

J. J. MANEY.
STUMP BURNER.
APPLICATION FILED JULY 17, 1912.

1,053,102.

Patented Feb. 11, 1913.

2 SHEETS—SHEET 1.

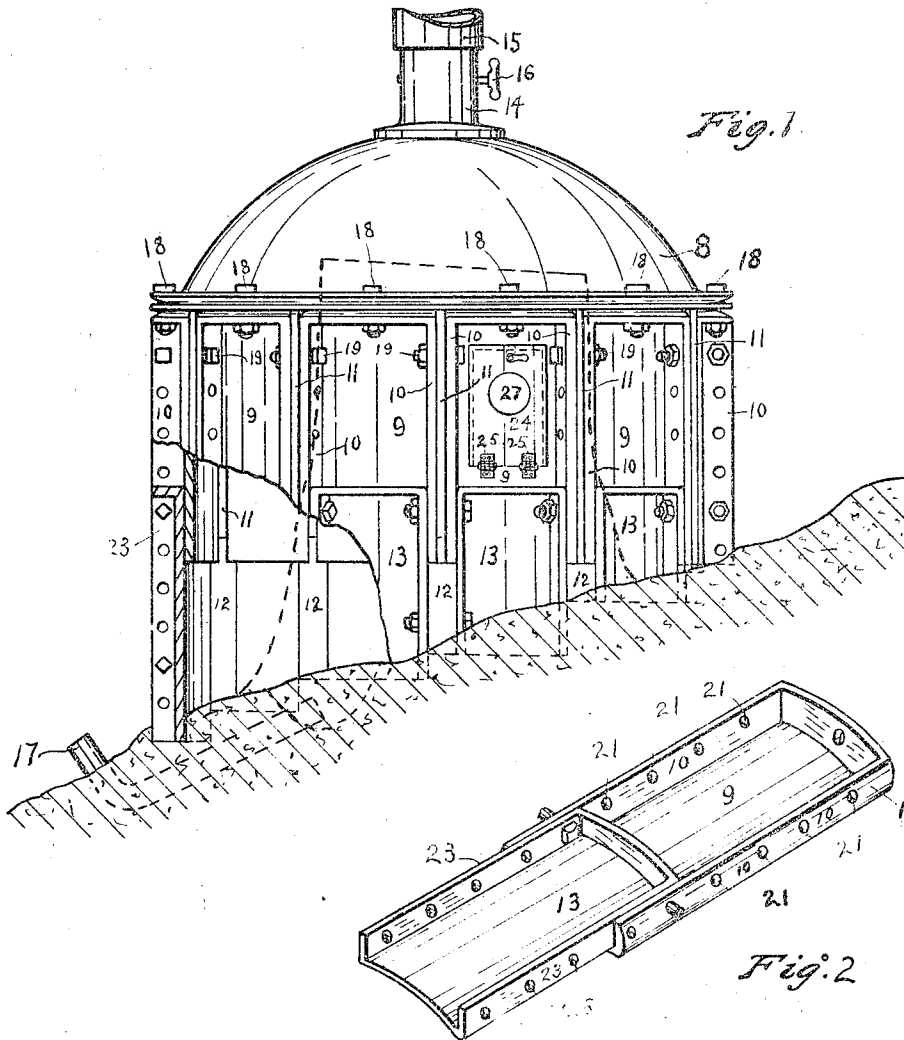


Fig. 1.

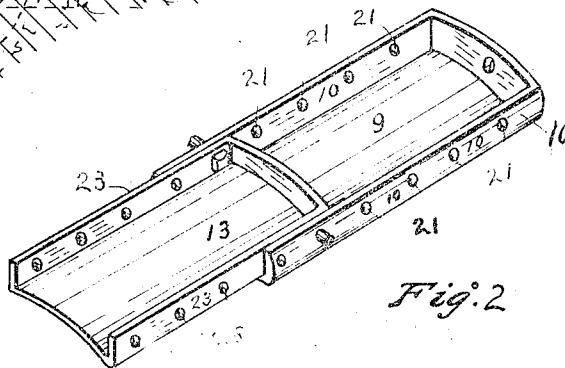


Fig. 2.

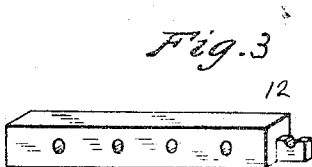


Fig. 3.

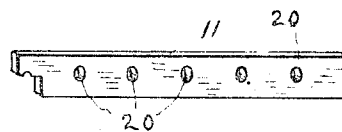


Fig. 4.

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2 SHEETS-SHEET 2.

