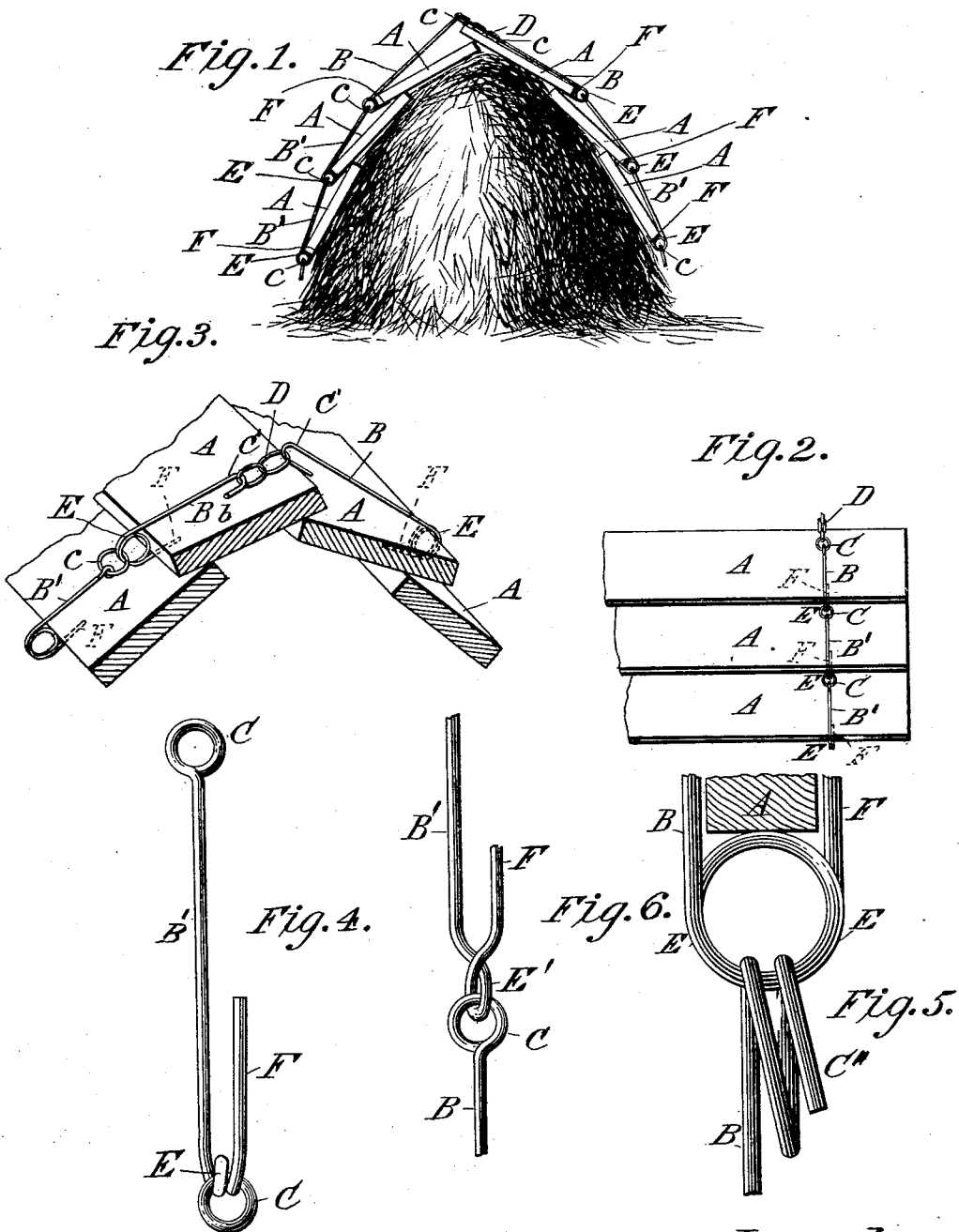


(No Model.)

J. H. RICE.
PORTABLE ROOF.

No. 480,859.

Patented Aug. 16, 1892.



Witnesses:
A. D. Miller
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UNITED STATES PATENT OFFICE.

JOHN H. RICE, OF HENDERSON COUNTY, ILLINOIS.

PORTABLE ROOF.

SPECIFICATION forming part of Letters Patent No. 480,859, dated August 16, 1892.

Application filed March 11, 1890. Serial No. 343,563. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. RICE, of the county of Henderson and State of Illinois, (whose post-office address is Keithsburg, Mercer county, Illinois,) have invented a certain new and useful improvement in supports for the boards of a portable roof or covering suitable for the protection of ricks or stacks of hay, straw, or grain, or wherever a portable roof is desired; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My present invention consists in an improvement upon my invention patented in the United States by Patent No. 416,747, dated December 10, 1889, to which patented invention an objection exists that the rods, which have holders thereon for receiving the lower edges of the covering-boards, not being securely connected together, may become lost from each other. It is therefore the object and principle of construction of my present invention that these rods, or certain of them, be united together to form a supporting-chain or that the holders may be connected together on a supporting-chain, which device thus constructed, in connection with the boards whose lower edges rest in the holders, forms a portable roof which is easily set up, taken down, and moved from place to place and is easily adaptable to the size of the object covered.

This my present invention is embodied in and its object I attain by the novel features of construction and arrangement hereinafter described.

In the annexed drawings, Figure 1 represents an end elevation of my portable roof; Fig. 2, a portion of the side elevation; Fig. 3, a portion of said roof drawn in perspective. Figs. 4, 5, and 6 represent different modes of construction of the links comprised in the chain and their connecting parts.

