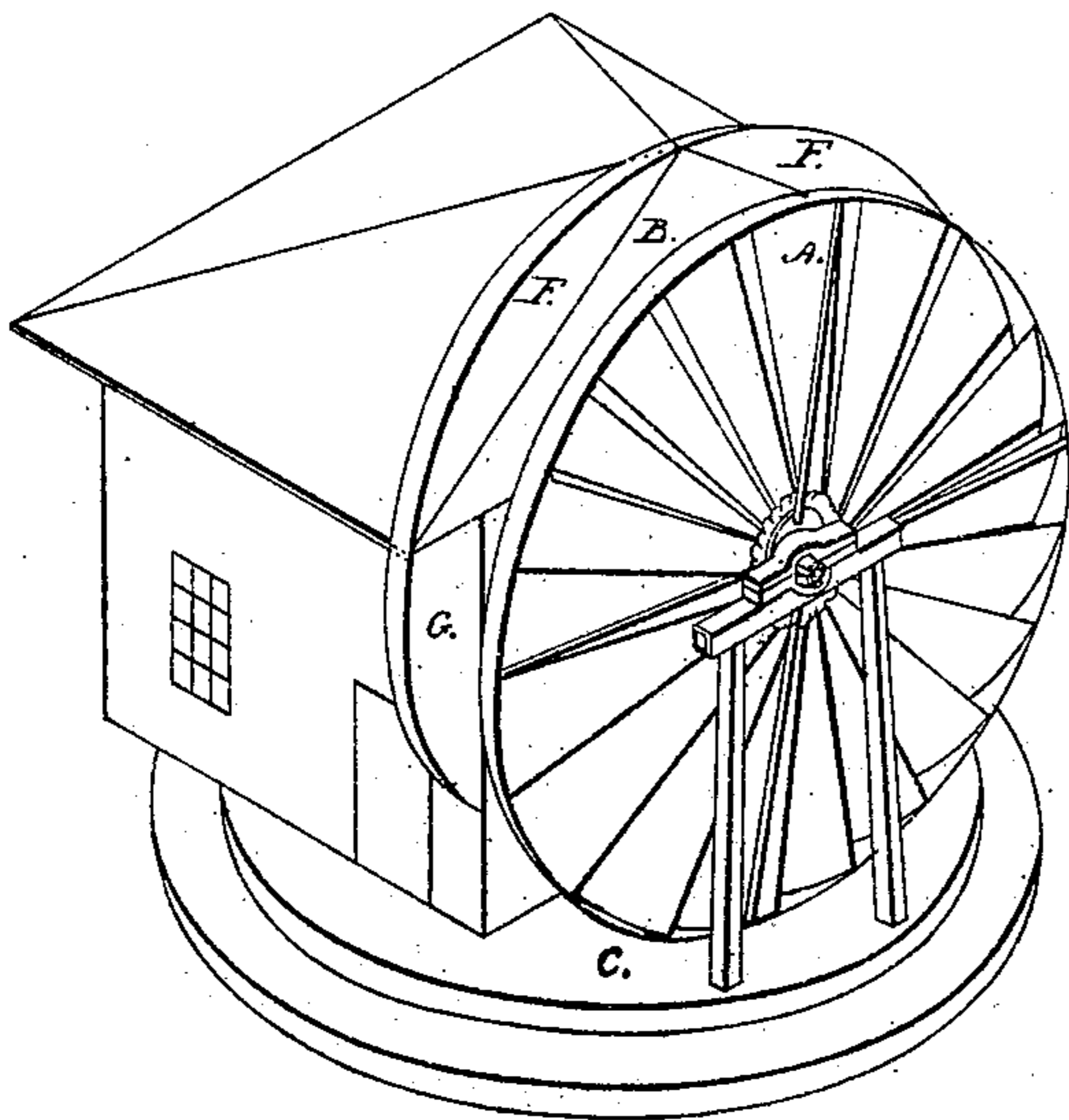


Fig. 1.



