

No. 677,094.

Patented June 25, 1901.

W. H. McFARLAND.  
PROTECTIVE TENT FOR TREES.

(No Model.)

(Application filed Dec. 10, 1900.)

3 Sheets—Sheet 1.

Fig. 1.

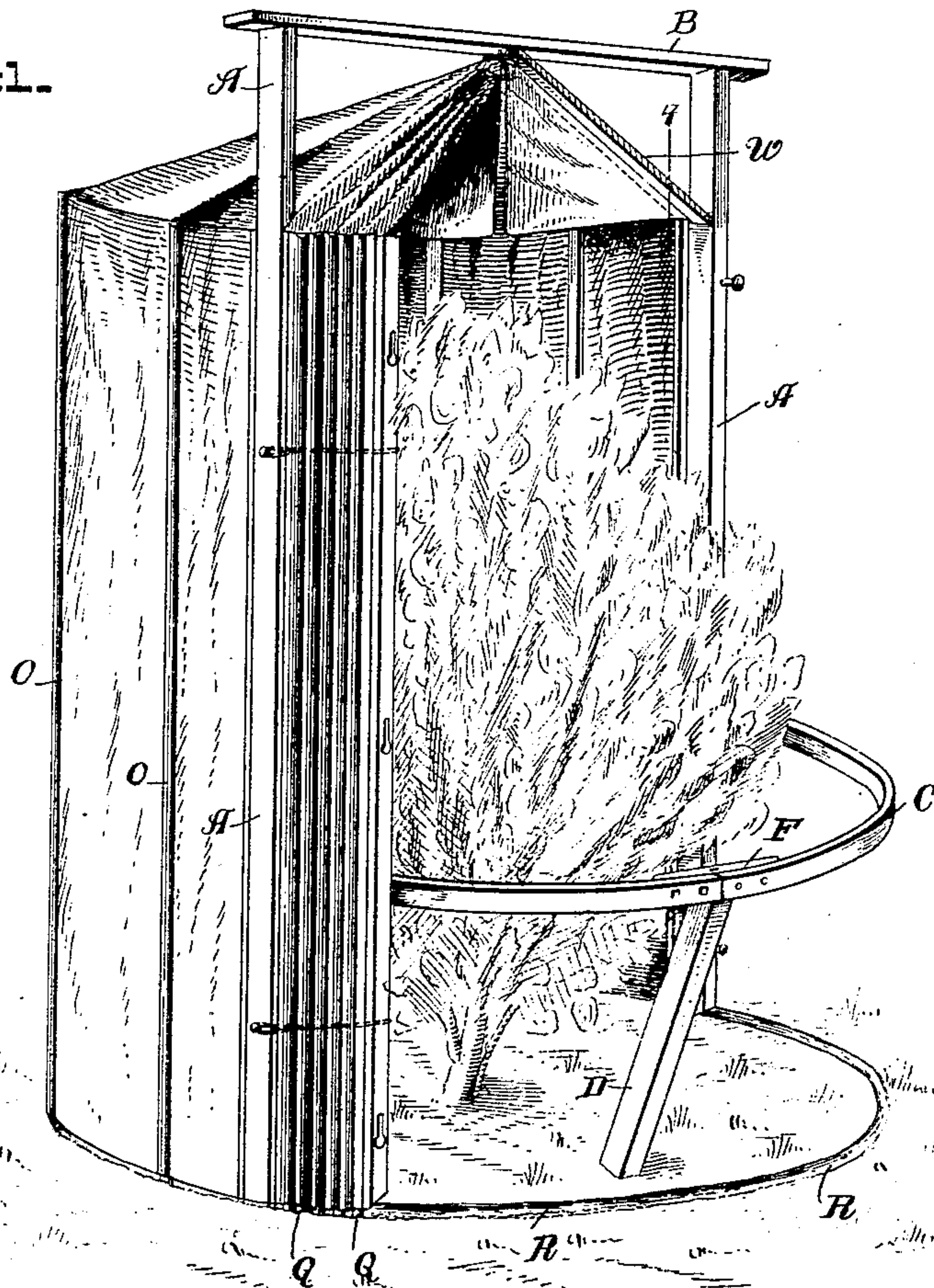


Fig. 4.