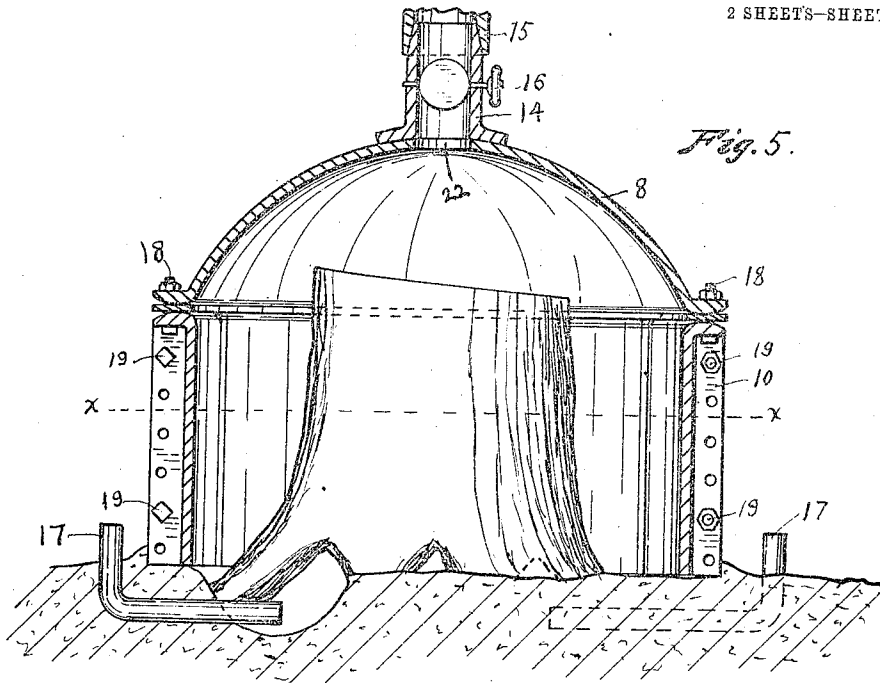
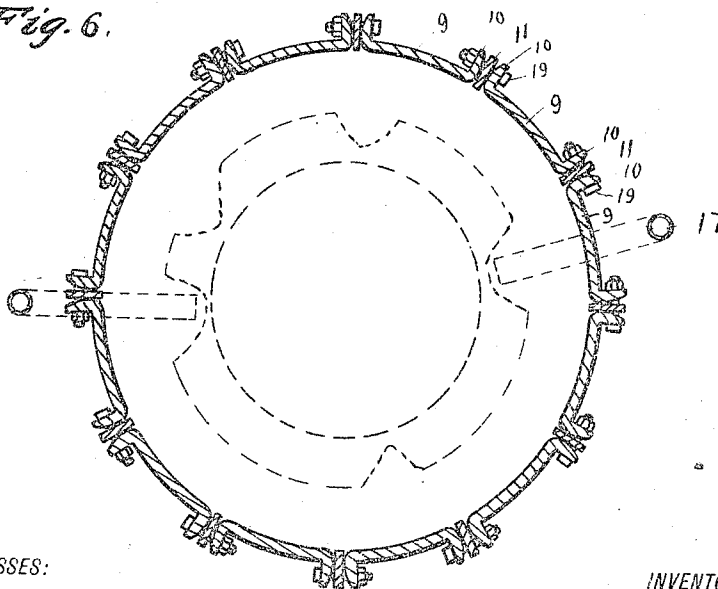


Fig. 6.



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UNITED STATES PATENT OFFICE.

JOHN J. MANEY, OF SEATTLE, WASHINGTON.

STUMP-BURNER.

1,053,102.

Specification of Letters Patent.

Patented Feb. 11, 1913.

Application filed July 17, 1912. Serial No. 710,051.

To all whom it may concern:

Be it known that I, JOHN J. MANEY, citizen of the United States, residing at Seattle, in the county of King and State of Washington, have invented a certain new and useful Improvement in Stump-Burners, of which the following is a specification.

My invention relates to improvements in "stump-burners" such as may be employed in burning a stump when clearing land for cultivation; and the object of my improvement is to provide a stump-burner which shall be readily taken apart and reassembled, simple in construction, efficient in operation and adapted by the non-heat-conducting character of the material used in its construction to confine within it heat which may be generated by combustion of an inclosed stump whereby surrounding objects may be protected from fire, and a further object of my improvement is to provide a stump-burner that shall be adapted to inclose and burn a stump that is disposed on a side-hill or on uneven ground. I attain these objects by devices illustrated in the accompanying drawings, in which—

Figure 1 is a view in side elevation of a structure embodying my invention, with a fragment thereof removed more clearly to show by a view in vertical-section some of its parts, Figs. 2, 3 and 4 are views in perspective showing details of my invention, Fig. 5 is a view in vertical-section of my invention while Fig. 6 is a view in horizontal-section of the same on broken line $x-x$ of Fig. 5, but in which a stump and other parts are indicated by dotted lines.

