

H. K. WHEELLOCK.
 SPRAYING AND BURNING APPARATUS.
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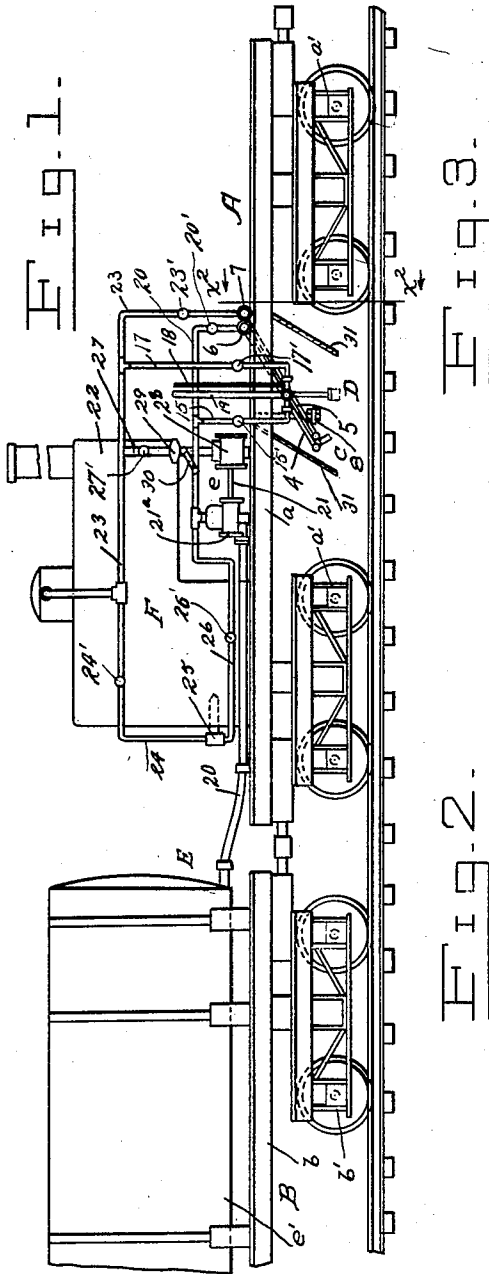
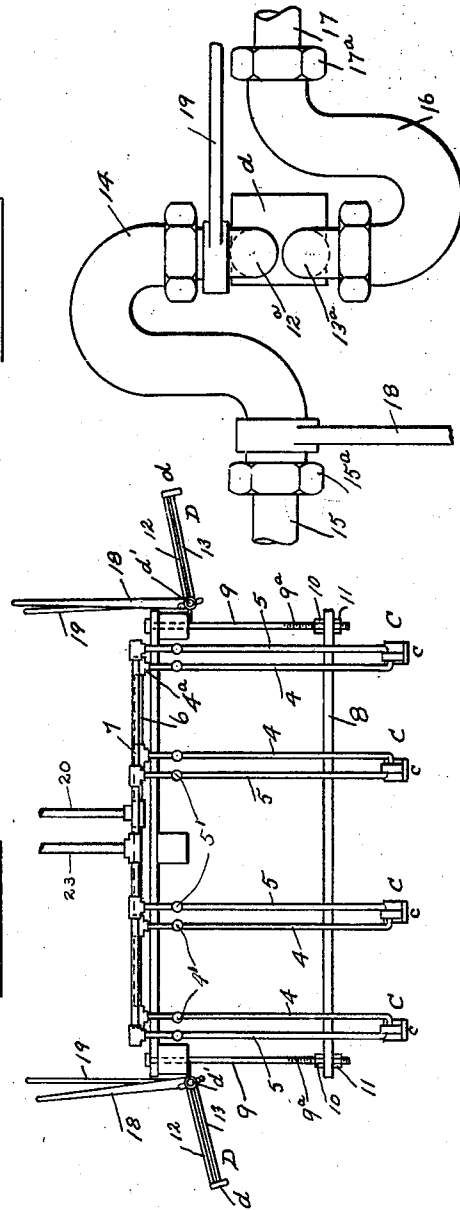


Fig. 2.



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UNITED STATES PATENT OFFICE.

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SPRAYING AND BURNING APPARATUS.

1,312,934.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, HERBERT K. WHELOCK, a citizen of the United States, residing at Long Beach, in the county of Los Angeles and State of California, have invented new and useful Improvements in Spraying and Burning Apparatus, of which the following is a specification.

This invention relates to spraying and burning apparatus, and it has for its object to provide improved apparatus whereby plant growths may be sprayed, or weeds or other growths destroyed, as by burning. A particular field of usefulness of the invention is in the economical and rapid destruction of such growths as must be removed from roadways, railways and the like, where frequently great expense is incurred in maintaining the same in proper condition and free from obstructive and undesirable plant life.

