

(No Model.)

2 Sheets—Sheet 1.

S. W. WALKER.
WIND WHEEL.

No. 249,703.

Patented Nov. 15, 1881.

Fig. 1.

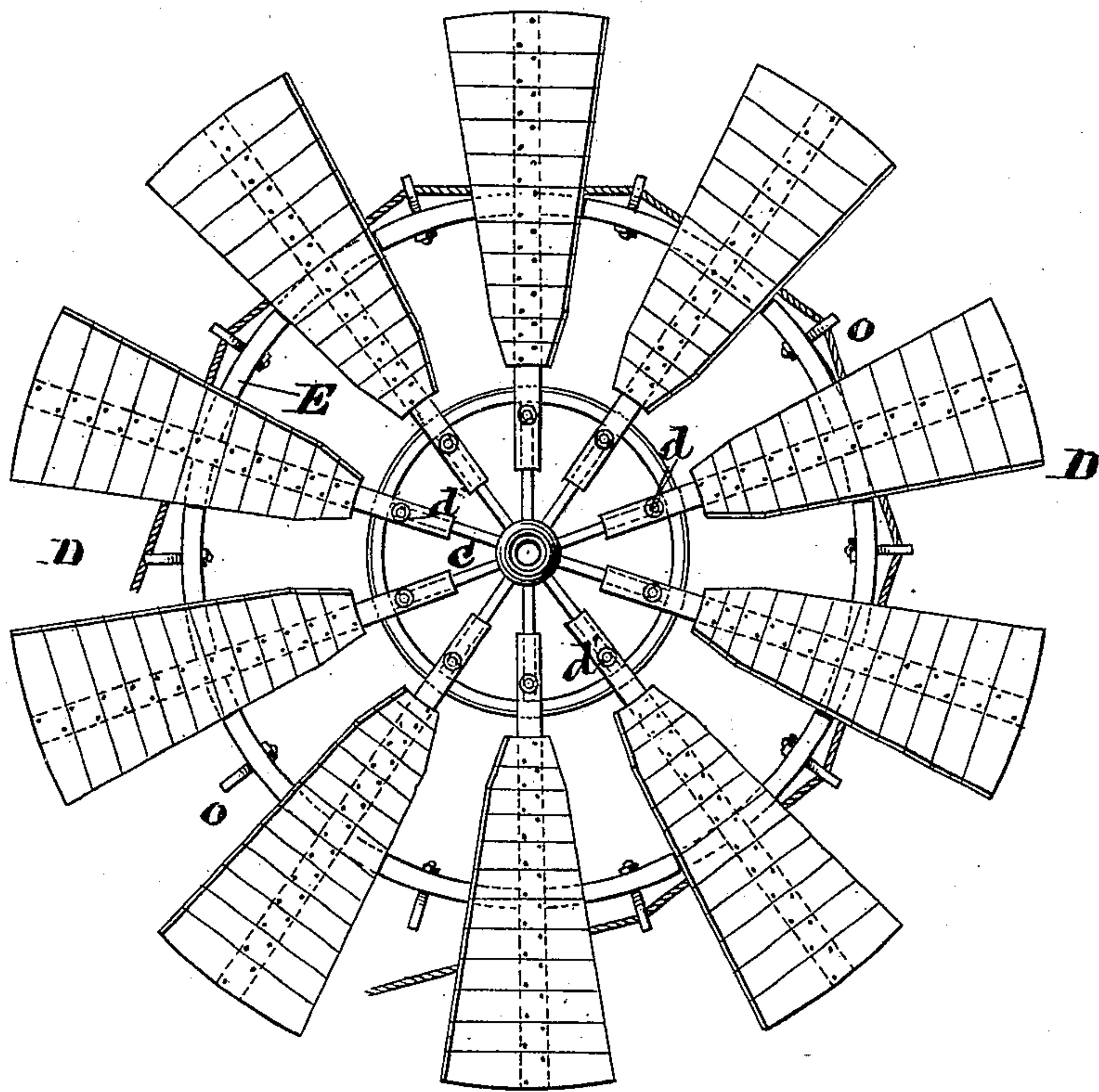


Fig. 2.

