

Dec. 14, 1926.

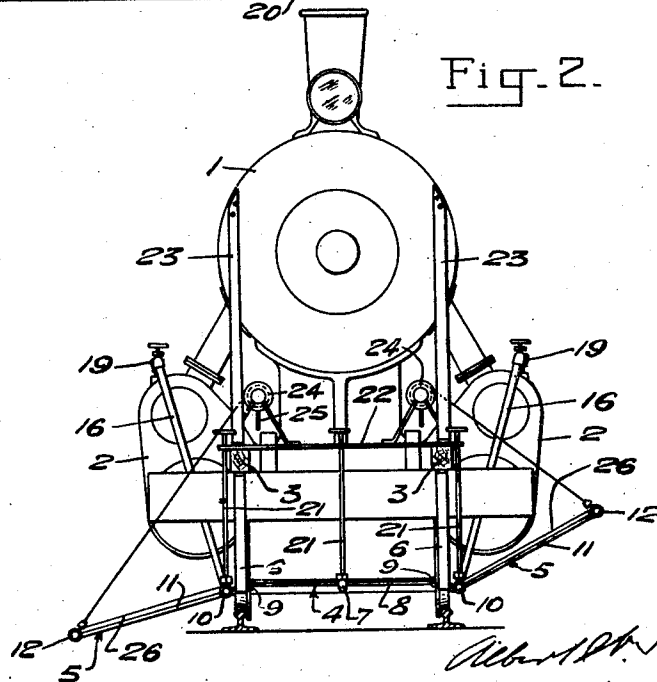
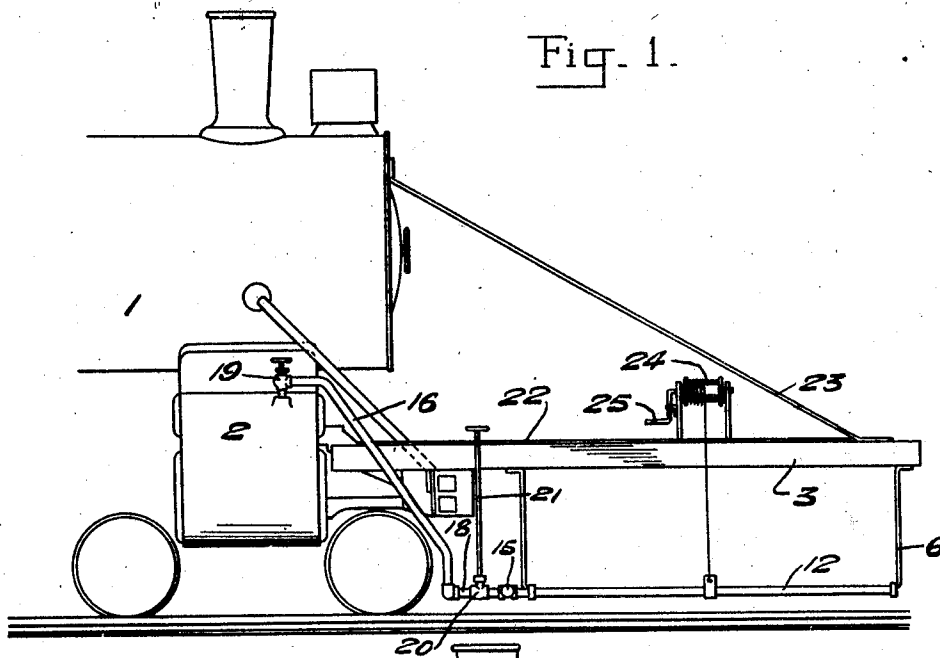
A. W. KIRKLAND

1,610,556

DEVICE FOR DESTROYING WEEDS AND VEGETATION ALONG RIGHT OF WAY OF RAILROADS

Filed March 15, 1926

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

Fig. 3.

