

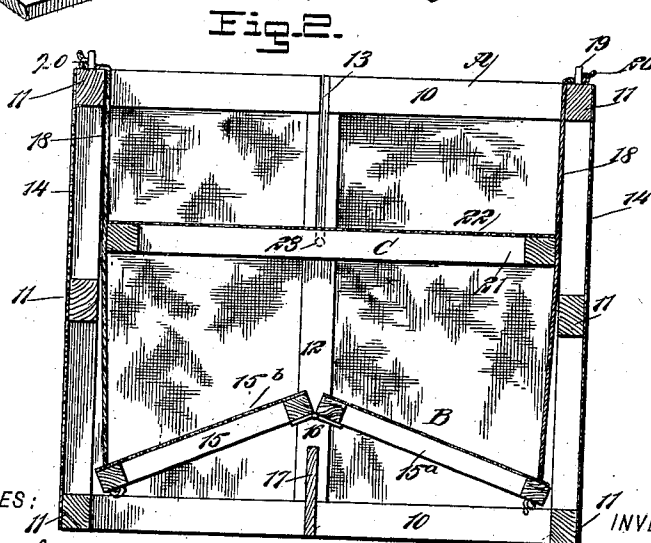
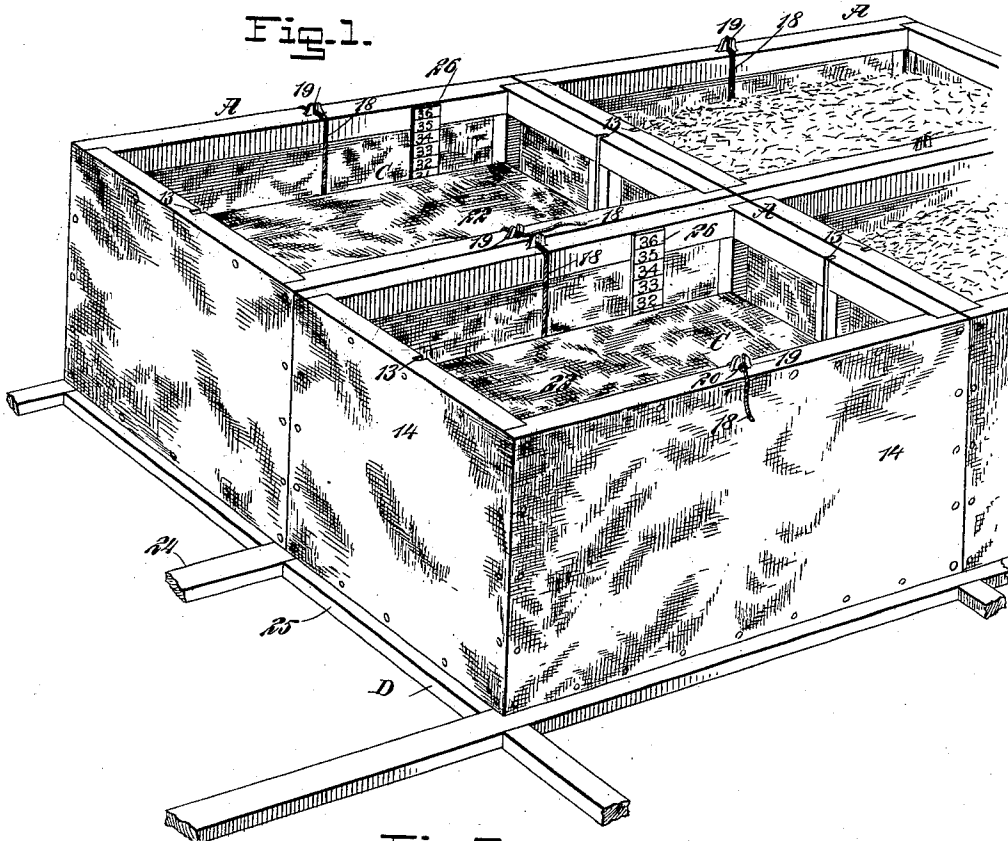
No. 660,408.

Patented Oct. 23, 1900.

A. WOLF.  
HOP DRIER.

(Application filed May 22, 1900.)

(No Model.)



WITNESSES:

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# UNITED STATES PATENT OFFICE.

ADOLF WOLF, OF SILVERTON, OREGON.

## HOP-DRIER.

SPECIFICATION forming part of Letters Patent No. 660,408, dated October 23, 1900.

Application filed May 22, 1900. Serial No. 17,561. (No model.)

*To all whom it may concern:*

Be it known that I, ADOLF WOLF, a citizen of the United States, and a resident of Silverton, in the county of Marion and State of Oregon, have invented a new and Improved Hop-Drier, of which the following is a full, clear, and exact description.

One purpose of the invention is to provide a construction of drier for hops by means of which the green hops received in the drier may be more perfectly, economically, and quickly dried than with the apparatus at present in universal use and to so construct the drier that the hops will be preserved in a perfectly whole condition and will retain a better flavor, value, and appearance than are obtainable under the present treatment of hops.

Another purpose of the invention is to provide a means of drying the hops which will economize in time, fuel, labor, and expense and to so construct the driers that the lupulin will be preserved and the hops may be dumped quickly and conveniently without damage.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in both figures.

Figure 1 is a perspective view of a series of driers and a perspective view of a platform adapted to be placed in a kiln and support the driers, and Fig. 2 is a transverse vertical section through one of the driers.