These drawings show the roof composed of wooden boards A A A, which rest directly on the stack and are held in position by the chain B B'. The two upper links of the chain, (hav-

ing holders,) one on either side of the apex of the roof, are designated by the letters B on the drawings, the others being designated by the letters B'. These links consist of metal rods. The two rods B are suitably connected at their upper ends, preferably by the hooks C' C', their upper ends being hooked into the links of the short chain D; but the upper ends of the links B may be formed like the upper ends of the links B' and may be connected together directly or in other suitable manner. To form the lower ends of these links B and B', the rods may be turned or bent once and a half round, thus forming spirally a ring E E at the lower end of each link, and the continuation, after forming the ring, of the rod a few inches parallel with the main part of the link forms the holder F F F, as shown in Fig. 4; or in another form of construction shown in Fig. 6 to form the lower ends of the links these rods may be turned or bent to form the ring E' E', and the continuation, after forming the ring, of the rod a few inches parallel with the main part of the link forms the holder above the ring. The holder F, formed at the lower end of each link, receives the lower edge of a board, which is thus held in position. The upper ends of the links B' may be turned to form the closed ring C C C, as shown in Fig. 4, by which they may be permanently fastened to the ring at the lower end of the link next above; or the upper ends of the links B' may be turned to form an open spiral ring C'', as represented in Fig. 5. When this construction is adopted, the links may be easily connected and disconnected by running the ring at the lower end of the link above through the open spiral ring, and the links when thus connected will not become detached or lost from one another and yet may be easily separated when desired.

It is preferable that boards of sufficient width be used to allow each to be overlapped by the board above, to more effectually shed the water. Such an arrangement of chain provided with holders, as above described, is of course necessary near either end of the boards in order to secure them in position. In the construction of this chain in forms above described, iron rods or wires of about one-fourth inch in diameter may be used;

but the rod forming the links of the short chain D may be smaller, say one-eighth or three-sixteenths of an inch. Boards of an inch in thickness and about one foot wide I regard preferable, and I prefer to have them overlap about two inches. Weights may be attached to the ends of the chains in order to more completely prevent the displacement of the boards by the wind.

In putting this cover on the stack or object to be protected it is best to put on the two top boards first, and having secured them in position by placing their lower edges in the proper holders, then to place the two boards next below—one on each side—in position, slipping their upper edges under the board above and securing the lower edges in the proper holders, and so on down. Where a very long rick of hay, &c., is to be covered, several sets of boards placed end to end, with the ends somewhat overlapping, may be used, each set of boards being sustained by such arrangement of chains provided with holders.

It is obvious that whenever convenient the boards may rest on a suitable frame instead of resting directly on the object protected.

It is obvious that my present invention may be embodied in other forms than those above described, and I do not confine myself to such described forms, but claim all mechanical equivalents thereof.

It will be seen that this roof or covering will by reason of its weight and the flexibility of the chain closely adjust itself to the form of the object to be covered, and thus more completely protect it, that the covering-boards may rest directly on the stack, &c., without the necessity of a supporting-frame; also, that the roof may be adjusted to any-sized object by simply increasing or decreasing the length of the chains and the number of boards and holders, and that said roof may be easily set up, taken down, and moved from place to place.

As above stated, this my present invention consists in an improvement upon my invention patented to me in the United States by Patent No. 416,747, dated December 10, 1889; and I do not claim in this my specification, broadly, a portable roof consisting of boards supported by a series of rods having hooks at either end, the hook at the lower end of each rod receiving the lower edge of a covering-board and also the hook of the rod next below; but I confine the claims of this present specification to a construction in which the rods or links having the hooks or holders formed thereon for receiving the boards are securely connected together in a chain.

I am aware that prior to this my application United States Letters Patent No. 252,168, dated January 10, 1882, were issued to James W. Angus, assignor of one-half to John Shepherd, for a hay and grain cap. My invention differs from the construction described in

that patent essentially, and in at least the following particulars: First, in my roof (excepting the two top boards, which are held in position by their respective holders under their lower edges and also in the construction illustrated in the drawings by the chain over the top) the device used to hold the boards in position is the holders, in which rest their lower edges, their upper edges not being secured by any special device for that purpose, but in the construction illustrated in the drawings resting between the inside of the upper overlapping board and the hay, &c., covered. In the Angus patent the boards are retained in position not only by holders under their lower edges, but also by certain "under catches" which secure their upper edges; second, in my present invention the holders are at fixed distances apart, instead of being capable of being moved closer together and further apart on the support.

Having now fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A roof-supporting chain comprising a series of links having holders formed integral therewith and provided at their upper and lower ends with rings for securely connecting the links, substantially as shown and described.

2. An improved chain for connecting and supporting the boards of a portable roof, said chain comprising the links B and B', said links having holders formed thereon and rings formed on their lower ends, the upper ends of the links B having hooks and the links B' having rings whereby the different links are flexibly united, substantially as shown and described.

3. An improved supporting device consisting of a chain composed of a series of link-bars, said link-bars being formed with rings at their upper ends, hooks at their lower ends, and openings below the hooks, adapted to receive the ring upon the upper end of the adjacent lower link, substantially as shown and described.

4. An improved roof-supporting chain consisting of a series of securely-connected links, each link carrying a stationary holder adapted to receive and support the roof-boards, substantially as shown and described.

5. An improved roof-supporting chain consisting of a series of links having stationary holders thereon and provided at their upper and lower ends with rings for securely connecting the links, substantially as shown and described.

In testimony that I claim the foregoing as my own I affix my signature in the presence of two witnesses.

JOHN H. RICE.

Witnesses:

CYRUS W. RICE,
JAMES M. RICE.