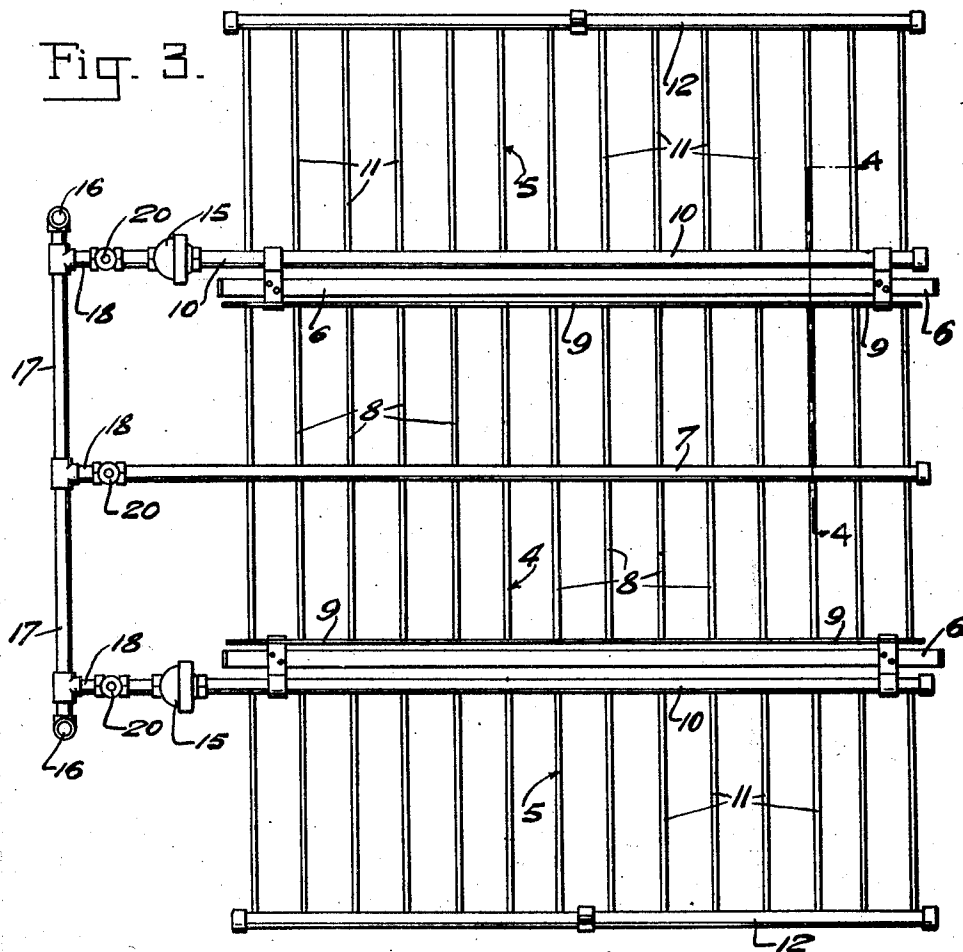


Fig. 4.

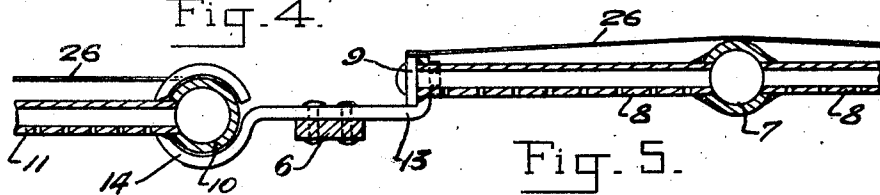


Fig. 5.

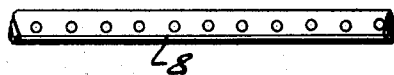
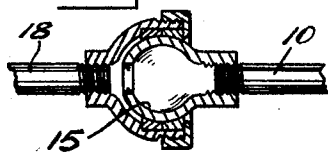


Fig. 6.



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UNITED STATES PATENT OFFICE.

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DEVICE FOR DESTROYING WEEDS AND VEGETATION ALONG RIGHT OF WAY OF RAILROADS.

Application filed March 15, 1926. Serial No. 94,841.

My invention relates to the killing or destruction of weeds and other vegetation along the tracks or right-of-way of railroads, more particularly steam railroads, and it has for its object to provide a construction for the purpose which is efficient in action and may be attached to say a steam engine or locomotive from which may be derived the steam that will be directed against the weeds or vegetation for their destruction in clearance of the roadway along the tracks.

To the accomplishment of the foregoing and such other objects as may hereinafter appear the invention consists in the construction and also in the arrangement and relationship of parts hereinafter particularly described and then sought to be clearly defined by the claims, reference being had to the accompanying drawings illustrating the preferred embodiment of the invention, and in which—

Figure 1 is a side elevation of a portion of a locomotive with my attachment connected thereto and shown in side elevation;

Figure 2 is a front view of a locomotive and the attachment, and showing one of the side wings thereof in a partially raised position and the other wing shown inclined downwardly and outwardly;

Figure 3 is a plan view of the attachment on a larger scale than the other views and detached from the locomotive;

Figure 4 is a vertical cross-section through a portion of the middle or central manifold and one of the side-wing manifolds, enlarged scale, illustrating manner of hinging one to the other;

Figure 5 is a bottom plan of a portion of one of the connecting perforated pipes of a manifold;

Figure 6 is a section through one form of flexible or universal joint between manifold and steam supply pipe to permit manifold to be raised.

