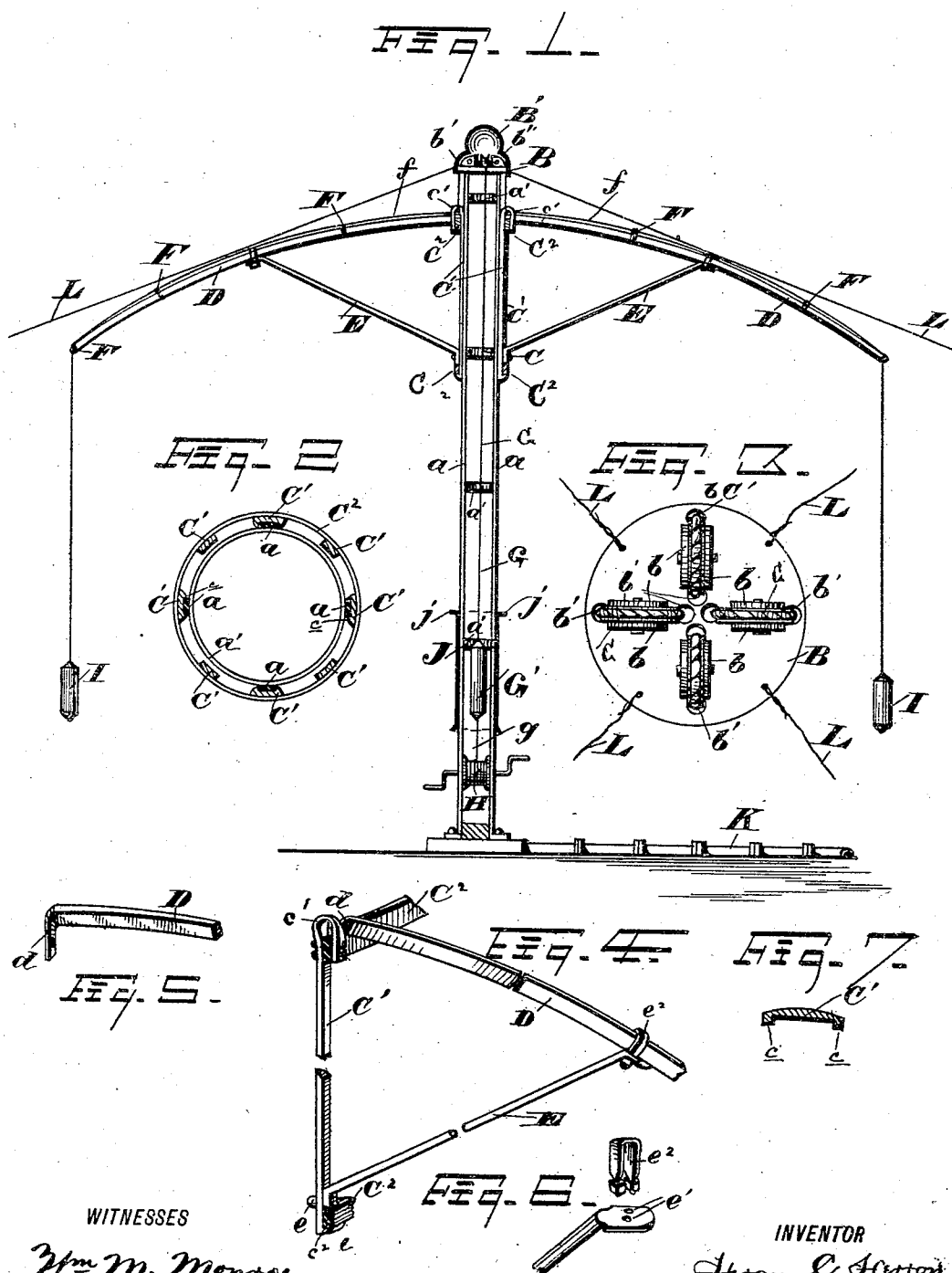


2 Sheets—Sheet 1.

PORTABLE ROOF.

Patented July 7, 1885.



WITNESSES

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Geo. W. King

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(No Model.)

