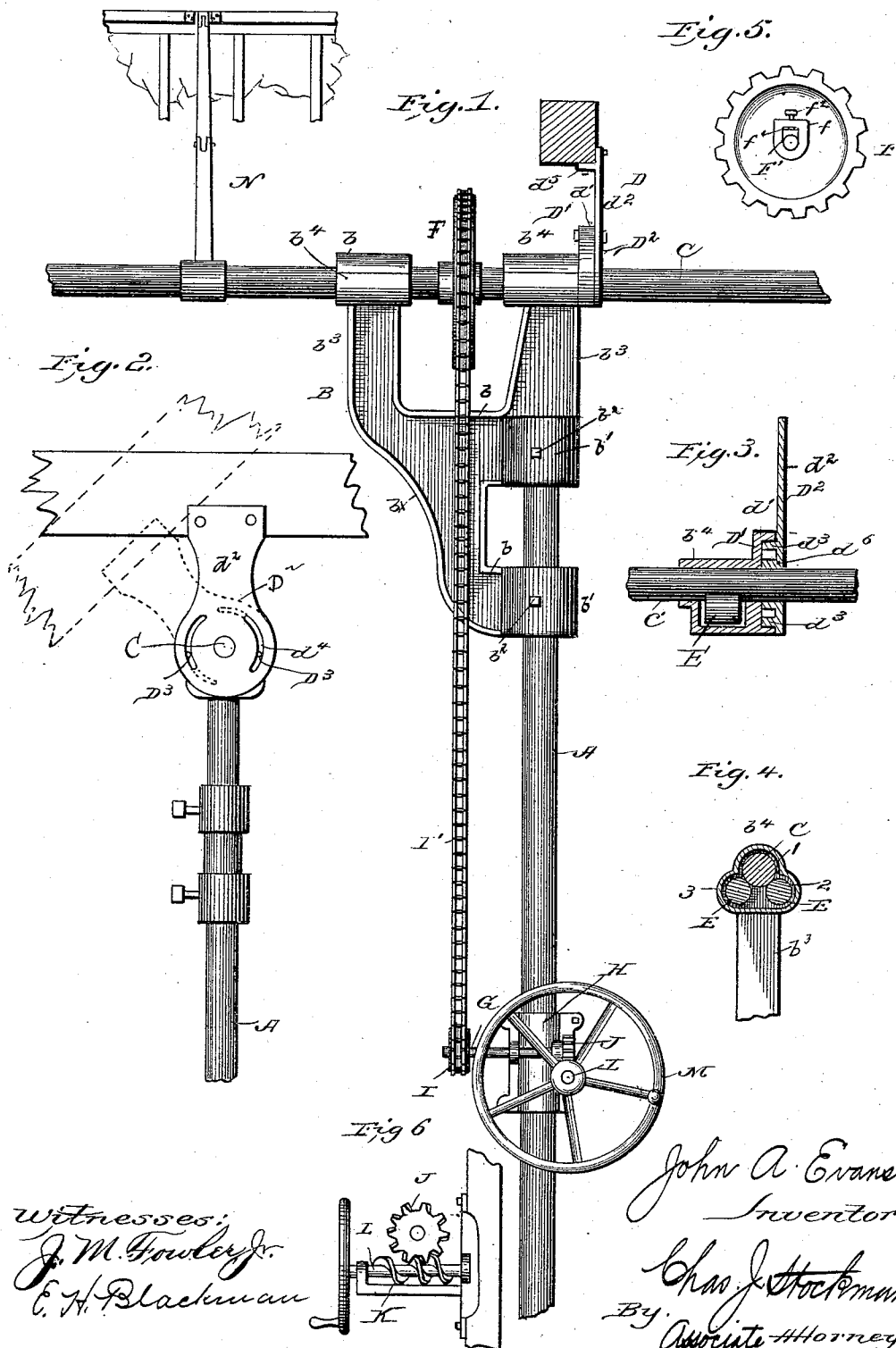


J. A. EVANS.
SUPPORT FOR SHAFING.

Patented Oct. 11, 1892.



UNITED STATES PATENT OFFICE.

JOHN A. EVANS, OF RICHMOND, INDIANA.

SUPPORT FOR SHAFTING.

SPECIFICATION forming part of Letters Patent No. 484,148, dated October 11, 1892.

Application filed March 28, 1892. Serial No. 426,679. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. EVANS, a citizen of the United States, residing at Richmond, in the county of Wayne and State of Indiana, have invented certain new and useful Improvements in Supports and Bearings for Shafting; 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.

This invention has particular reference to that class of devices designed to raise and hold in elevated position the sashes of green-houses for the purpose of ventilation; and its object is to provide such devices with certain novel and advantageous features, substantially as hereinafter described, and particularly set forth in the subjoined claims.

In the accompanying drawings, illustrating the invention, Figure 1 is a side elevation of my improved device. Fig. 2 is a front view of the upper part of the supporting-post, showing in full lines the bracket for supporting the upper end of the post attached to a horizontal rafter of the greenhouse and in dotted lines said bracket attached to an inclined rafter. Fig. 3 is a longitudinal section through one of the bearing-boxes and bracket. Fig. 4 is a section through Fig. 1. Fig. 5 is a detail view of the sprocket-wheel which is fastened on the line-shaft, and Fig. 6 is a detail view of part of the operating mechanism.

The same letters and numerals of reference designate the same parts in the several figures.