In the drawings, the numeral 1 designates, in general, a locomotive equipped with the usual steam chests 2 to which steam is supplied from the usual locomotive boiler, the locomotive connecting rods being disconnected as the locomotive will be employed merely to supply the steam

to the distributing manifolds which will direct it against the weeds or vegetation to be killed or destroyed along the roadway, the steam supply locomotive and its weed killing attachment being drawn by a locomotive with the usual standard equipments and coupled thereto.

To the pilot beam and engine frame of the steam supply locomotive there is securely fastened and braced by any suitable means, a pair of forwardly extending beams 3 which may be further strengthened in their connection to the locomotive by diagonal braces 23 extending from the forward ends of the beams to the forward end of the locomotive, as illustrated. The beams 3 will support the steam distributing manifolds, preferably three in number, a central manifold 4 and two side manifolds 5, by suitable suspension and sustaining means, for instance, by supporting bracket hangers 6, of which there may be one for each beam. The central manifold 4 is preferably formed of a centrally disposed header 7 and lateral perforated pipes 8 extending in opposite directions therefrom and connected one to the other at their outer ends by tie rods or plates 9. The side manifolds 5 are each preferably formed of a header 10 from which extend perforated pipes 11 connected at their outer ends by a header 12.

The central manifold 4 is supported from the bracket-hangers 6 by brackets 13 bolted to hangers 6 and having one end bolted to the tie rods or plates 9 of the central manifold so as to support the manifold from the hangers 6, the other end of the brackets 13 being formed with an eye 14 to receive the header of the adjacent side manifold, as shown in Figure 4, so that the side manifolds are given a hinged connection that will permit them to be raised and lowered when necessary or desired. The headers 10 of the side manifolds are provided, at the ends receiving steam from its source of supply, with a suitable flexible joint 15, which for instance may be a universal or ball and socket type, as illustrated in Figure 6, so as to accommodate or permit the swinging of the side manifolds on their hinged supports. Steam is delivered from steam chests 2 through pipe 16, one pipe

from each chest, to a pipe 17 and from said pipe through lateral pipes or nipples 18 into the headers 7 and 10 of the central and side manifolds, respectively.

Suitable valves 19, for instance globe-valves, are provided where pipes 16 lead from the steam chests so as to control or cut-off the supply of steam from the chests to the pipes, and suitable valves 20, which may be globe valves, are provided where pipes 18 deliver to the heads of the manifolds so that the supply of steam to headers may be regulated and if desired be cut-off from one or more of the headers and thus give complete control of the supply of steam to the manifolds to meet the conditions and requirements that may at the time exist. For the purpose of actuating the valves 20, a handle 21 extends from each valve to a point at or adjacent to the platform 22 for the operator so that the valve may be conveniently manipulated or operated from the platform.

For the purpose of lifting one or both of the side manifolds to avoid an obstruction in the path of travel of the locomotive and its manifold attachments, or for other purposes, a windlass, one or more, is connected by a cable to the side manifolds. As illustrative of this feature, there is shown two windlasses from the drum 24 of which provided with a crank-handle 25 extend cables 26 attached to the side manifolds so that by means of the windlass either or both side manifolds may be lifted to pass obstructions, or lowered to a position such as indicated at the left of Figure 2 to direct the steam jets against the growth or vegetation to be destroyed. If desired, there may be suitably supported above the top of each manifold a covering or canopy 26 to more or less confine the escaping steam beneath the canopy although permitted to escape beyond the sides of the manifolds.

Under the construction devised the predominant feature is an attachment for the purposes, comprising a frame carried by and supported from the pilot beam of a locomotive of standard type, the steam delivery manifolds being carried by said frame, and the headers of the manifolds connected to the superheated steam chests of the standard type locomotive. Thus is obviated the necessity of a special wheel structure for coupling to a separate drawing or pulling locomotive, and also the necessity of a special wheeled structure equipped with steam generating means and to be coupled to a driving locomotive. The attachment makes it possible to use a standard type of locomotive with the steam distributing manifolds connected up with the steam chests such as the standard locomotives are equipped with, and from which standard parts the customary connecting rods may be disconnected

as the locomotive carrying the attachment will be coupled to a driving locomotive when the locomotive with the manifolds supported therefrom is to be moved over the road tracks for killing or destroying weeds or vegetation along the right-of-way of the road. Other features of novelty consist in the special features of construction illustrated for efficient working of the attachment.