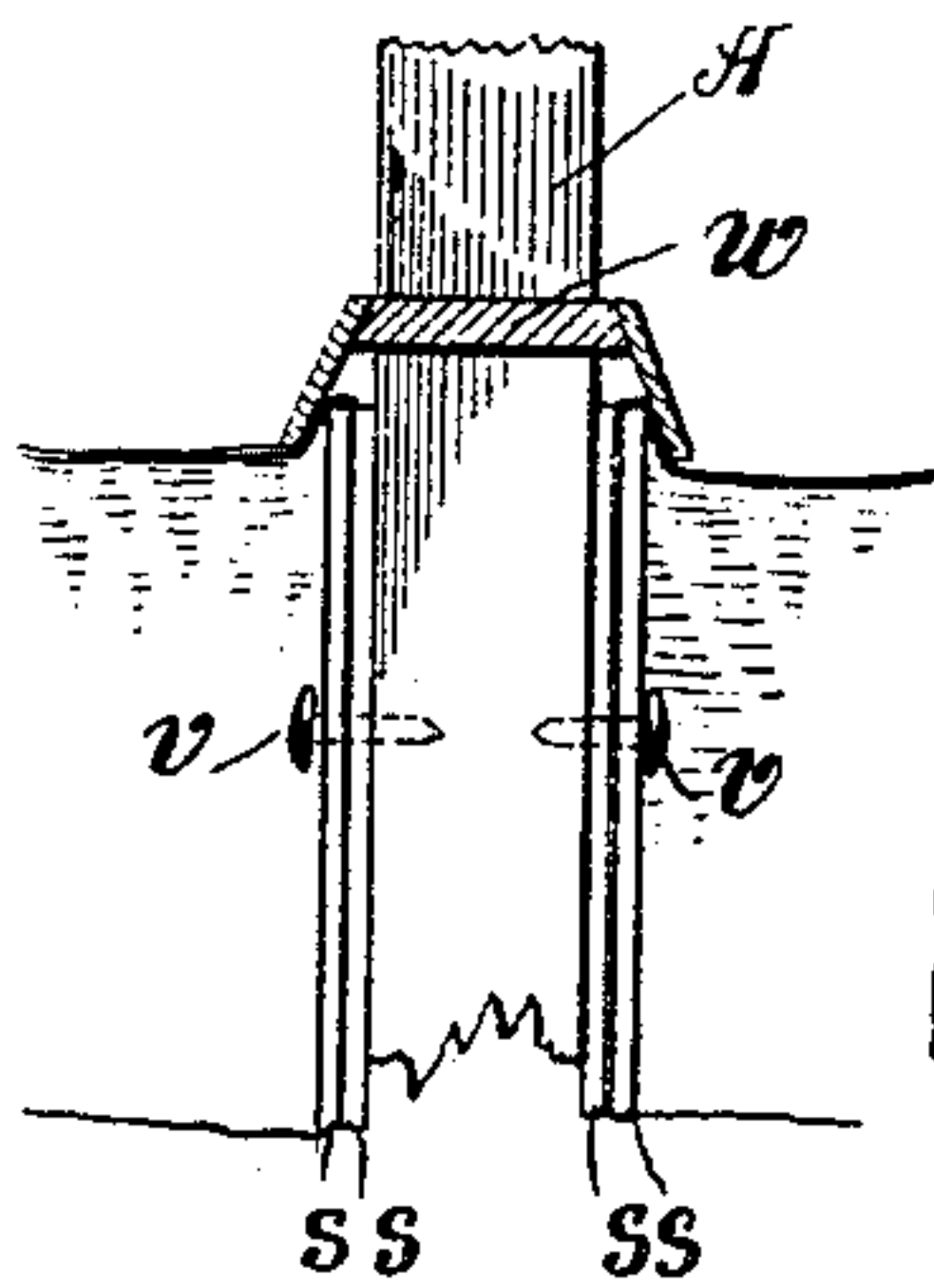


Fig. 2.