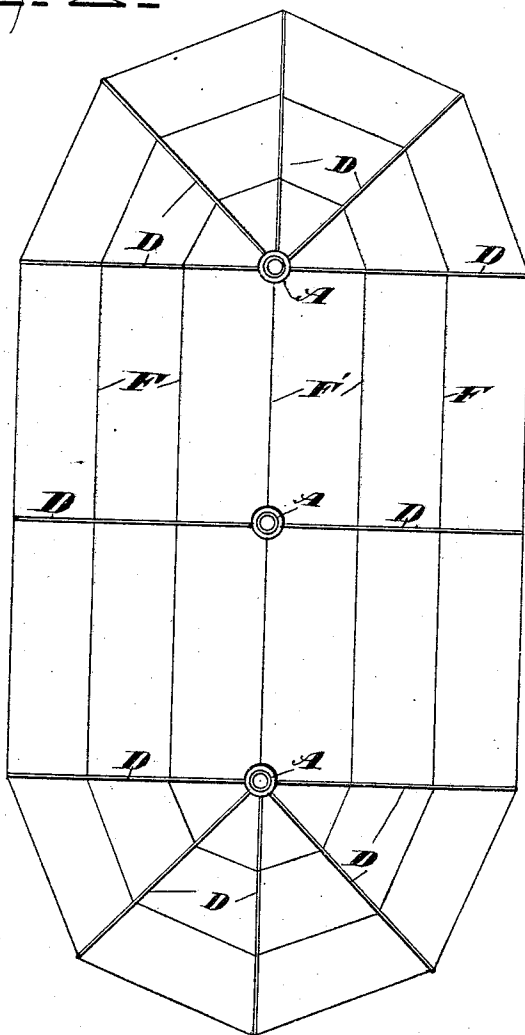
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PORTABLE ROOF.

No. 321,722.

Patented July 7, 1885.

Fig. 2.



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UNITED STATES PATENT OFFICE.

HIRAM C. HERRON, OF CLEVELAND, OHIO.

PORTABLE ROOF.

SPECIFICATION forming part of Letters Patent No. 321,722, dated July 7, 1885.

Application filed December 29, 1884. (No model.)

To all whom it may concern:

Be it known that I, HIRAM C. HERRON, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Portable Roofs; 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 pertains to make and use the same.

My invention relates to portable roofs, having for its object a light, strong, and durable structure, with the parts mostly detachable for convenience in transportation. A roof, preferably umbrella-shaped, that may be raised or lowered at pleasure, is supported on a hollow skeleton post that may serve as a ventilator, and the roof is supported by cables, and counterbalanced by a weight operating in the hollow post.

My invention also consists in details of construction hereinafter described. Asaforesaid, the roof is preferably umbrella-shaped, but is not intended to fold like an umbrella. The ribs, therefore, that support the roof and the braces that support the ribs are not hinged, but are bolted, respectively, to the upper and lower ends of a cage or frame that slides on the supporting-posts. A hollow skeleton post that may serve as a ventilator has inside a counterbalance connected by cables that pass, as shown, over grooved pulleys at the top of the post with the cage or frame that supports the roof, by means of which the roof may be raised or lowered on the post with little effort.

The details of construction are illustrated in the accompanying drawings, in which Figure 1 is an elevation in section of my improved device. Fig. 2 is an enlarged transverse section through the post and sliding frame. Fig. 3 is a plan view of the cap of the post, and shows the connections therewith. Fig. 4 is an enlarged view in perspective of a portion, respectively, of a brace, rib, and the sliding frame, showing the manner of attaching the parts. Fig. 5 is an enlarged view in perspective of the upper end of one of the ribs. Fig. 6 is an enlarged view in perspective of the outer end of a brace and the clamp by which it is secured to the rib. Fig. 7 is a transverse section of one of the bars C'. Fig. 8 is a plan view of the frame-work of an elongated roof when three supporting-posts are used.

A represents a supporting-post that is constructed of flat bars *a*, that may be more or less in number, according to the dimensions of the post and the size in cross-section of the bars, four such bars being shown in Fig. 2. These bars are riveted to and on the outside of the bands *a'*, that are located at suitable distances apart to support the bars. The post at the top is provided with a cap, B, of considerable size, so as to project beyond the post. The cap has upwardly-projecting ears or lugs *b*, arranged in pairs, to support any desired number of sheaves *b'*. On top of the cap is mounted the hood B', usually of galvanized sheet-iron, that protects the sheaves from the weather, and the band may of course be made ornamental, if preferred.

A frame or cage, C, is arranged to embrace and slide on the post A, and is constructed as follows: Upright bars C', usually eight in number, and preferably of the shape that is commonly used for iron fence-rails, a section of which is shown in Fig. 7, are secured to the inside of the bands C², and the parts so arranged that each of the bars *a* of the post will have a bar, C, to slide thereon, with the ribs *c* embracing the edges of the bar *a*, to prevent the cage from turning on the post. A suitable number, usually three or four, of the bars C' are bent over at the top, forming loops *c'* (see Fig. 4) for attaching the cables that support the roof, such ends being secured by the same rivets that secure the band to the inner part of the bar. The ribs D, that support the roof, are preferably of iron or steel, are thin and broad, set edgewise, and bent in about the form shown in Fig. 1. The top ends are twisted a quarter of a turn, and are bent in the form shown at *d*, Fig. 5, so as to hook on the top band, C², to which they are secured by small bolts, and are placed by the side of the respective bars C'. The braces E are usually of round iron, or square, if preferred, and are flattened at the ends, and bent as shown in Fig. 4. The toe of the brace rests on the lower band, C², and is secured by a bolt, *e*, to one of the bars C', and if this bar is one that slides on a bar *a* the head of the bolt is countersunk flush with the face of the bar C'. As the bolts *e* are quite small, so as not to materially weaken the parts through which they pass, the downward pressure of the brace is intended to be