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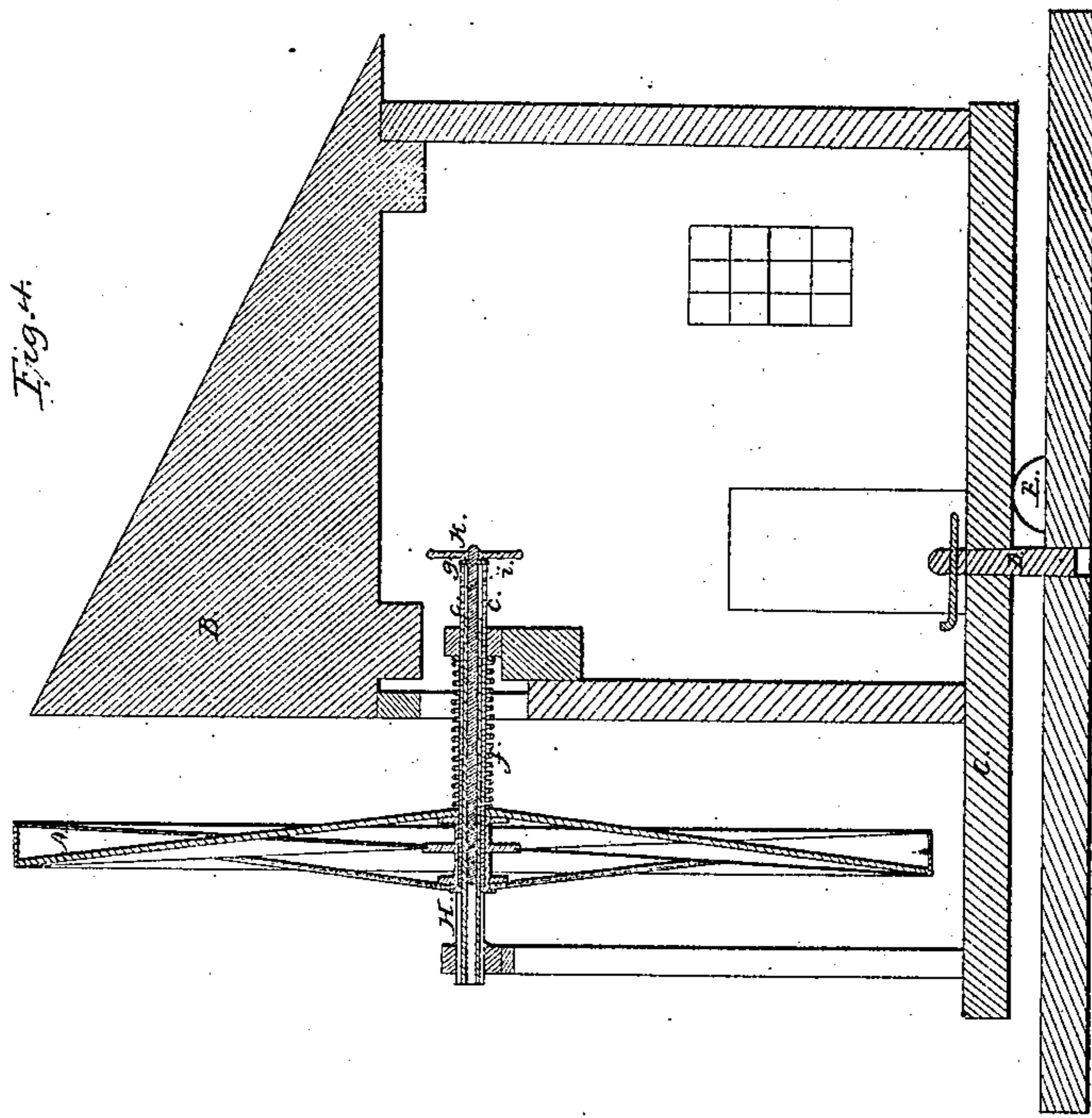


Fig. 6.