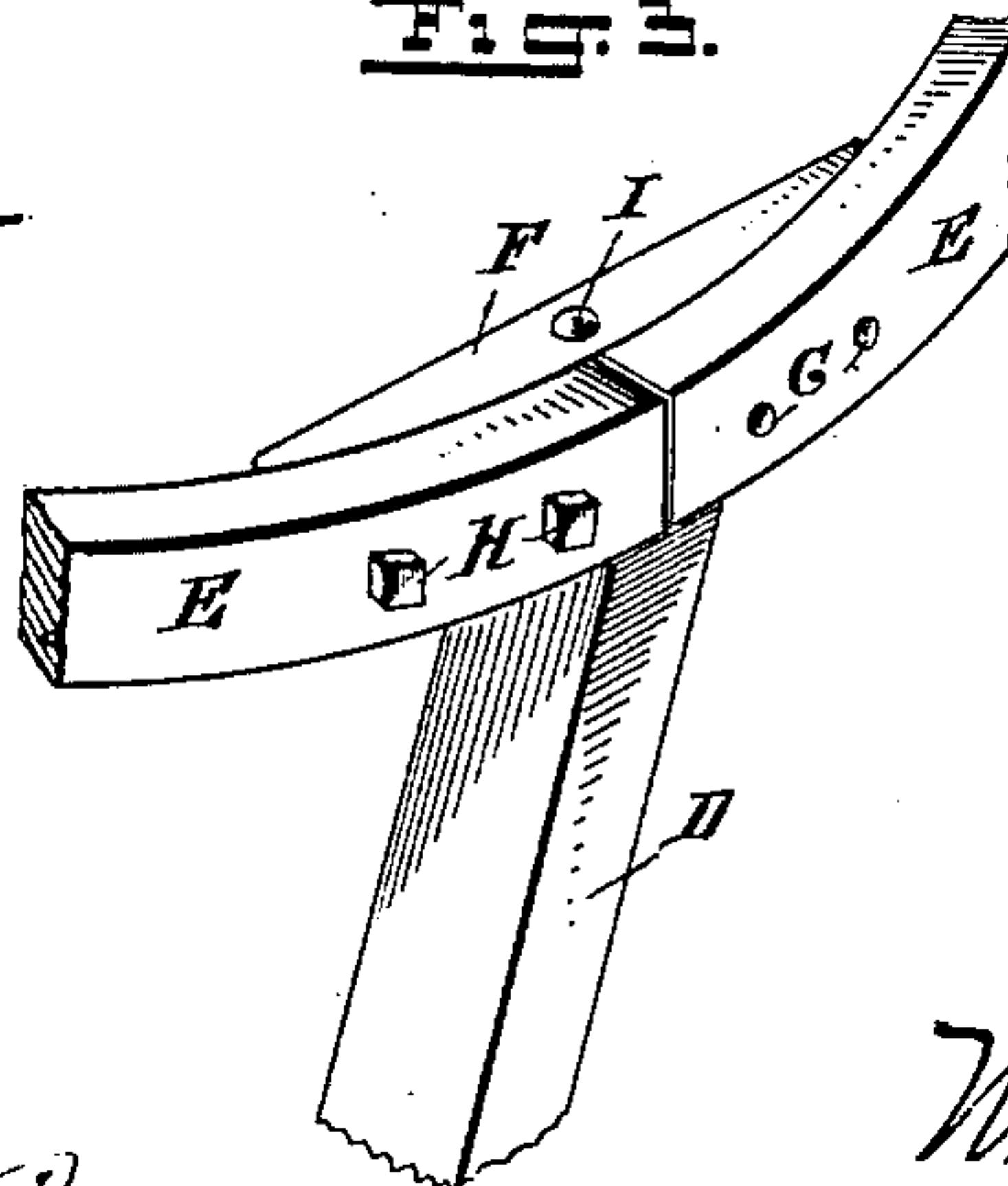
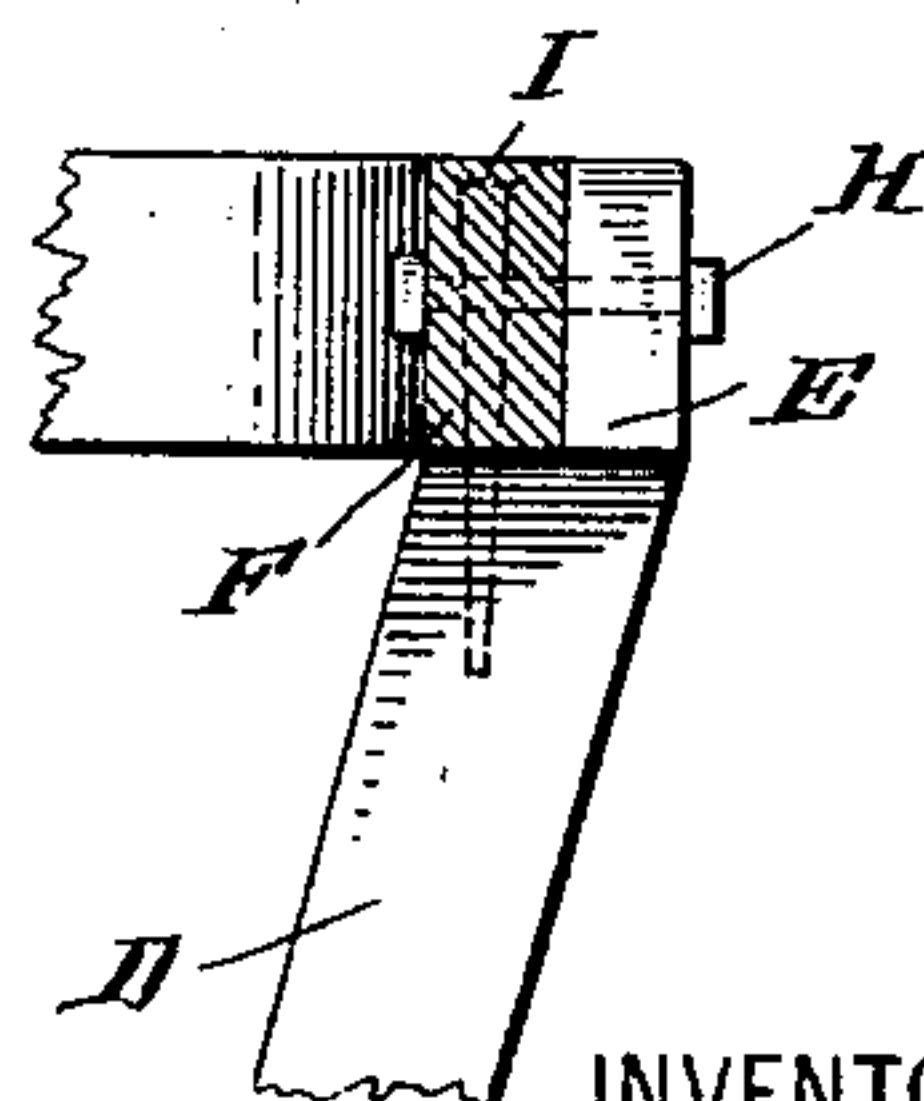


