J. R. TOTMAN.

GRASS BURNING MACHINE.

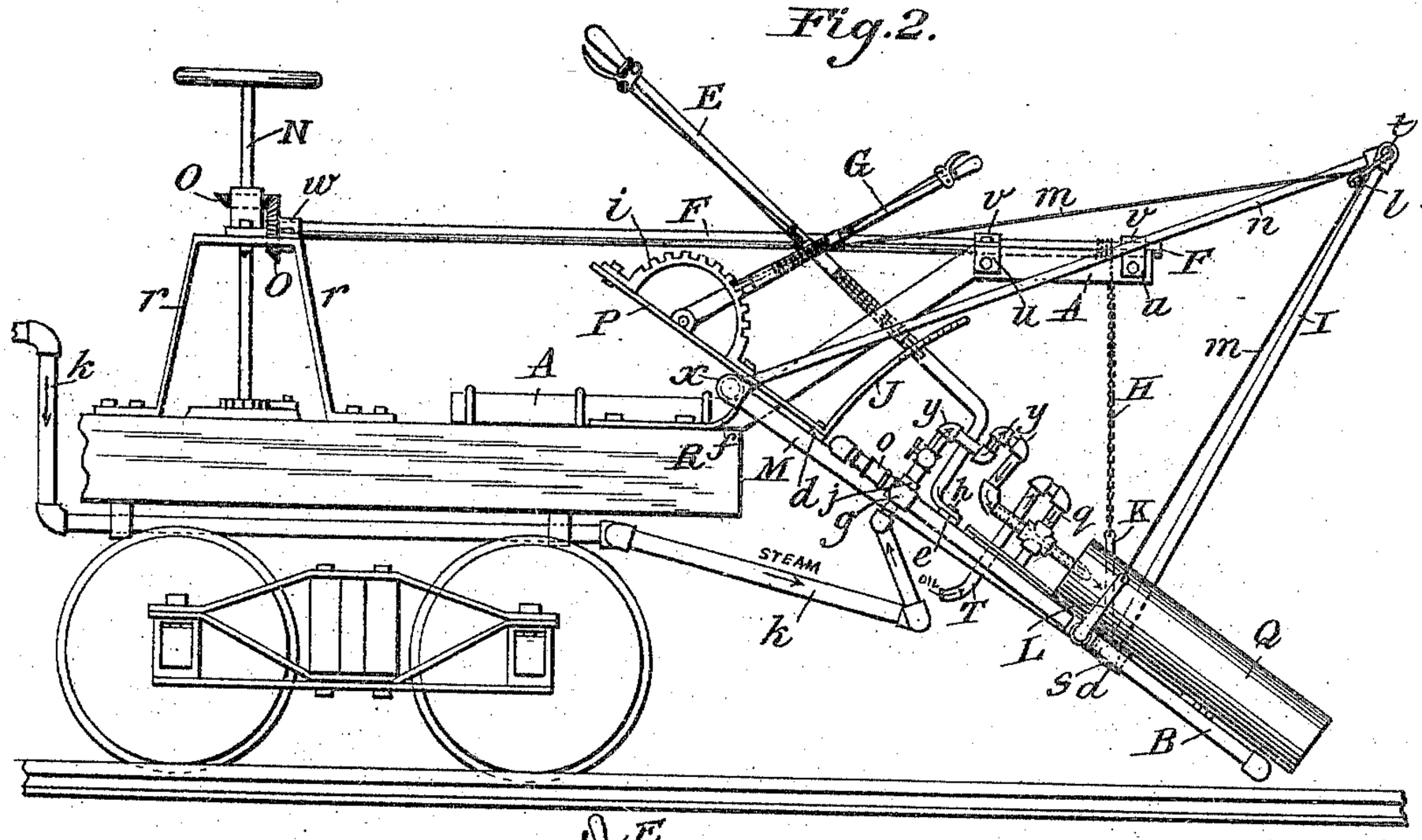
APPLICATION FILED MAY 20, 1909.

951,034.

Patented Mar. 1, 1910.