In accordance with the present invention, spraying devices which may be in the form of burners are suitably mounted upon a movable framework, as upon the framework of a railway car or cars, and improved means for supplying of liquid fuel, as well as for properly supplying pressure medium to spray the same are provided. Each of the spraying devices or burners may be supplied with liquid fuel under pressure and with pressure medium through independent conduits and subject to proper regulation as to proportions, pressure, et cetera, at each burner, although the independent liquid fuel conduits preferably spring from a single supply pipe; the independent pressure medium supply conduits likewise preferably spring from a single supply pipe leading from the source of supply, which may be a steam boiler. The liquid fuel supply pipe is preferably interrupted to receive a pump and is connected with a fuel tank which may be mounted upon the framework. The pump may be actuated by steam pressure from the boiler, suitable connections and control devices being provided to that end. A shield or housing may be provided for certain of the burners, and such burners are preferably adjustable relatively to the framework to suit any particular requirements of service.

The invention has for a further object to provide a universally adjustable burner and mounting therefor, to the end that one such burner may if desired be mounted at

each side of the framework and be readily adjusted to the position required to spray or burn growths of any nature at the roadside.

A further object of the invention is to provide apparatus of the general character stated which will be relatively superior in points of simplicity and inexpensiveness in construction and organization, combined with serviceability, which will be positive in operation, and which will be generally superior in efficiency and serviceability.

With the above and other objects in view, the invention consists in the novel and useful provision, formation, combination, association and relative arrangement of parts, members and features, all as hereinafter described, shown in the drawing, and finally pointed out in claims.

In the drawing:

Figure 1 is a side elevation of apparatus constructed and organized in accordance with the invention, parts being broken away and sectioned for clearness of illustration;

Fig. 2 is a transverse sectional view taken on the line x^2-x^2 , Fig. 1, and looking in the direction of the appended arrows; and

Fig. 3 is an enlarged detail view of features of the universally adjustable spray-device or burner.

Corresponding parts in all the figures are designated by the same reference characters.

Referring with particularity to the drawing, the invention is therein shown as embodied in a weed burner for railways, in which A and B designate, respectively, a burner-carrying car and a fuel-carrying car, such cars constituting the framework of the apparatus, C designates in each instance an intermediate burner, D designates in each instance an adjustable side burner. E designates liquid fuel supply means, e designates pressure means for the liquid fuel, and F designates pressure medium supply means.

The car A preferably comprises a body portion a and trucks a' of standard construction and adapted for co-action with a railway, and the car B preferably comprises a body portion b and trucks b' .

Each of the burners C comprises a burner head c having a fuel supply pipe 4 and a pressure medium supply pipe 5 connected with the same and whereby such burner is supported. The burners may be of standard construction and are preferably of the type in which liquid fuel is sprayed by steam, the flame being thus kept entirely outside

the burners. The supply pipes 4 are all mounted for oscillation on and connected with a common transverse supply pipe or header 6 as at 4^a and such pipes are swiveled in the respective burner heads *c*.

The pressure medium supply pipes 5 are mounted for oscillation on and connected with a common transverse supply pipe or head 7 and are swiveled in the respective burner heads *c*; this form of connection and support for the burner heads *c* which are arranged in a transverse series permits of readily raising or lowering the entire series, a transverse bar 8 being provided beneath the pipes 4 and 5 to support the burners at the desired height. Owing to the swivel connections between the depending pipes 4 and 5 and the burner heads *c*, it will be obvious that these burner heads will be maintained in the same angular relation to the track as they are raised and lowered. The transverse bar 8 is apertured near each end to receive a pair of depending bolts 9 provided on the car body. The bolts 9 are threaded as at 9^a and an upper nut 10 and a lower nut 11 are provided on each, the transverse bar 8 being clamped between such upper and lower nuts.

The adjustable side burners D each comprise a burner head *d*, a fuel supply pipe 12 threaded therein, a pressure medium supply pipe 13 likewise threaded therein, and swivel means *d'* permitting universal adjustment of the burner head *d*.

The swivel means *d'* is shown as comprising a pipe 14 bent into a goose neck and swiveled at one end onto a fuel supply pipe 15 as at 15^a and swiveled at its other end onto the fuel supply pipe 12 which is suitably bent at 12^a, and a pipe 16 bent into a goose neck and swiveled onto a pressure medium supply pipe 17 as at 17^a at its one end and swiveled onto the pressure medium supply pipe 13 at its other end. The pipe 13 is suitably bent as at 13^a. The burner with its swivel is suitably supported by the pipes 15 and 17 at the respective side of the car and a control lever 18 secured to the pipe 14 may be employed to swing the burner head in one plane, while a control lever 19 secured to the pipe 12 may be employed to swing the burner head in a plane at right angles to the first named plane, thus providing for universal movement of the burner with an uninterrupted supply of fuel and pressure medium.