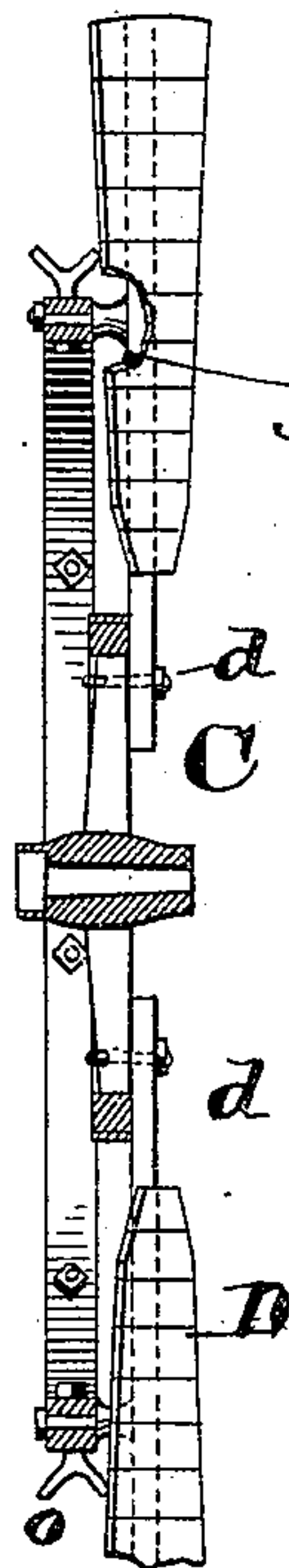
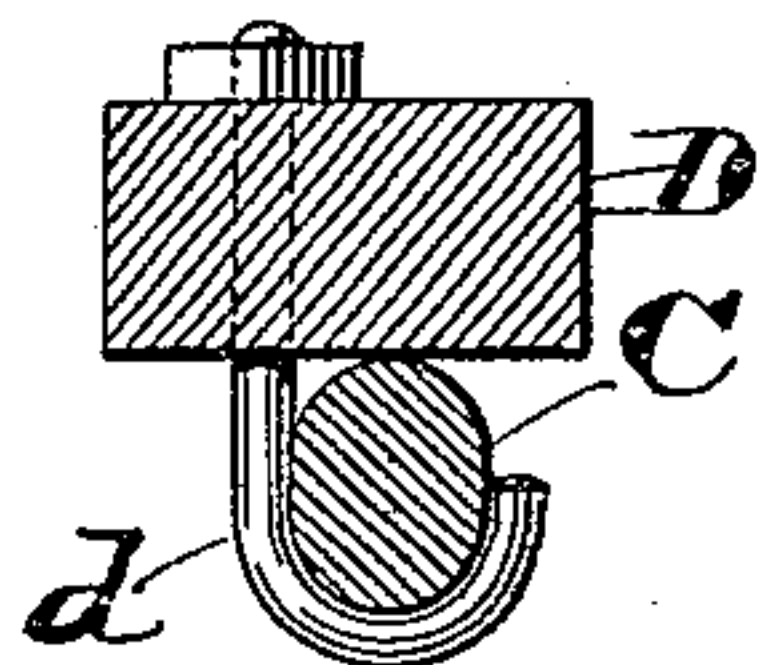


Fig. 3.



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Inventor:

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Attorney

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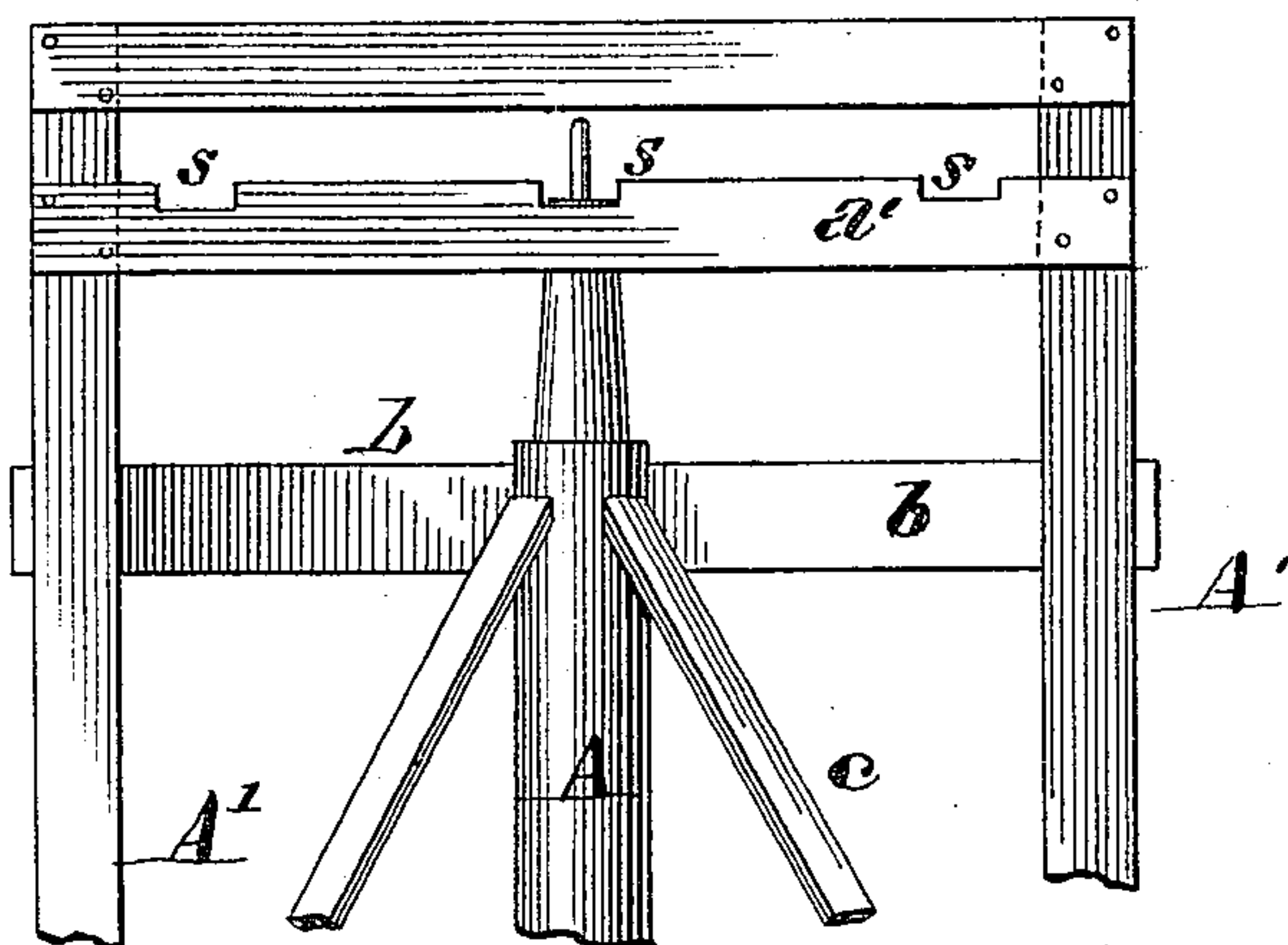
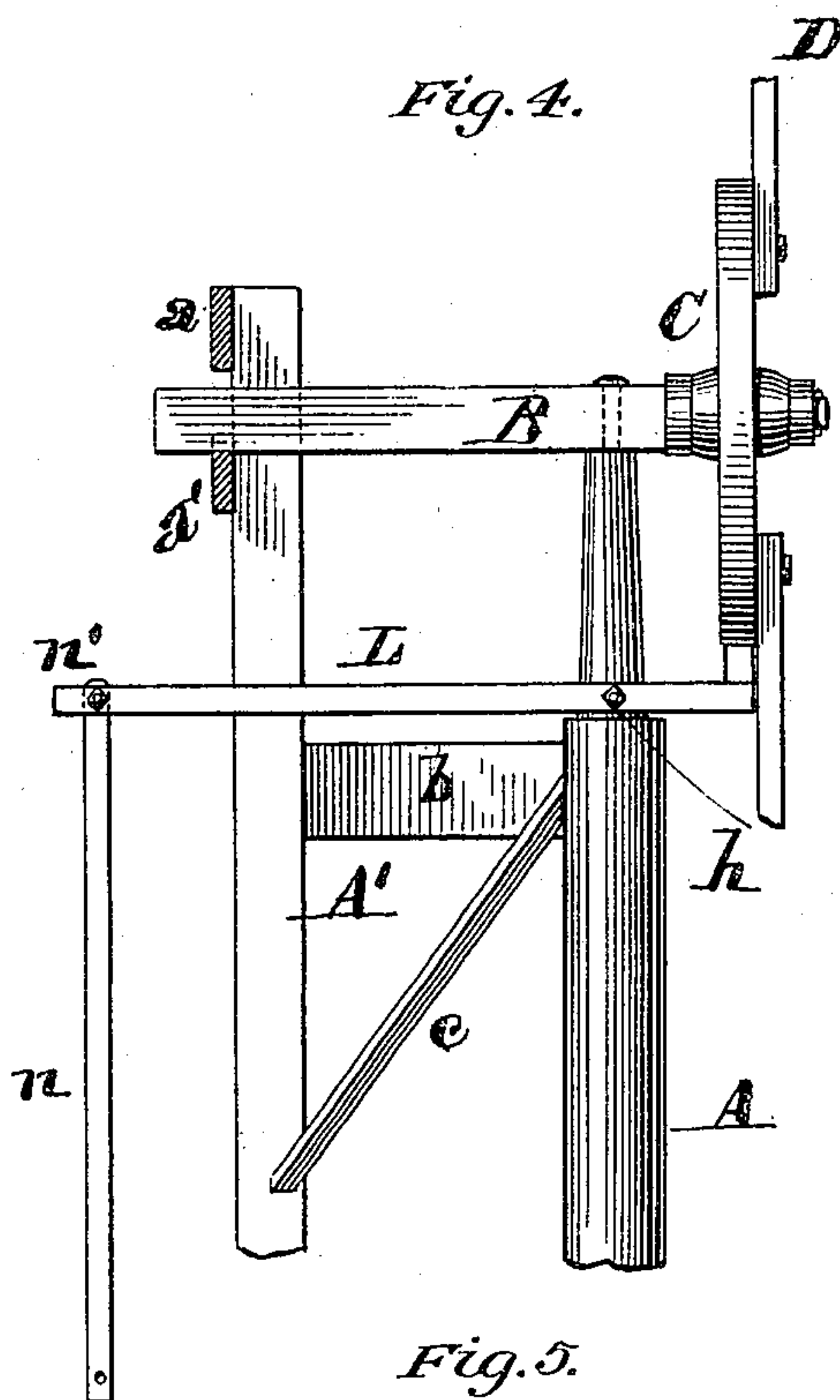
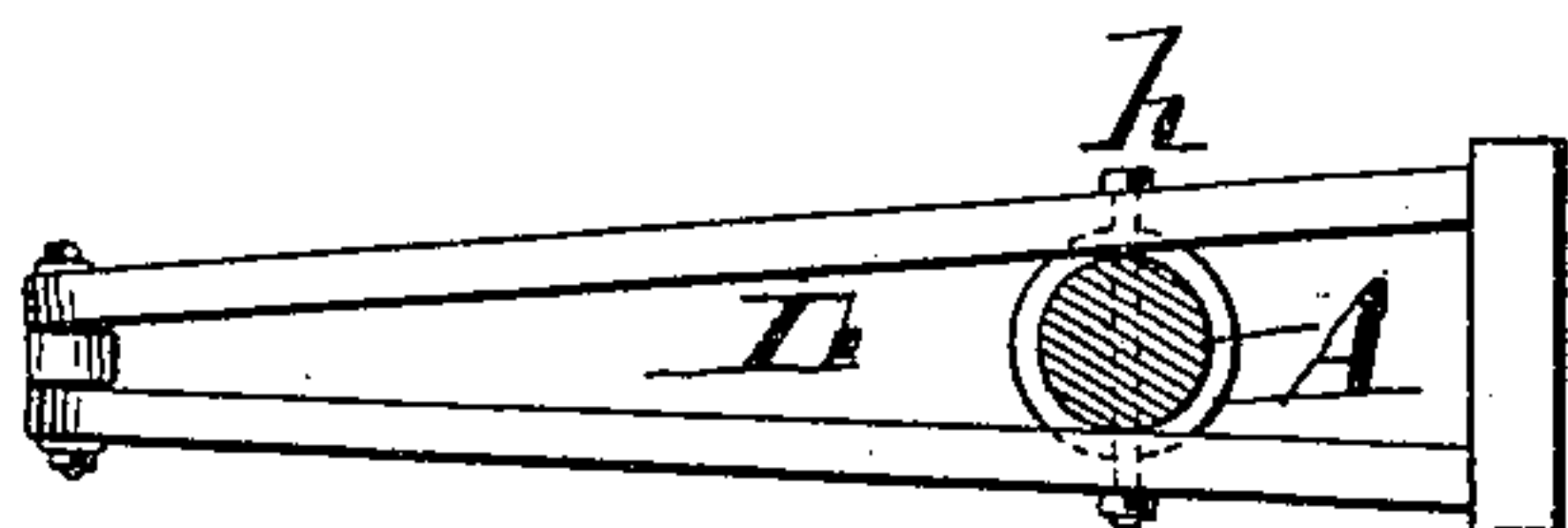