Briefly my invention comprises a cylindrical inclosure provided with a dome shaped cover or roof from the topmost portion of which projects a chimney or smoke-pipe provided with a damper adapted to regulate the escape of products of combustion, in a well known manner, such smoke-pipe comprising separable sections to adapt it to be increased or decreased in height to suit different conditions of employment. The cylindrical portion of the structure may be formed by bolting together adjacent flanged vertical edges of a plurality of segmental panels of suitable material upon the top flanged edges of which is disposed and bolted the flanged lower edge of the dome shaped roof. These segmental panels, smoke-pipe and the roof are preferably of a composition of concrete

and shredded asbestos or like non-heat-conducting refractory material molded into suitable form. The outer surface of each of the vertical flanges of the segmental pieces where it engages with an adjacent flange is rounded to adapt each segmental panel for employment in inclosures of different diameters, which inclosures may be made to differ in their diameter by varying the number of segmental panels of which they are constructed. Thus with a given maximum number of panels, constituting a set of panels, with which to construct a cylindrical inclosure of maximum diameter there would be provided a roof of required diameter for such largest inclosure and a separate roof would be provided for each of desired smaller sizes of inclosures that might be produced by smaller numbers of panels.

My invention also comprises means whereby a stump to be burned may be inclosed when such stump is disposed on a hill-side or on uneven ground and such means consists in providing auxiliary flanged segments which are adapted to fit within the space between the vertical flanges of the panels whereby the panels disposed on the down hill side of a stump may be extended to compensate for the unevenness of the ground.

My invention also embodies means for admitting air into the inclosure at a point near the base of the stump, and further it provides opening means through which kindling wood or other fuel may be inserted, such opening means comprising a hinged door disposed in one or more of the panels of an inclosure.

Referring to Fig. 1 of the drawings wherein is shown a structure disposed on the side of a hill, 8 is a dome shaped roof secured by bolts 18 to the top of a cylindrical inclosure made of the segmental panels 9 which are bolted together by bolts 19 which extend through the adjacent flanges 10 of said panels 9, as shown more clearly in Fig. 6, there being interposed between adjacent flanges 10 a packing strip 11 of the form shown in perspective in Fig. 4, said packing strip 11 being provided with holes 20 which are disposed to correspond with holes 21 in the vertical flanges 10 of the panels 9. The packing strips 11, panels 9 and the dome shaped roof 8 are each made of refractory non-heat-conducting composite material

such as a mixture of concrete shredded asbestos and clay, or the like, molded into their respective forms. Concentric with a hole 22 in the roof 8 is disposed a smoke-pipe 14 securely fastened to the top of said roof 8 and within said smoke-pipe 14 is placed a well known form of damper 16. The smoke-pipe 14 may be extended in height by adding one or more sections, one additional section being indicated by the fragmental section 15 and such smoke-pipe 14 preferably may be made of non-heat-conducting composite material.

As shown in Fig. 1 auxiliary segments 13 serve to extend downwardly from the lower end portions of those panels 9 which are disposed on the lower side of the hill whereby there may be close contact between the lower ground and the edge of the inclosure.

Fig. 2 illustrates the manner in which an auxiliary segment 13 may be disposed adjustably to fit within the space between the flanges 10 of a panel 9, the holes 26 in the flanges of the auxiliary segment 13 being adapted by their distance apart to correspond with the holes 21 in the flanges of the panel 9 whereby the auxiliary segment 13 may be secured to extend from the panel 9 for different desired distances. Between the adjacent flanges 23 of the auxiliary segments 13 are disposed packing strips 12 of the form shown in perspective view in Fig. 3. The auxiliary segments 13 and the packing strips 12 may be of different lengths as required or they may all be of the same length and then be extended for a greater or less distance, as required, to project from the lower ends of the panels 13. In one of the panels 9 is a door 24, which is adapted by the hinges 25 to open and swing outwardly and downwardly (and in which is a window 27 of mica) whereby, as required, kindling wood or other fuel may be inserted and whereby the progress of combustion may be observed. While I have shown only one of the panels 13 provided with a door 24 there may be a door in each of any desired number of said panels 13. A pipe 17 for conducting air for purposes of combustion, as indicated in Fig. 1, leads into the inclosure, being disposed in the ground beneath the edges of the structure as indicated by broken lines, such pipe 17 thus disposed may deliver air close to the roots of a stump, indicated by broken lines in Fig. 1. There may be a plurality of such pipes 17 as may best suit a given condition and such pipes 17 may each be provided with means of draft regulation in a well known manner not shown.