Fig. 3.



WITNESSES:

Geo. M. Waylor.  
Edgar R. Mead.

INVENTOR  
William H. McFarland  
BY  
Phillips Abbott  
ATTORNEY

No. 677,094.

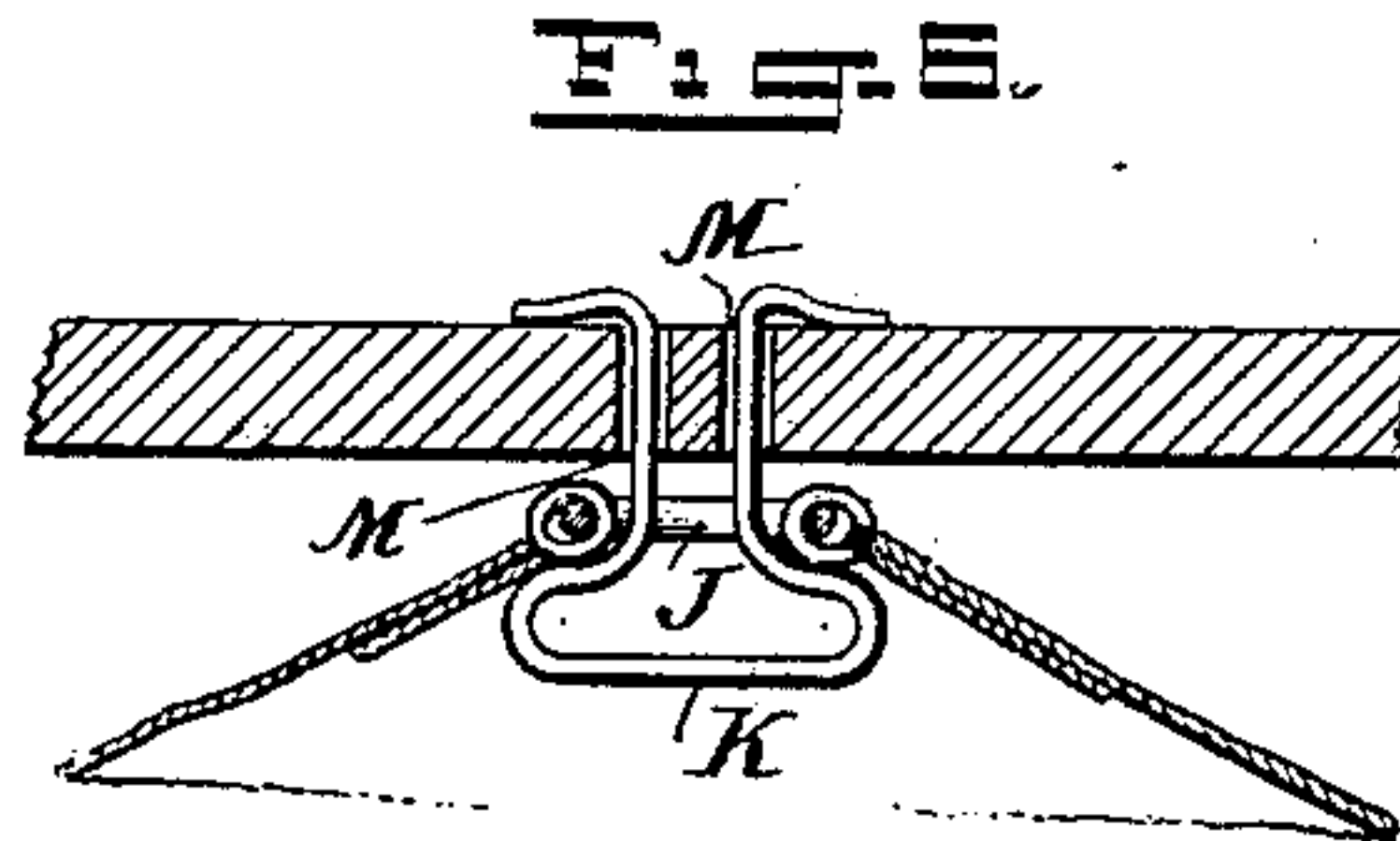