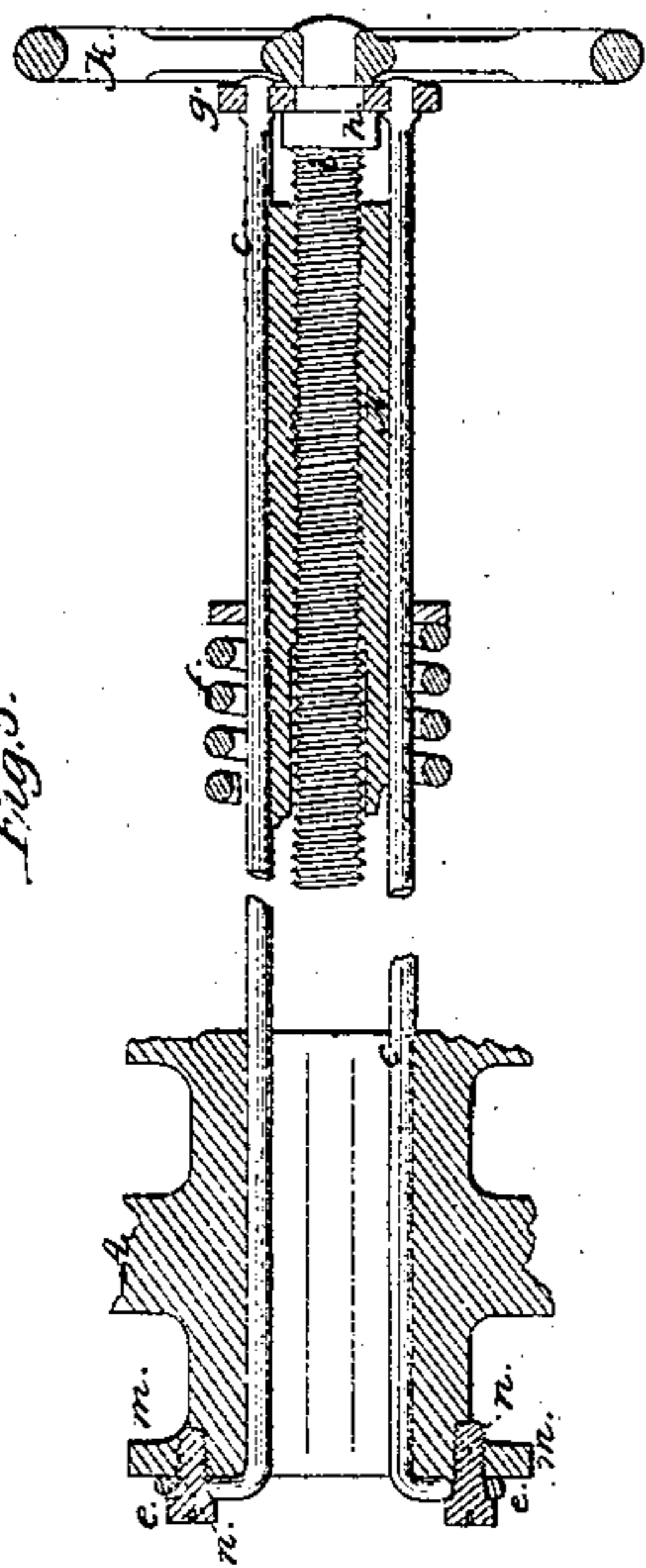