Referring to Fig. 6 it will be observed how the adjacent surfaces of the flanges 10 are rounded whereby when an inclosure is to be changed in diameter by removing or adding a panel 9 such rounded surfaces of

the flanges 10 may serve to adjust themselves to form a close contact with the packing strips 11 in an obvious manner.

Fig. 5 illustrates a structure embodying my invention disposed to inclose a stump located on level land whereby auxiliary segments 13 are not required, but in all other features the structure of Fig. 5 is the same as the structure of Fig. 1.

The dome form of the roof 8 as shown in Figs. 1 and 5 is a feature of great importance since in the operation of burning a stump its concave surface so deflects air and products of combustion as to cause a much more thorough mixture of air and gases, than does a cone shaped roof or a roof of other form whereby the temperature within the inclosure is enormously increased thus to accelerate combustion.

Manifestly a structure embodying my invention, by a proper supervision of air supply through pipes 17 and suitable adjustment of the damper 16 in the smoke-pipe 14, may operate to reduce stumps to charcoal of commercial value instead of reducing them wholly to ashes.

In the operation of burning a stump within a structure embodying my invention it is well to remove the earth between adjacent large roots of the stump as illustrated in Fig. 5 and dispose a pipe 17 to deliver air at a point between adjacent roots where such earth has been removed as many pipes 17 being employed as may be desired whereupon shavings and kindling wood or other quick burning fuel may be disposed around the base of the stump and then ignited whereby the entire stump may catch fire to burn. In some cases the burning of a stump may be accelerated by splitting it open in two or three places thus to expose larger areas to the action of flames.

Obviously minor modifications of my invention may be made without departing from the spirit thereof.

What I claim is:

1. In a stump burner of the class described, a plurality of segmental panels adapted to be disposed to form the vertical walls of an inclosure around a stump, each of said panels being provided with flanges whose outer sides are rounded and which project outwardly from the vertical edges of said panel, said panels being made of refractory non-heat-conducting material, a packing strip of refractory non-heat-conducting material adapted to be disposed between the rounded surfaces of adjacent flanges of said panels, means for fastening together and uniting said adjacent flanges and one of said packing strips, a dome shaped roof made of refractory non-heat-conducting material and adapted to be securely disposed upon and to cover an inclosure made of said panels, said dome

shaped roof being provided with regulative means for permitting the escape of air and products of combustion, conduit means adapted to be disposed below the lower end of said panel and adapted for conducting air from without into the bottom portion of the space within an inclosure embodying said panels, and opening means associated with said panels whereby fuel may be introduced into such an inclosure.

2. In a stump burner of the class described, the combination with a plurality of segmental panels forming the vertical walls of an inclosure each of which panels is composed wholly of refractory non-heat-conducting material and provided with flanges whose outer surfaces are rounded, whereby, when the size of said inclosure is varied, the joint between adjacent flanges may be tight, of means for fastening together the adjacent flanges of said panels, a dome shaped roof made wholly of like refractory non-heat-conducting material securely disposed upon the top of said inclosure, said roof being provided with regulative means for permitting the escape of air and products of combustion, regulative means for introducing air into said inclosure for purposes of combustion, and an opening means associated with said inclosure whereby fuel may be introduced thereinto.

3. In a stump burner of the class de-

scribed, the combination with a plurality of segmental panels made wholly of refractory non-heat-conducting material and adapted to form the vertical walls of an inclosure, of auxiliary panels made of like material and adapted each removably and adjustably to be associated with any one of said segmental panels whereby said auxiliary panels may serve as an extension to said segmental panels to produce a desired dimension to compensate for any unevenness of the ground upon which an inclosure embodying said panels may be located.

4. In a stump burner of the class described, a plurality of segmental panels each of which is composed wholly of refractory non-heat-conducting material and provided with flanges whose outer surfaces are rounded, whereby, when the size of the burner casing is varied, the joint between adjacent flanges may be tight, in combination with a dome shaped roof which is wholly composed of like refractory non-heat-conducting material and which is adapted to be disposed upon and cover a burner casing embodying said panels.

In witness whereof, I hereunto subscribe my name this 6th day of July A. D., 1912.

JOHN J. MANEY.

Witnesses:

ROBERT D. HAMLIN,
FRANK WARREN.