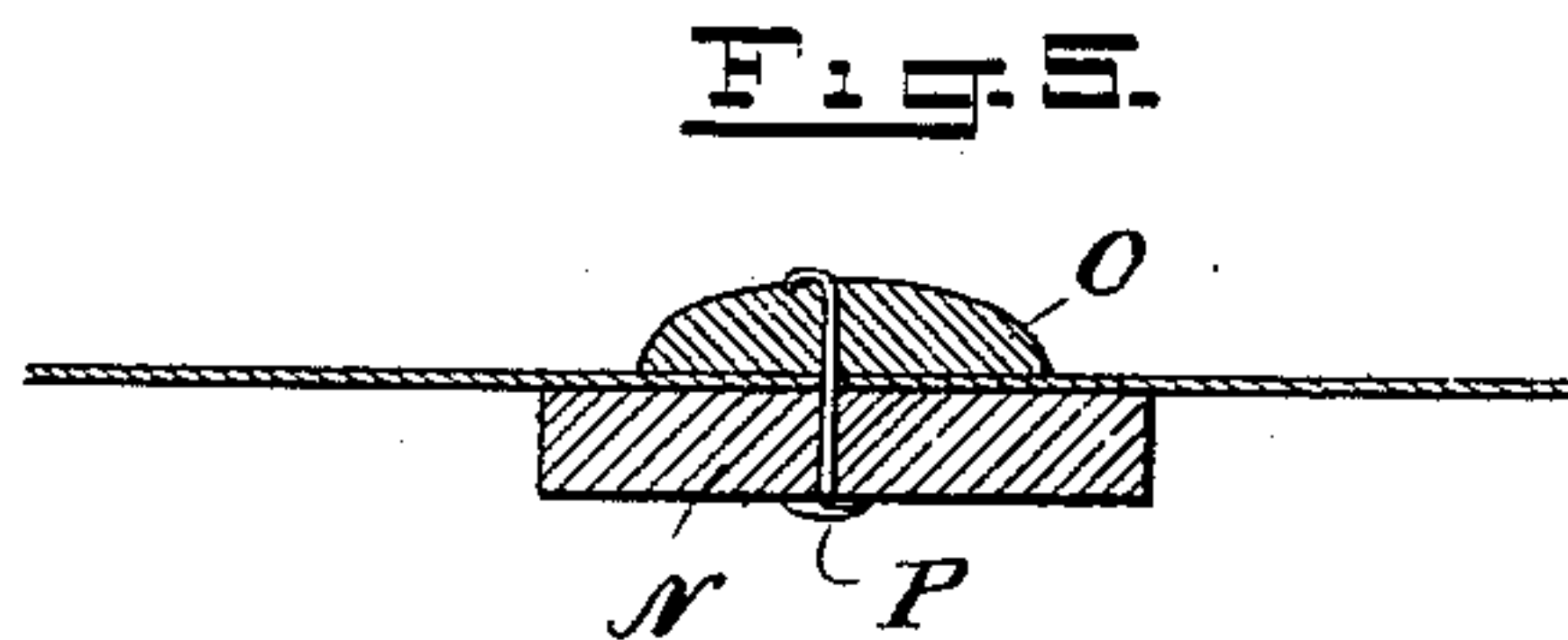
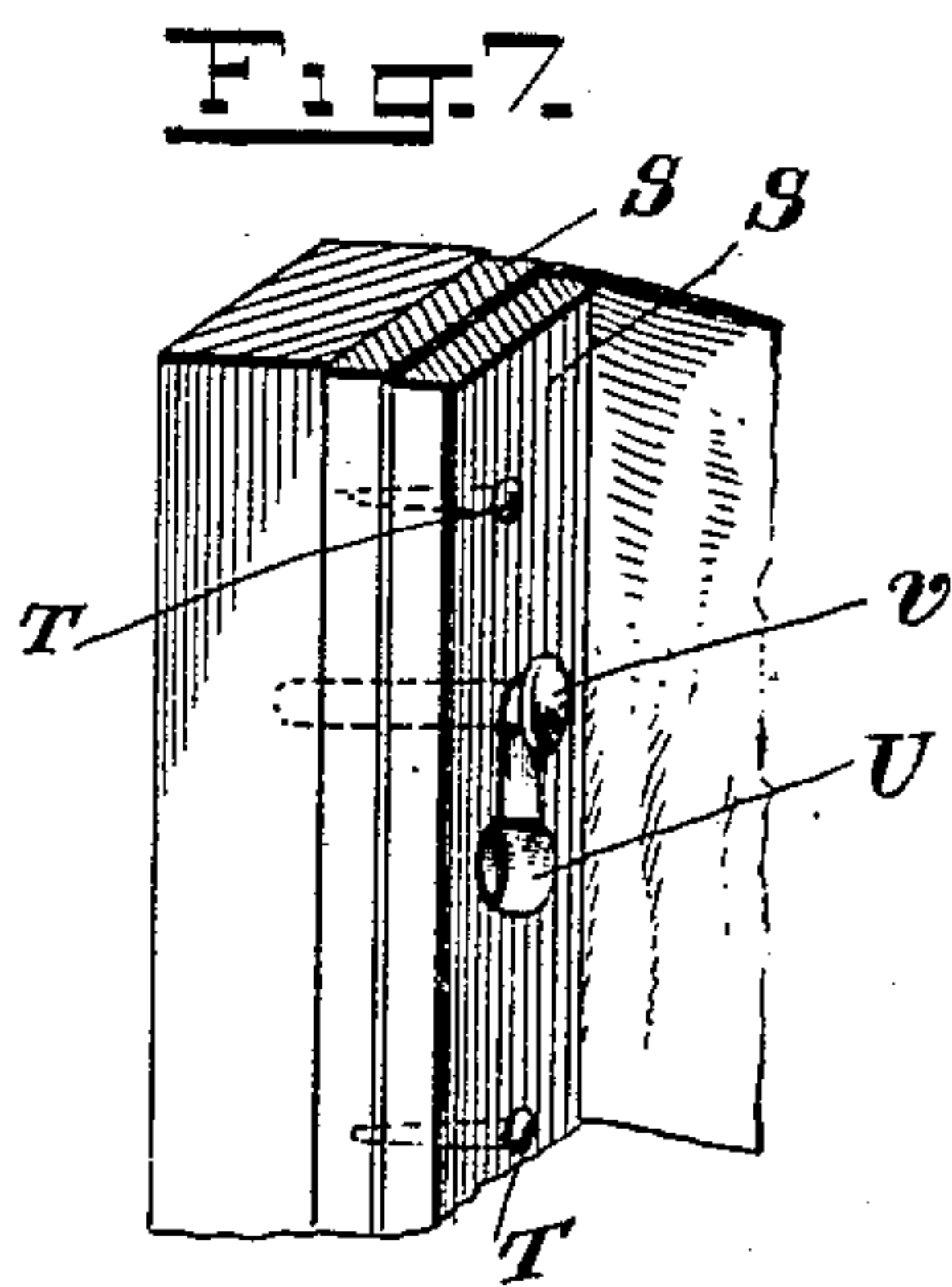
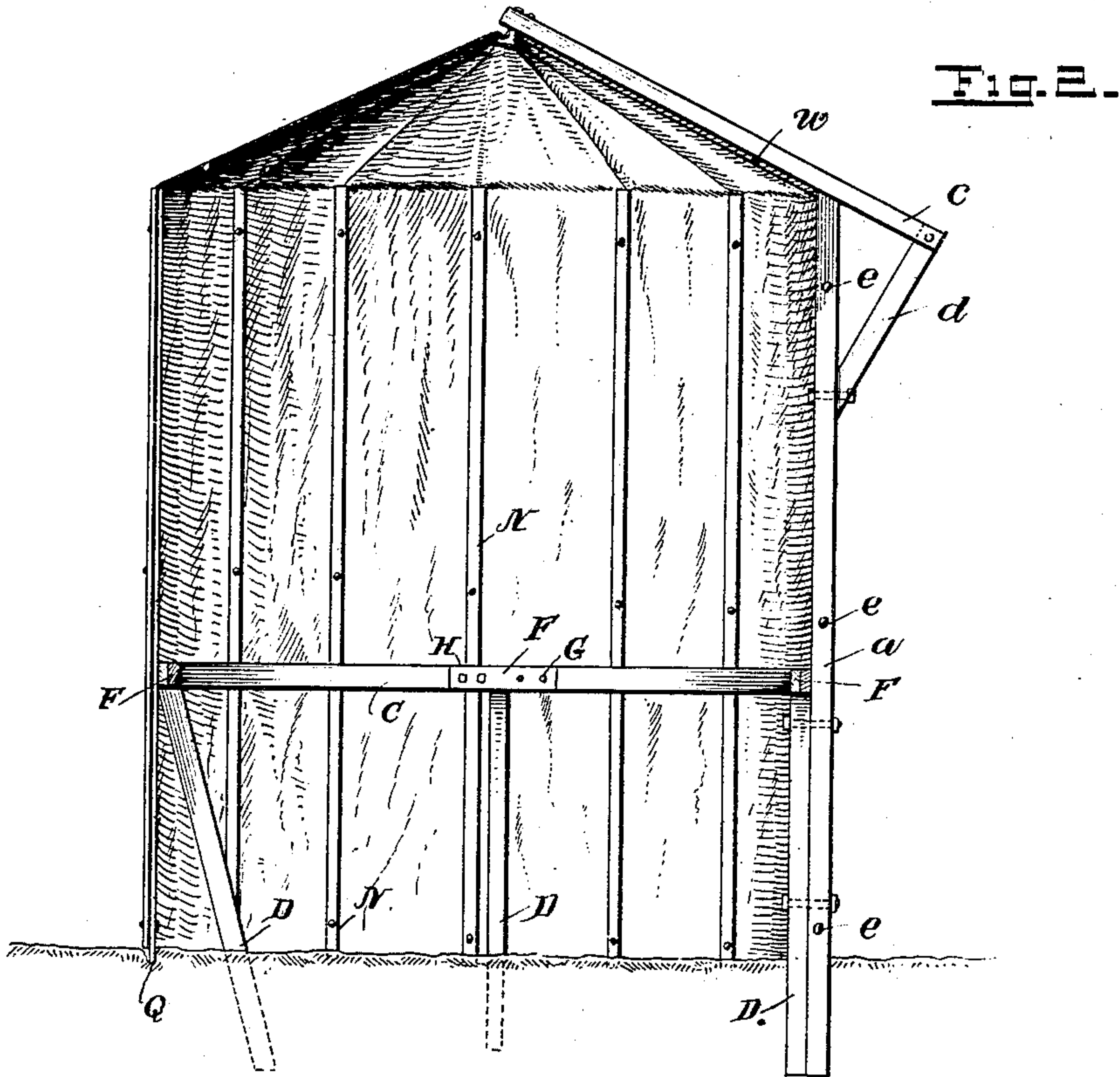
Patented June 25, 1901.