Fig. 6.

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UNITED STATES PATENT OFFICE.

STEPHEN W. WALKER, OF ANSON, MAINE.

WIND-WHEEL.

SPECIFICATION forming part of Letters Patent No. 249,703, dated November 15, 1881.

Application filed June 10, 1881. (No model.)

To all whom it may concern:

Be it known that I, STEPHEN W. WALKER, a citizen of the United States of America, residing at Anson, in the county of Somerset and State of Maine, have invented certain new and useful Improvements in Wind-Wheels; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

The invention consists, principally, in a series of detachable wings or vanes, as hereinafter described, adapted to be clamped to a common cart-wheel or other like vehicle-wheel, and means for supporting said wheel, whereby the same may be converted into a wind-wheel at pleasure.

The invention also consists in a novel construction of frame for supporting the wind-wheel and allowing it to be fixed to face the wind, as will be hereinafter described.

Figure 1 of the drawings is a front view of the wind-wheel ready for operation. Fig. 2 is a transverse section. Fig. 3 shows the device for attaching the vanes to the spokes of the wheel. Fig. 4 is a side elevation of the supporting-frame. Fig. 5 is a front elevation of the supporting-frame with braces. Fig. 6 represents a plan view of the above.

The triangular supporting-frame is composed of a main post, A, and side posts, A' A', set in the ground at a proper distance apart, the side posts being connected with each other at the top by a cross-board, *a a'*, and with the main post about midway of the height of the posts by boards *b*. The main post is also braced by stays *c*.

The axle B of the wind-wheel is pivoted to the top end of the post A, so that it is adjustable horizontally, and is also allowed to receive a slight vertical adjustment. The rear end of this axle B is adjustable in a slot left between the two boards *a a'*, and by means of notches *s s s* in the upper edge of the board *a'* the axle B can be held stationary at three different angles, according to the direction of the wind from either of the three points indicated by the said angles.

Each arm F of the vanes D is made of three by four inch joists or scantling, with shingles or very thin boards nailed crosswise upon it, forming the webbing. The shanks of the vanes are detachably secured to the spokes of a cart-wheel by means of bolts and nuts, as shown at *d'* in Fig. 3.

On the rear side of the vanes, about midway between their outer extremities and the point of attachment to the spokes, a circular stay, E, is placed, made in segments, and when finished resembles the rim of a carriage-wheel. This stay is attached to the arms of the vanes by screw bolts and nuts. Owing to the feathered position of the vanes, the bolts are necessarily long, leaving a space between the arms and the circular stay. This space is utilized by interposing sleeves *f*, encircling the bolts, one end resting against the back side of the vanes arms and the other end against the front side of the stay.

The circular stay E is made to serve as a pulley by fixing into it "crutches" or bifurcated bolts *o*, arranged equidistant from each other, so as to receive and retain in place a rope belt, as shown in Fig. 1.

The vanes can be attached to the spokes before or after the wheel is placed on the spindle of the axle.

The brake L, for stopping or regulating the speed of the wheel, is pivoted to the post A at *h*, and has a regulating-handle, *n*, pivoted to the arm at *n'*.

For a machine of average size the dimensions of the different parts constructed in accordance with this invention are about as follows: height of supporting-frame above the ground, thirteen feet; vanes, ten feet long and twenty-two inches wide; diameter of belt-wheel, fourteen feet; length of rope or other belt, sixty feet.

Should any one desire to construct a wind-wheel on a more expensive plan and in a more artistic style, it can be done by using more costly materials and another kind of wheel or a wheel constructed for the purpose.

The size and strength may be varied as circumstances require without departing from the general principle of this invention.

What is claimed as the invention is—

1. The combination of the triangular frame

and the axle pivoted at one end to the main post and loosely supported at the other end between the side posts by means of a cross-board, substantially as described.

5 2. The combination of the ordinary vehicle-wheel, the vanes, the hooked bolts and nuts for attaching the arms of the vanes to the spokes of the wheel, the circular stay, and the bolts and sleeves connecting the blades of the
10 vanes with the stay, substantially as described.

• 3. The combination of a supporting-frame, a swiveling axle pivoted to one of the posts thereof, having a spindle at one end, a wheel
15 said spindle, and a cross-board for supporting

the opposite end of said axle, provided with notches for holding the axle at the desired angle, substantially as described.

4. The combination of the wheel, the detachable vanes, the circular stay therefor, and 20 the crutch-bolts applied to the stay to adapt it to serve as a pulley for a rope belt, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

STEPHEN W. WALKER.

Witnesses:

W. H. BLACKWELL,
WM. H. SPEAR.