The frame A of the improved drier consists of upper and lower end bars 10 and upper, lower, and intermediate side bars 11, which are connected with the end bars in any suitable or approved manner, together with upright bars 12, which are located at the central portion of the ends of the drier-frame, and these upright bars 12 are provided with longitudinal grooves 13 in their inner faces at their upper ends, which grooves are continued through the inner faces of the upper end bars 10 of the frame. The frame A is covered at its ends and at its sides with sackcloth, wire-netting, or willow, reed, or ratan strips so woven that the interior of the drier will be

ventilated and heat can penetrate the covering.

The bottom of the drier is removable and is arranged to dump. This bottom B preferably consists of two skeleton frames 15 and 15<sup>a</sup>, provided at the top with a covering 15<sup>b</sup> of practically the same character as the covering for the sides and ends of the main frame of the drier. These two skeleton frames 15 and 15<sup>a</sup> are connected by hinges 16, and the hinges connecting the skeleton frames are located over a division-board 17, which extends longitudinally at the lower portion of the main frame A of the drier centrally from end to end, whereby practically the bottom portion of the main section or body of the drier is divided into two compartments, so that when the hops are to be dumped they will fall from the drier at each side of the division-board 17. When the bottom B is placed in the drier, the two frames 15 and 15<sup>a</sup> are at angles to each other, as shown in Fig. 2, and the sections of the bottom B are held in position by ropes, cords, or chains 18, which are attached to the side portions of the frames of the bottom B at the center of said side portions, and the upper ends of the ropes, cords, or chains 18 are passed through cleats 19, carried by the main frame A, as illustrated in both views, and knots 20 are formed at the upper ends of the ropes, cords, or chains, or instead of knots any other projection or enlargement may be formed which will prevent the ropes, cords, or chains from passing through or from being drawn through the cleats 19. When the hops are to be dumped from the drier, the ropes, cords, or chains 18 are released from engagement with the cleats 19, and the sections 15 and 15<sup>a</sup> of the bottom portion B may then drop downward at each side of the partition-board 17 and the hops will be free to pass out at the bottom of the main frame at each side of the division-board.

In order to facilitate the drying of the hops, a tray C is used in connection with the body. This tray consists of a skeleton frame 21, provided with a perforated or reticulated upper covering 22 and pins or trunnions 23 at the ends, which pins or trunnions enter the grooves 13 in the inner face of the end surfaces of the main frame A. Thus the tray C is pivoted

in the body portion of the drier, and the ropes, cords, or chains 18 in passing upward engage with the side members of the frame of the tray C and tend to normally keep the said tray in a horizontal position. Any number of these trays C may be used and under such an arrangement the drier is provided with a number of chambers, to all of which heat is readily supplied. The object of providing the tray C is to give the box a great capacity without placing a too-thick layer of hops on the perforated bottom. With a too-high layer of hops the material will pack closely together, interfering with the proper passage of heat. Thus the tray C is made to carry part of the load of hops.

The driers are placed close together upon a skeleton structure D, which is adapted to be fitted in any suitable or approved manner in any desired form of kiln. This structure D preferably consists of cross-bars 25 and longitudinal bars 24, the bars 24 and 25 of the structure D having such relation to each other that they support the ends and sides of the driers and in no manner interfere with the discharge of hops from the driers. Preferably a scale 26 is employed in connection with the device, located at the inside of a drier and extending from the top to the bottom. This scale, which is in inches, is used by the foreman of the dry-house to determine in the most practicable way how deep the hops should be laid on the supports in the boxes, since the depth of hops must be uniform over the kiln. In fact, the scale renders it easy to determine how deep to lay the green hops in the boxes so that the floors of hops will be uniform, which is very essential.

It will be observed that the hops, after they have been dried, may be discharged by dropping the sections of the bottom B of a tray and tilting the tray or trays employed in connection with a drier and that at no time are the hops trampled upon or broken, nor need the hops be turned over, as is customary under the ordinary process of drying. Hops when dried or partly dried are more or less brittle and if handled to any great extent

separate, break, or become pulverized, and thus much of the product is lost. This loss is entirely avoided by the use of the apparatus above described.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a hop-drier, a box open at the bottom, a reticulated bottom consisting of two sections hinged together at their inner edges, and supporting devices for the outer portions of the bottom.

2. In a hop-drier, a main skeleton frame provided with end and side coverings of a reticulated or perforated material, a bottom for the main frame independent thereof, supporting devices for the said bottom, and a tray located above the bottom and having pivotal connection with the main frame, as set forth.

3. In a hop-drier, a main skeleton frame, a reticulated or perforated covering for the sides and ends of the said main frame, a division-board extending from end to end at the bottom portion of the main frame, a bottom consisting of skeleton frames having a hinged connection and located above the division-board, a reticulated or perforated covering for said frames of the bottom, means for supporting the bottom and permitting a dumping action, and a tray removable from the main frame and located above the bottom, which tray has pivotal connection with the main frame of the drier, as described.

4. In a hop-drier, a box open at the bottom and provided with a vertical partition at its lower portion, a reticulated bottom consisting of two sections hinged together at their inner edges above said partition, and supporting devices for the outer portions of the bottom.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ADOLF WOLF.

Witnesses:

FRANK A. DE PUE,  
J. C. WOY.