W. H. McFARLAND.  
PROTECTIVE TENT FOR TREES.

(Application filed Dec. 10, 1900.)

(No Model.)

3 Sheets—Sheet 2.



WITNESSES:

Geo. W. Maylor  
Edgar A. Mead.

INVENTOR

William H. McFarland

BY

Phillips Abbott  
ATTORNEY

No. 677,094.

Patented June 25, 1901.

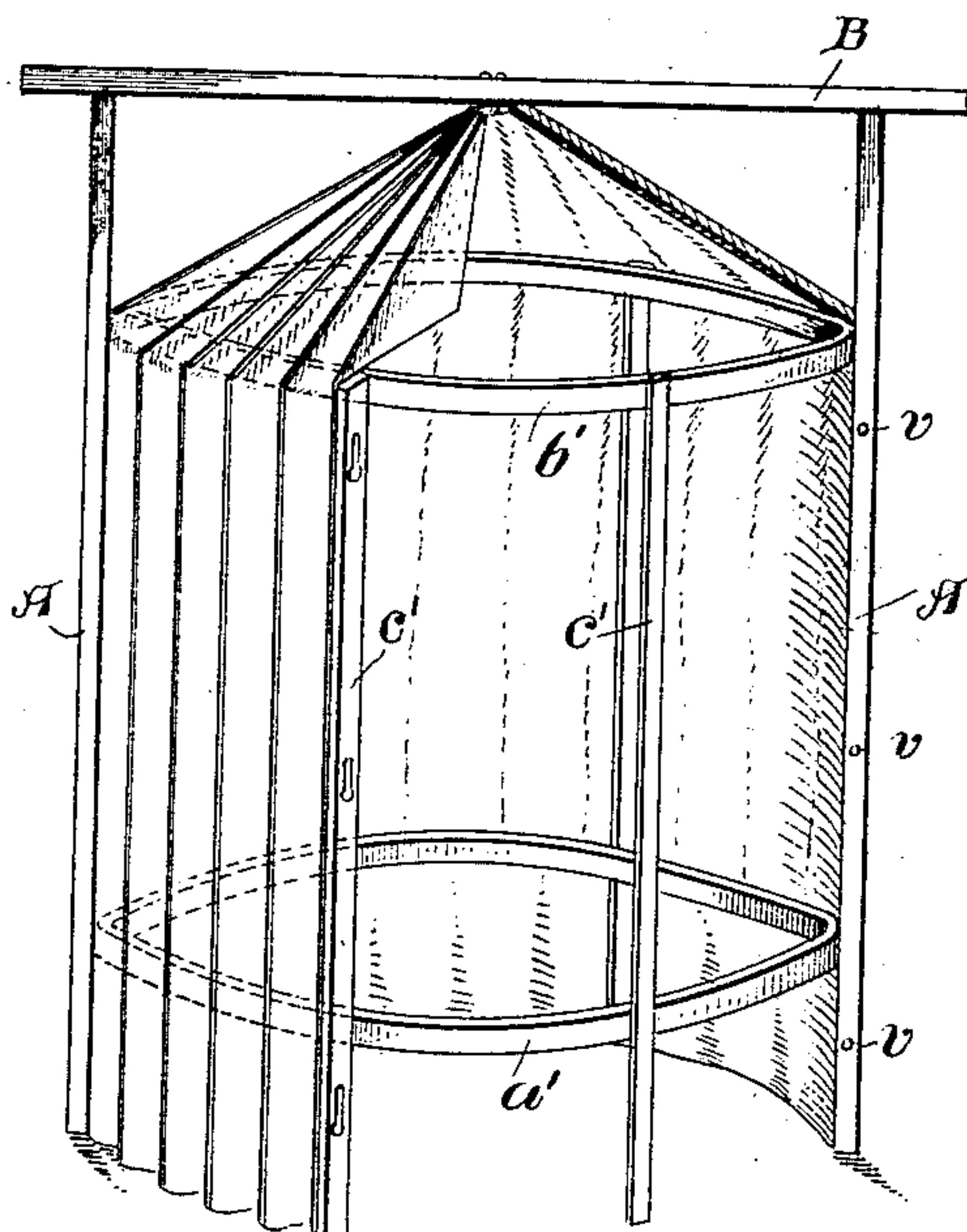
W. H. McFARLAND.  
PROTECTIVE TENT FOR TREES.

(Application filed Dec. 16, 1900.)

(No Model.)

3 Sheets—Sheet 3.

Fig. 5.



WITNESSES:

*Geo. W. Maylow*

*Edgar A. Mead*

INVENTOR

*William H. McFarland*

BY

*Phillips Abbott*  
ATTORNEY



# UNITED STATES PATENT OFFICE.

WILLIAM H. McFARLAND, OF TITUSVILLE, FLORIDA, ASSIGNOR TO  
McFARLAND FRUIT PROTECTION COMPANY.

## PROTECTIVE TENT FOR TREES.

SPECIFICATION forming part of Letters Patent No. 677,094, dated June 25, 1901.

Application filed December 10, 1900. Serial No. 39,435. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM HENRY McFARLAND, a citizen of the United States, and a resident of Titusville, in the county of Brevard and State of Florida, have invented certain Improvements in Protective Tents for Trees, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, in which—

10 Figure 1 illustrates an elevation of a tent embodying the improvements and adapted to protect a large tree. Fig. 2 illustrates half of a tent, showing a different form of supporting structure or frame. Fig. 3 illustrates a detail of the knockdown hoop employed as a partial support for the tent. Fig. 4 illustrates a detail of the bar or rafter which covers and protects the meeting edges of the hood of the tent when the same is spread. 20 Fig. 5 illustrates a detail of the manner of attaching the flexible tent-distending ribs to the tent. Fig. 6 illustrates a detail of the hood-suspending device. Fig. 7 illustrates a detail of the means employed to attach the free edges of the tent to the supporting-upright for the structure. Fig. 8 illustrates a detail of the manner in which the hoop may be attached to the posts which support it. Fig. 9 illustrates the tent with the vertical ribs 30 omitted, other means being provided for distending the tent.