With an equipment such as described, superheated steam is taken from the steam chests of a standard type of locomotive and projected in jets or streams from the perforated pipes of the manifolds against the weeds or vegetation between the rails of the track and also outside of the rails along the road-bed with the result of killing or destroying the vegetation so as to clear the right-of-way from such growth.

To prevent unnecessary waste or consumption of steam where less steam is required at some parts of the roadway than at others, for instance where the vegetation growth is less dense between the rails than to the sides thereof, or denser at one side than elsewhere, the supply of steam to the selected header may be cut-off or lessened by manipulation of the valve or valves in the pipes leading to the manifolds and thus the steam be supplied in the volume or quantity desired to the manifold or manifolds needing the same and thus conservation of steam effected. If there be an obstruction along the side of the road-way that needs to be passed without damaging the side manifolds, or if it be desirable to present the side manifolds at a greater or less inclination, the side manifold may be lifted by the windlass and cable connection as clearly indicated in Figure 2 of the drawing. It will be observed that the manifolds and frame from which they are suspended constitute practically a unitary structure specially adapted for attachment to the pilot beam of a locomotive of a standard type without providing a specially constructed wheeled structure for carrying the manifolds. It will also be observed that the manifolds and their supporting frame have been designed with the view of affording the maximum of strength with the minimum number of parts, and making it possible for the operating attendant to take his position on the platform at the top of the supporting beams so as to have the parts under constant and full observation and for prompt manipulation to meet changing conditions. While the preferred details of construction of the various parts have been illustrated and described with particularity, it is to be understood that changes may be made in the several parts, or some of them, without departing from the essential features of the invention as sought to be defined in the appended claims.

Having described the invention and set forth its merits, what I claim is:—

1. A device for destroying weeds and vegetation along a railroad right-of-way, comprising an overhanging forwardly projecting frame supported from the pilot-beam of a locomotive, steam manifolds suspended to hang from and below said frame and consisting of a central manifold and side manifolds hinged thereto, the central manifold lying beneath and the hinged manifolds lying to one side of said frame, pipes connecting a header of each manifold with steam chests of the locomotive, and valves positioned in each pipe supplying steam from the locomotive steam chests to the header of each manifold for controlling the supply of steam to each manifold independent of the other manifolds.

2. A device for destroying weeds and vegetation along a railroad right-of-way, comprising oppositely disposed overhanging forwardly projecting means supported from the pilot-beam of a locomotive, hanger-brackets supported from and depending below said beams, a centrally disposed and side steam manifolds supported from the bracket-hangers, the side manifolds being hinged along the adjacent sides of the central manifold, pipes connecting steam chests of the locomotive with a header of each steam manifold, and a valve in the steam supply pipe of each manifold header to control the supply of steam to each manifold independent of the other manifolds.

3. A device for destroying weeds and vegetation along a railroad right-of-way, comprising beams supported from the end of a locomotive, bracket-hangers supported from said beams, a centrally disposed and side steam manifolds, brackets carried by the

bracket-hangers and having the centrally disposed manifold connected thereto and one end formed with an eye to hinge the side manifolds to the brackets, and pipes connecting headers of the manifolds with steam chests of the locomotive.

4. A device for destroying weeds and vegetation along a railroad right-of-way, comprising beams supported from the end of a locomotive, bracket-hangers carried by the beams, a centrally disposed steam manifold and side disposed hinged steam manifolds supported from the bracket-hangers and each having a steam-supply header, pipes connecting steam chests of the locomotive with the headers of the manifolds, a flexible joint between said pipes and the headers of the side manifolds, a valve in each pipe supplying steam to the header of each manifold, and means for operating each valve from a point adjacent the supporting beams for controlling the supply of steam to each manifold header independent of the other manifolds.

5. A device for destroying weeds and vegetation along a railroad right-of-way, comprising beams supported from the end of a locomotive, brace-rods connecting the outer ends of said beams with the end of the locomotive, bracket-hangers supported from said beams, a centrally disposed and hinged side steam manifolds supported from said bracket-hangers, pipes connecting steam chests of the locomotive with the headers of the steam manifolds, valves in said pipes for controlling the supply of steam to the several manifolds, and means supported by the beams and connected with the hinged side manifolds for elevating the manifolds.

In testimony whereof I affix my signature.

ALBERT W. KIRKLAND.