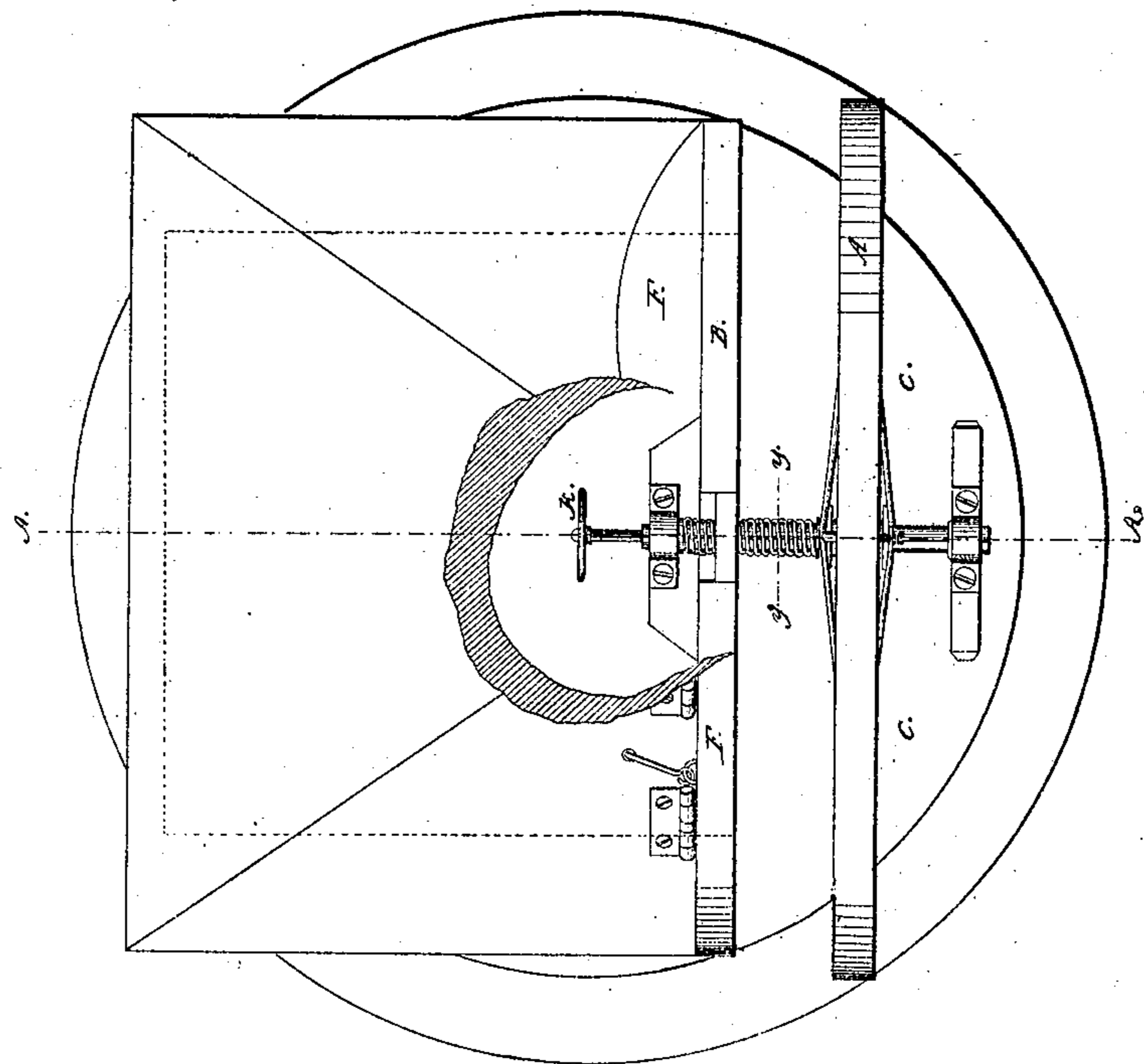