I wish it to be understood that the construction and arrangement of the parts constituting the protective tent about to be described 35 by me and illustrated in the accompanying drawings are given as desirable forms in which they may be made, but that I do not limit myself to the same, for it will be obvious to those who are familiar with this art that many alterations may be made therein 40 without departing from the essentials of the invention.

Tree-protective tents as they have been made prior to this present invention have been 45 objectionable for several reasons—i. e., they have been expensive or cumbersome or found impractical when put to actual service. After extensive experience in this field I have found that a protector constructed on the plan about 50 to be described possesses many advantages over all others, among which are the follow-

ing: inexpensiveness, lightness, durability, ease of operation, ability to withstand heavy winds, and adaptability to be used as a half-protector to shield from sun or wind, yet afford desirable air circulation. 55

I make the supporting-frame for my large tents somewhat different from those for smaller ones, because the weight of the large tents, particularly when wet or if subjected 60 to high winds, is apt to bend over or distort the supporting-frame if made as the smaller frames are preferably made.

I will first describe the structure as I make it for large tents, and I refer to Fig. 1 of the 65 drawings, which shows this form.

A A are two uprights or posts, and B a cross-bar connecting them at the top.

C is a hoop of about the diameter of the tent. It is supported a suitable distance above 70 the ground by the uprights A A and by other posts D D. I prefer that the posts D D should be set at an angle, as shown, the better to brace the hoop and through it the whole structure. The uprights and the posts are set into 75 the ground about the tree to be protected a sufficient distance to insure stability.

In order that the frame may be "knock-down," so called, I prefer to make the connection between the uprights A A and the 80 cross-bar B of a detachable form, and also the hoops are made in sections—that is to say, (referring to Figs. 3 and 8,) pieces E are bent in segmental form on the desired radius, and at the meeting ends of the sections there 85 is provided a junction-piece F, which is nailed or otherwise permanently attached to the end of one section, as shown at G, and adapted to be bolted or otherwise attached to the end of the adjoining section, as at H, at the time 90 of erection. When the parts are in place about a tree, a single nail of suitable length, as at I, (see Fig. 8,) may be driven through the junction-piece or through the end of one of the hoop-sections, as preferred, into the 95 post or upright, as the case may be. Thus this part of the structure will be erected, and when desired the nails and bolts or other equivalent devices may be easily loosened and the parts separated for transportation. 100

The tent proper embodies a hood portion and a body or cylindrical portion. If these



parts are separately made, they are united at the eaves of the tent. They may be made in any preferred manner and of any preferred material—preferably cotton goods treated so as to preserve it against injury by mildew or other destructive agency. The hood is preferably made conical, as shown, and is centrally attached to the cross-beam B in some suitable manner. I prefer the device shown in Fig. 6, in which J illustrates a ring to which the apex or center of the hood is attached. K is a piece of relatively stiff wire, bent at L into an enlarged form, which cannot pass through the ring J. The ends of the wire in the first instance are straight and are passed through the ring from the under side and thence through a hole or holes M M in the cross-bar B and are then bent over, as shown, by a blow from a hammer or otherwise.

In order that the tent may assume and maintain its proper shape, so as to inclose yet not press upon the tree and be able to withstand high winds, I secure, preferably to the inside, at stated distances, wooden ribs or slats N. They are preferably made of relatively thin and strong material, so as to bend, and thus elastically resist the pressure of the wind, and they tend always to return the tent to its normal cylindrical form. I prefer to attach the ribs to the tent as shown in Fig. 5—that is to say, I place the ribs N on the inside of the tent and other strips O, of molding or similar material, on the outside, and then firmly clamp the material of the tent between them by driving nails P through both pieces and clenching them at their points, as shown. In this way the attachment is secure, the tent is not apt to be torn in use, and the ribs on the inside bear against the hoop, which, coacting with the ribs, sustains the tent. In order that this operation may be more effective, I prefer to extend the ribs below the lower edge of the tent three or four inches, as shown at Q, so that they may in use wear a channel R in the soil, against the sides of which they will be braced, or if the soil is not sufficiently soft for this to result, then the ends of the ribs may be thrust by hand into the soil when the tents are spread.

In order that the tents may be more easily manipulated if they be large and also so that one half only of each tent may be used to act as a wind-break or sunshade for the tree, leaving the other half open for free air circulation and rainfall, I prefer to attach the tent on the central vertical line midway between its free edges to one of the uprights or to the single upright, if but one be used, as in the form hereinafter to be described. When so made, each half of the tent may be operated independently of the other, and it may be fully spread by taking hold of the free edge of one half and opening it by circular movement to the right and the other half by a like movement to the left. In order that the free edges of the respective

halves may be secured when open, I clamp the edge of the tent material between two suitable strips S S, preferably of strong wood, as shown in Fig. 7, the strips being firmly nailed together, as shown at T T, and in these strips I make bayonet-slot openings U, (see Figs. 7, 1, 2, and 4,) within which bolt or screw heads V, which are screwed into the edges or sides of the upright at which the edges meet, interlock in a manner well understood.

In order that the meeting edges of the hood may be sheltered to exclude snow, cold, &c., yet afford desired ventilation for the tent, I provide a rafter-like device W, (see Figs. 1 and 4,) extending from the upright to the center of the hood. It is preferably made in the form of an inverted trough, the sides of which are preferably deflected or flared laterally, so that the edges of the hood may pass under them and be protected thereby.

Sometimes, especially when the tents are likely to be permanent, I omit the tent-distending ribs and secure the proper shape or distention of the tent in the manner shown in Fig. 9, wherein the same general construction as above set forth may be followed, but instead of the ribs there are two hoops employed—one near the ground, as seen at *a'*, and the other, *b'*, at the eaves-line of the tent. These hoops may be supported on the uprights of the frame and also on auxiliary supports *c' c'* to give the needful stability to them.