mostly supported by the band, and as the rivets that secure the band to the bar C' are small, these bars are upset or turned outward a trifle, forming a slight shoulder, c^2 , that supports these bands. The outer end of the brace has holes e' , to receive the ends of the clip c^2 , that secures the bar to the rib D, and this flattened part of the brace may extend somewhat along the rib to stiffen the latter. The ribs are connected by wires F, and over the framework thus formed is stretched a cover, f , of any suitable water-proof fabric.

To the loop e' are attached preferably small wire cables G, that pass over the sheaves b' and down inside the part A to the weight G' , that more or less counterbalances the roof, according to circumstances, as hereinafter mentioned. To the bottom of the weight G' is attached a cable, g , that leads to a windlass, H, by means of which the weight G' may be drawn down and the roof raised. The weight G' is usually conical at the ends, so that it may readily pass the bands a' .

If the roof is used to protect stacks of hay, grain, &c., the windlass H and cable g are omitted, and the weight G' is made to more than counterbalance the weight of the roof, and in such case small weights I are suspended to the outer ends of the ribs D, that hold the roof down, and by removing the weights I the roof will be drawn upward by the weight G' .

In building a stack around the post A the hay or grain might enter between the bars a , so as to interfere with the free movement of the weight G' . To prevent this, a shield, J, is provided, consisting of a sheet-iron cylindrical structure embracing the post loosely, and with ears j at the top for raising it as the stack progresses. This shield is usually three or four feet long, (more or less,) and is slid along up the post from time to time and kept where the grain or hay is being packed. A ventilating-tube, K, may lead from the outside of the stack and connect with the bottom of the post, and in open relation therewith.

With the construction shown the roof may be raised out of the way in constructing or removing the stack, or to admit air or sunlight to the same; or may be lowered, so as to protect the stack from the weather, and with the roof raised or lowered a free circulation is had through the post. The post need not enter the ground, but may rest on any suitable foundation, such as a plank, block, or stone, and is held upright by the guy-wires L.

When for any purpose a larger roof is required than can practically be made in the round form, an oblong roof may be constructed with two or more posts, as shown in

Fig. 8. If there are one or more center posts used, such posts only require two ribs, extending in opposite directions, as shown, and the end posts only require ribs half-way around the posts. This form is convenient for brick-yards, and the facilities with which the roof can be elevated to admit air and sunshine and lowered to exclude the storms renders the device invaluable in this industry.

What I claim is—

1. The combination, with a hollow supporting-standard, of a roof having a central opening therein for the passage of the standard, and a counterbalance-weight located within said standard and connected to the roof, substantially as set forth.

2. In a portable roof, a hollow skeleton post, and a skeleton frame to slide thereon, and ribs to support the roof detachably secured to the top of the sliding frame, and braces to support the ribs detachably secured to the bottom portion of the said frame, and the ribs and braces secured to each other by means of clips, substantially as set forth.

3. In a portable roof, in combination with a skeleton post and skeleton frame to slide thereon, the latter provided with a framework and roof, a cap attached to the top of the post, and sheaves mounted thereon, a counter-balance operating in the post and connected with the sliding frame by cables passing over the said sheaves, substantially as set forth.

4. The combination, with a hollow skeleton standard constructed to serve as a support for the roof, and a ventilating-shaft, of a roof having a central opening for the passage of said standard, and a counterbalance-weight connected with said roof, substantially as set forth.

5. In a portable roof, in combination with a skeleton post, a skeleton frame to slide thereon, and consisting, essentially, of the bars C' , secured to and on the inside of the bands C^2 , and the former provided with the loops e' and the shoulders c^2 , substantially as set forth.

6. In a portable roof, in combination with a skeleton post and skeleton frame sliding thereon, ribs set edgewise, and twisted and bent at the upper end to hook on and lay flatwise on the upper band, C^2 , substantially as set forth.

In testimony whereof I sign this specification, in the presence of two witnesses, this 12th day of December, 1884.

HIRAM C. HERRON.

Witnesses:

ALBERT E. LYNCH,
CHAS. H. DORER.