Fig. 3.



UNITED STATES PATENT OFFICE.

FRANCIS PEABODY, OF SALEM, MASSACHUSETTS.

IMPROVED METHOD OF REGULATING THE VELOCITY OF WIND-WHEELS.

Specification forming part of Letters Patent No. 14,143, dated January 22, 1856.

To all whom it may concern:

Be it known that I, FRANCIS PEABODY, of Salem, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Hanging Wind-Wheels, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a perspective view; Fig. 2, a front elevation; Fig. 3, a plan, a portion of the roof being broken away to show the parts within; Fig. 4, a vertical section upon the line A A of figure; Fig. 5, a detail which will be hereinafter explained.

My present invention consists in certain improvements upon the Letters Patent granted to me on the 15th day of May, 1855, for a method of regulating the velocity of wind-mills by causing the wind which passed through the wheels to react from a screen placed in rear of the wheel upon the back side of the fans, the wheel being allowed to slide longitudinally upon its shaft for the purpose of increasing or diminishing this reactive force directly as the force of the wind increases or diminishes, by which means the force of the gale is made the regulating power, and thus is constituted a reacting wind-wheel. Where wheels of large diameter are employed, I make use of one side of the mill as the unyielding disk or plane, and to complete the circle of the disk to oppose the full circle of the wheel I have added "wind-gates," which will be more fully described hereinafter.

To stop or start the mill or to regulate the tension of the spiral spring on the main shaft so as to diminish the vibrations of the spring during squally weather or violent gales, I have connected the movable head of the wheel with a regulating-screw on the inner end of the shaft by rods which slide in grooves in the main shaft and pass through the boxes in which the shaft runs, by which means all tremulous motion of the wheel may be prevented, or it may be drawn up so closely against the disk as to stop its motion entirely.

In the accompanying drawings, A is the wind-wheel, and B the building which contains the millstones or other machinery to be actuated, the whole being secured to the turn-table C, which is revolved around the center D

and supported by a suitable number of wheels or rollers E, by which means the wheel may at any time be turned toward the wind.

In order to complete the full circle of the disk in the rear of the wheel, I have hinged to the roof and sides of the building the wind-gates or segments F and G. When the wind is light and its full force is required upon the wheel, these segments are thrown back, as in Fig. 2. When the wind is high, these segments are brought up into the position seen in Fig. 1, and thus the full circle is completed behind the wheel. The segments may be secured in position by bolts or rods in any suitable manner.

The wind-wheel is allowed to move longitudinally upon its shaft and is forced away from its disk by the spring *f*, as in the patent before referred to.

For the purpose of preventing all frivolous motion of the wheel when the wind is very irregular and comes in flaws and gusts, and also to avoid the necessity of stopping the mill in case of an accident to the spring, I make use of the following contrivance: *c c* are rods which slide in grooves in the shaft H, being sunk so far beneath the exterior surface thereof as not to interfere with its rotary motion in its bearings. At the inner end these rods are secured to the head *g*, Fig. 5, through which passes the head of the screw-rod *i*. This screw works in the center of the shaft H, which is made hollow for the purpose and is allowed to revolve freely without turning the head *g*, but is so connected therewith by means of the collar *h* and hand-wheel *k* that the rods *c* shall partake of any longitudinal motion imparted to the head *g*. Upon their outer ends the rods *c* are turned up, as seen enlarged at *c* in Fig. 5, in front of the head *m* of the wheel, and thus as the hand-wheel *k* is turned so as to withdraw the screw-rod *i* from the shaft the wheel is drawn nearer to the building or disk in its rear, and, as before stated, all frivolous motion of the wheel is avoided in gusty weather.

In Fig. 5 the hooks *e* of the rods *c* are seen secured to the head *m* by the screws *n*. Ordinarily these screws are not employed, the wheel being forced against the hooks by the spring *f*, but still at liberty to approach the disk as the force of the wind increases. In

case, however, of the breakage of a spring, and that the mill may not be stopped thereby, the screws *n* are inserted and the distance between the wheel and its disk may then be approximately regulated by hand to the varying force of wind until the spring can be restored, when the screws *n* are again withdrawn as before.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The wind-gates herein described, for the purpose specified.

2. The method herein described of controlling the wheel by means of the rods *c c* and screw *i*, arranged and operating in the manner substantially as herein set forth.

FRANCIS PEABODY.

Witnesses:

SAM. COOPER,

P. E. TESCHEMACHER.