The frames for the comparatively small tents are or may be made as shown in Fig. 2. In this form instead of there being two uprights there is one only, (shown at *a*,) which may be bolted or nailed to one of the posts D which support the hoop, and at the upper end of this upright the inverted gutter or rafter-like device W extends at the same angle as that of the hood to the apex or center thereof. It may beneficially extend downwardly beyond the upright, as at *c*, and be stayed by a brace *d*. In these small tents I sometimes make the tent proper in such manner as to be opened by a right-and-left movement, already described, in which event the meeting edges are connected by any suitable means, such as cords, buttoning, or the interlocking of two slats by means of a bayonet-slot connection, already described. Sometimes, as shown in Fig. 2, I attach one edge of the tent material to the upright, instead of the central part vertically thereof, and spread the tent by carrying it in a circular manner about the hoop by movement all in one direction and then confine the free edge to the upright by the bayonet-joint-attaching devices, already explained. The bolt or screw heads are seen at *e e*, Fig. 2.

As already stated, I do not limit myself to the special construction of any of the parts above referred to. The forms and the method of arranging them above described have proved very effective in actual use, and I therefore describe and illustrate them, but



do so as one example only of many in which the improvements made by me may be carried out.

Having described my invention, I claim—

1. In a protective tent for trees the combination of a frame having a fixed central support for the hood, ribs attached to the sides of the tent, and a hoop located above the ground against which the ribs are supported when the tent is spread, for the purposes set forth.

2. In a protective tent for trees the combination of a frame having a fixed central support for the hood, flexible ribs attached to the sides of the tent, and a hoop located above the ground against which the ribs are supported when the tent is spread, for the purposes set forth.

3. In a protective tent for trees, the combination, with a superposed fixed frame for the support of the tent, of the tent itself adapted to be spread and closed by folding horizontally, a hoop adapted to support the sides of the tent, and flexible ribs permanently attached to the sides of the tent whereby it is distended, the ribs adapted to be supported by the said hoop, and their lower ends projecting below the lower edge of the tent so that when opened and closed they will, under the action of gravity, cut a channel in the earth in which they will be supported, for the purposes set forth.

4. In a protective tent for trees the combination of a frame having a fixed central support for the hood, ribs attached to the sides of the tent, the lower ends whereof project below the lower edge of the tent, and a hoop located above the ground against which the ribs are supported when the tent is spread, for the purposes set forth.

5. In a protective tent for trees the combination of a frame having a fixed central support for the tent, a tent embodying side walls and a hood, attached vertically to the support about midway between its free edges, a hoop located above the ground to keep the tent distended, and means to hold the free edges of the tent together when spread, for the purposes set forth.

6. In a protective tent for trees the combination of a frame for the support of the tent, a tent embodying side walls and a hood, attached vertically to the support about midway between its free edges, ribs attached vertically to the tent, a hoop located above the ground against which the ribs are supported when the tent is spread, for the purposes set forth.

7. In a protective tent for trees the combination of a frame for the support of the tent, a tent embodying a hood and side walls attached vertically to the support about midway between its free edges, flexible ribs attached to the tent, the lower ends of which project below the lower edge of the tent, a hoop located above the ground against which

the ribs are supported when the tent is spread, and means to hold the free edges of the tent together, for the purposes set forth.

8. In a protective tent for trees the combination of a frame for the support of the tent having a central fixed support for the hood, a tent embodying side walls and a hood, the side walls being attached vertically to the frame on one line only, and that about midway between its free edges, a hoop located above the ground to keep the tent distended, and means at each of the free edges of the tent whereby they may be held together, for the purposes set forth.

9. In a protective tent for trees the combination of a frame for the support of the tent, embodying a central support for the hood and a rafter-like bar to cover the meeting edges of the hood when the tent is spread, and a tent embodying side walls and a hood, the same split vertically from bottom to top, for the purposes set forth.

10. In a protective tent for trees the combination of a frame for the support of the tent, embodying a fixed central support for the hood and a rafter-like bar to cover and protect the meeting edges of the hood; the tent itself, embodying side walls and a hood, attached vertically to the support about midway between its free edges; a hoop located above the ground to distend the tent; and means whereby the free edges of the tent and its hood may be held together when the tent is spread, for the purposes set forth.

11. In a protective tent for trees the combination of a frame for the support of the tent, embodying a fixed central support for the hood and a rafter-like bar to cover and protect the meeting edges of the hood; the tent itself, embodying side walls and a hood, attached vertically to the support about midway between its free edges; a hoop located above the ground to distend the tent, flexible ribs attached vertically to the walls of the tent, and means whereby the free edges of the tent and its hood may be held together when the tent is spread, for the purposes set forth.

12. In a protective tent for trees, a frame for the support of the tent, embodying a hoop located above the ground and supported upon posts set in the ground, an upright bolted to one of the posts, and an arm supported upon the upright and having at its end a fixed central support for the hood and tent, for the purposes set forth.

13. In a protective tent for trees the combination of a frame for the support of the tent, embodying a hoop located above the ground and supported upon posts set in the ground, an upright bolted to one of the posts, and an arm supported upon the upright and having at its end a fixed central support for the hood and tent; and a tent, embodying a hood and side walls and flexible ribs connected to the side walls, for the purposes set forth.



14. In a protective tent for trees the combination of a frame for the support of the tent, embodying a hoop located above the ground and supported upon posts set in the ground, 5 an upright bolted to one of the posts, and an arm supported upon the upright and having at its end a fixed central support for the hood and tent; a tent, embodying a roof and side walls; and flexible ribs connected to the side 10 walls, the ends of the ribs projecting below the lower edge of the tent, for the purposes set forth.

15. A "knockdown" frame for protective tents embodying posts adapted to be set in 15 the ground, an upright adapted to be bolted to one of the posts, and a "knockdown" hoop for the distention of the tent, embodying hoop-

sections and junction-pieces uniting the several ends as described, for the purposes set forth.

16. A frame for a protective tent for trees embodying uprights for the support of the tent and a rafter-like bar which conforms substantially to the inclination of the hood or roof of the tent, beneath which the edges 25 of the hood are protected when the tent is spread, for the purposes set forth.

Signed at New York, in the county of New York and State of New York, this 5th day of December, 1900.

WILLIAM H. McFARLAND.

Witnesses:

PHILLIPS ABBOTT,  
EDGAR R. MEAD.