The fuel supply means E comprises a fuel tank *e'* which is shown as mounted upon and carried by the car B, a main fuel supply pipe 20 extending from the tank *e'* to the transverse pipe or header 6, a preferably steam actuated pump 21 constituting the means *e* which the main supply pipe 20 is interrupted to receive, and the pipes 15 which are branches of the main pipe 20 and

lead therefrom to the respective burners D. The minor individual burner supply pipes 4 and the header 6 may also be regarded as part of the supply fuel means E.

The pressure medium supply means F is shown as a steam boiler 22 mounted upon the body *a* of the car A, a main steam supply pipe 23 leading from the boiler 22 to the pipe or header 7, and the branch pipes 17 leading to and connected with the respective side burners D. The pipes 5 leading from the header 7 to the separate burner heads *c* may also be regarded as of the pressure medium supply means F. A branch steam pipe 24 leads from the main steam pipe 23 to a burner 25 located beneath the boiler and a branch fuel supply pipe 26 leads from the connection of pump and pressure portion of the fuel supply pipe 20 to the burner. A branch steam pipe 27 leads from the main steam pipe 23 to the steam cylinder 28 of the pump and such pipe 27 is interrupted to receive a regulating device 29 which may be of standard construction, as of the diaphragm type and connected by a branch pipe 30 with the pressure portion of the main fuel supply pipe 20; this regulating device by throttling action will maintain the desired degree of pressure in the pressure section of the main fuel supply pipe 20.

The pipes 4, 5, 15, 17, 20, 23, 24, 26 and 27 are provided with regulating valves 4', 5', 15', 17', 20', 23', 24', 26' and 27', respectively, whereby the amount and pressure of both liquid fuel and steam supplied each burner or other part of the apparatus may be accurately proportioned for best results.

A depending shield 31 may be provided to partially inclose the series of burners C so that the flame therefrom may be more accurately adjusted or directed to the work.

The operation, method of use and advantages of the invention will be readily understood from the foregoing description, taken in connection with the accompanying drawing and the following statement:

The cars being coupled together and suitably drawn along a roadway, the burners having been set into operation and adjusted or placed into position, the plant life within the reach of the flame or heat will be destroyed thereby. An operator may employ the universally adjustable side burners in reaching special growths if desired, as the same may be set or manipulated during the progress of the apparatus along the roadbed.

Having thus disclosed my invention, I claim and desire to secure by Letters Patent:

1. A weed burner for roadways including a wheeled vehicle, a fuel supply pipe extending transversely across the same, a pressure medium supply pipe arranged parallel to the fuel supply pipe, a series of burners, parallel feed pipes supporting the burners and

extending downwardly from the transverse pipes, said feed pipes being loosely connected to the respective transverse supply pipes and swiveled to the burners so that the latter are maintained in the same angular relation to the roadway as they are raised and lowered by swinging the feed pipes about the transverse supply pipes, and means for holding the burners in an adjusted position.

2. A weed burner for roadways, including a wheeled vehicle, a fuel supply pipe extending transversely across the same, a pressure medium supply pipe arranged parallel to the fuel supply pipe, a transverse series of burners suspended under the body of the vehicle, a pair of parallel feed pipes supporting each of the burners, said feed pipes being pivotally connected at their upper ends to the respective transverse supply pipes and swiveled at their lower ends to the burners so that the burners are maintained in the same angular relation to the roadway as the feed pipes are swung about the transverse supply pipes to raise and lower the burners, a cross bar engaging the feed pipes to support the burners in an adjusted position, and an adjustable support for the cross bars.

3. A weed burner for roadways, including a wheeled vehicle, fuel and pressure medium supply pipes extending transversely across the vehicle, a transverse series of burners supported under the vehicle, feed pipes sup-

porting the burners and pivotally connected at their upper ends to the transverse supply pipes to admit of the feed pipes being swung to raise and lower the burners, a cross bar engaging the feed pipes to support the burners in an adjusted position, and hangers engaging the ends of the cross bar to adjustably support the same.

4. A weed burner for roadways, including a vehicle, fuel and pressure supply pipes mounted thereon and arranged with their ends in alinement with each other, curved couplings arranged in a plane and swiveled at their outer ends to the respective supply pipes while their inner ends are arranged in alinement with each other and at right angles to the supply pipes, feed pipes extending at right angles to the plane of the coupling members and having their inner ends curved at right angles and swiveled to the respective coupling members, a burner carried by the outer ends of the feed pipes, and means for swinging the burner into different angular positions.

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

HERBERT K. WHEELOCK.

Witnesses:

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