A represents the supporting-post, which is suitably secured or anchored at its bottom. B designates a bracket, which is secured to the upper end of said post and is formed to provide bearings for the line-shaft C, and D designates a bracket for holding the upper end of said post rigid against vibration during the operation of the line-shaft.

The bracket B consists of the two horizontal arms *b*, which are connected together at one side by a vertical arm *b*^x, and are constructed at their ends *b*¹ to encircle the post A, to which they are bolted, as shown at *b*², and the arms *b*³, which extend vertically from the upper horizontal arm *b* and are each provided or formed at its upper extremity with

a bearing-box *b*⁴. Each of these bearing-boxes *b*⁴ is formed to provide three communicating chambers 1, 2, and 3, of which chambers 2 and 3 are located side by side, forming practically one continuous chamber, and chamber 1 is located above and between said chambers 2 and 3, as clearly shown in Fig. 4. Located within chambers 2 and 3 are freely-rotatable wheels or rollers *E*, and through the chamber 1 passes the line-shaft C, the under side of which rests on said wheels or rollers. Thus I have provided a simple and practical means for supporting the line-shaft which will permit it to rotate without friction, and I thereby reduce wear on the shaft and increase the ease with which it may be operated.

The bracket D is made in two parts D¹ and D². Part D¹ is preferably formed integral with the end of the adjacent bearing-box *b*⁴, and is formed with a flange *d*¹, extending around its rim. Part D² has a flange *d*², extending upward from its upper end and is formed around the rim of its circular portion with a flange *d*³, which engages said flange *d*¹. It is further formed with curved openings *d*⁴, which are located on opposite sides of its axial center, and through said curved openings and perforations in the part D¹ extend bolts D³, which serve to connect said parts D¹ and D² together in such manner as to permit part D² to be adjusted on said part D¹, so that flange *d*² will extend either vertically or at an angle with respect to said part D¹. Thus it will be seen that said part D² may be attached to rafters which extend either horizontally, vertically, or incliningly with respect to said bracket. This is an important and advantageous feature of my invention, as will be readily seen. The flange *d*² is provided with a horizontal flange *d*⁵, which is designed to engage the under side of a rafter, and is formed with openings for the passage of bolts or other suitable means for securing the device to the rafter. That portion of the flange *d*² situated above the flange *d*⁵ is formed with openings for a similar purpose. The bracket D is further formed with an opening extending through its axial center for the passage of the line-shaft C, and the part D² has an inwardly-extending flange *d*⁶ immediately surrounding said opening, which keeps dust, dirt, &c., from entering the space between parts

D' and D² and at the same time strengthens and stiffens the bracket.

F designates the sprocket-wheel, which is secured on the line-shaft C between the arms b³ of bracket B. Projecting horizontally from one side of the sprocket-wheel is the hub f, the opening f' through which is of greater diameter than the shaft. One end of this hub is straight and its other end is curved and forms a half-bearing for the shaft, the other half-bearing for said shaft being formed by a gib F', which has a concave under surface to engage the shaft and a flat upper surface engaged by a set-screw f², which serves to clamp said gib firmly to the shaft, and thereby holds the sprocket-wheel fast on the same. This sprocket-wheel is connected with and driven by a suitable mechanism for operating the line-shaft. One form of mechanism suitable for this purpose is shown in the drawings, and consists of a horizontal shaft G, which has its bearings in a suitable sectional collar H, which is suitably fastened in position around the post A, said shaft having at one end a sprocket-wheel I, connected by an endless sprocket-chain I' with said sprocket-wheel F, and at its opposite end a worm-wheel J, which meshes with a worm K on the inner end of a shaft L, which extends at right angles to said shaft G and has at its outer end a suitable hand-wheel for operating the device.

The line-shaft C is connected with the sashes of the greenhouse by means of a series of jointed arms N, as is common in this class of devices.

The operation and advantages of my improved device will be obvious to those skilled in the art to which this invention appertains without any further description.

Having now described my invention, I claim—

1. The combination, with the post, of a bracket secured at its lower end to the upper

end of said post and having upwardly-projecting arms, each of said arms having at its upper extremity a chambered bearing-box, antifriction-wheels in the lower chambers of said bearing-boxes, a line-shaft passing through said bearing-boxes and resting on said antifriction-wheels, a wheel on said line-shaft between said bearing-boxes, means for connecting said line-shaft with window-sashes, and means connected with said wheel for operating said line-shaft.

2. The combination, with the line-shaft and a post supporting the bearing-boxes for said line-shaft, of a bracket contiguous to one of said bearing-boxes, said bracket having an opening for the passage of the line-shaft and being made in two parts, one of said parts having a flange adapted to be secured to a rafter of a building and also having elongated curved openings and both of said parts having inwardly-projecting flanges d', d², and d³, arranged as described, and bolts passing through said curved openings in one of the parts and through perforations in the other of the parts, substantially as and for the purposes set forth.

3. The combination of the post, line-shaft, bracket having arms provided with bearing-boxes for the line-shaft, a bracket for supporting the upper end of said post, said bracket consisting of two parts, one of which is adjustable on the other and has a flange designed to be secured to a rafter of a building, a wheel on said line-shaft between the arms of said first-mentioned bracket, arms designed to connect said line-shaft with window-sashes, and operating means connected with said wheel, substantially as described.

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

JOHN A. EVANS.

Witnesses:

FRANK C. ROBERTS,
W. T. DENNIS.