2 SHEETS—SHEET 1.

Fig. 2.



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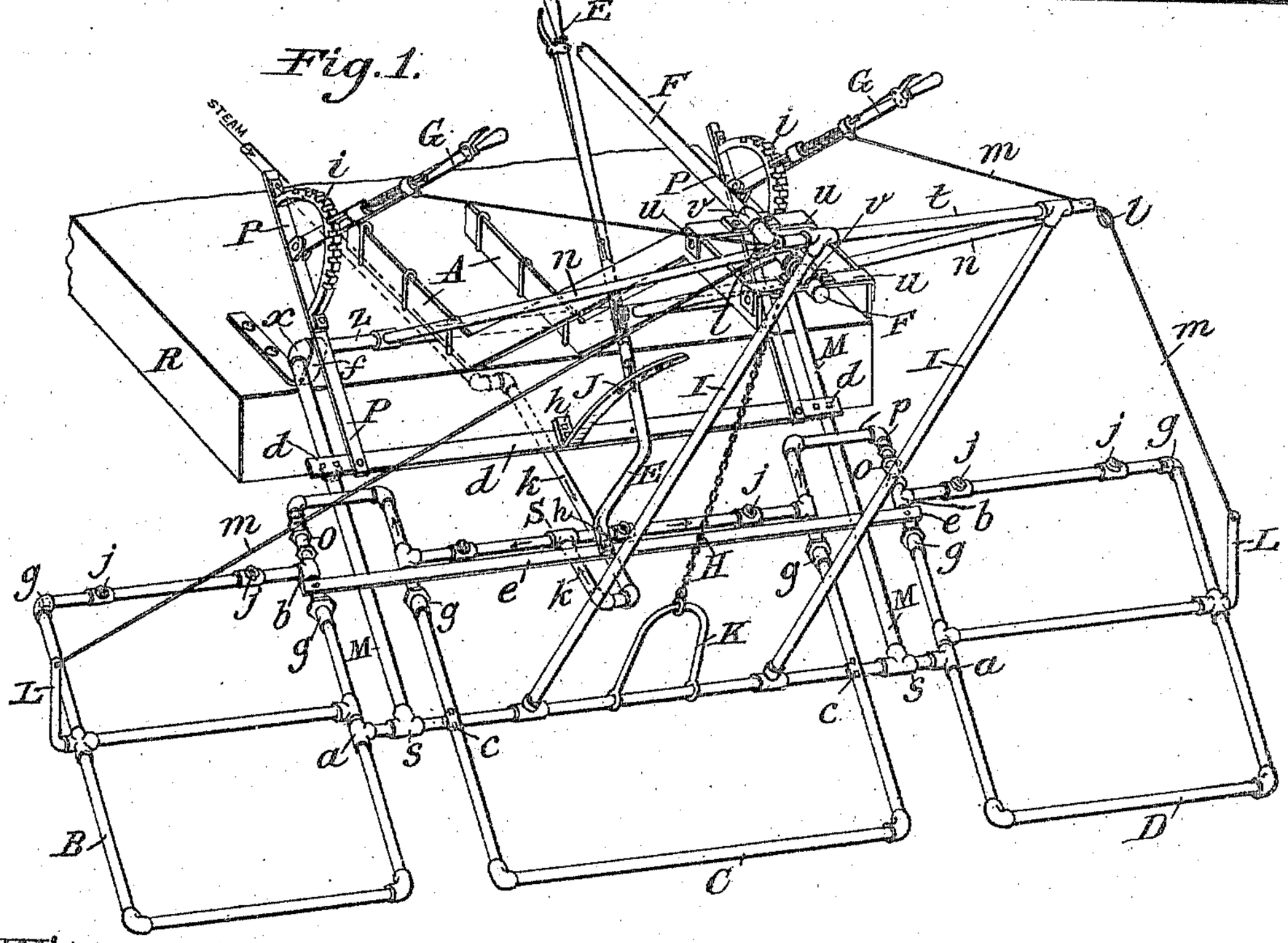

Witnesses:

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Fig. 3.

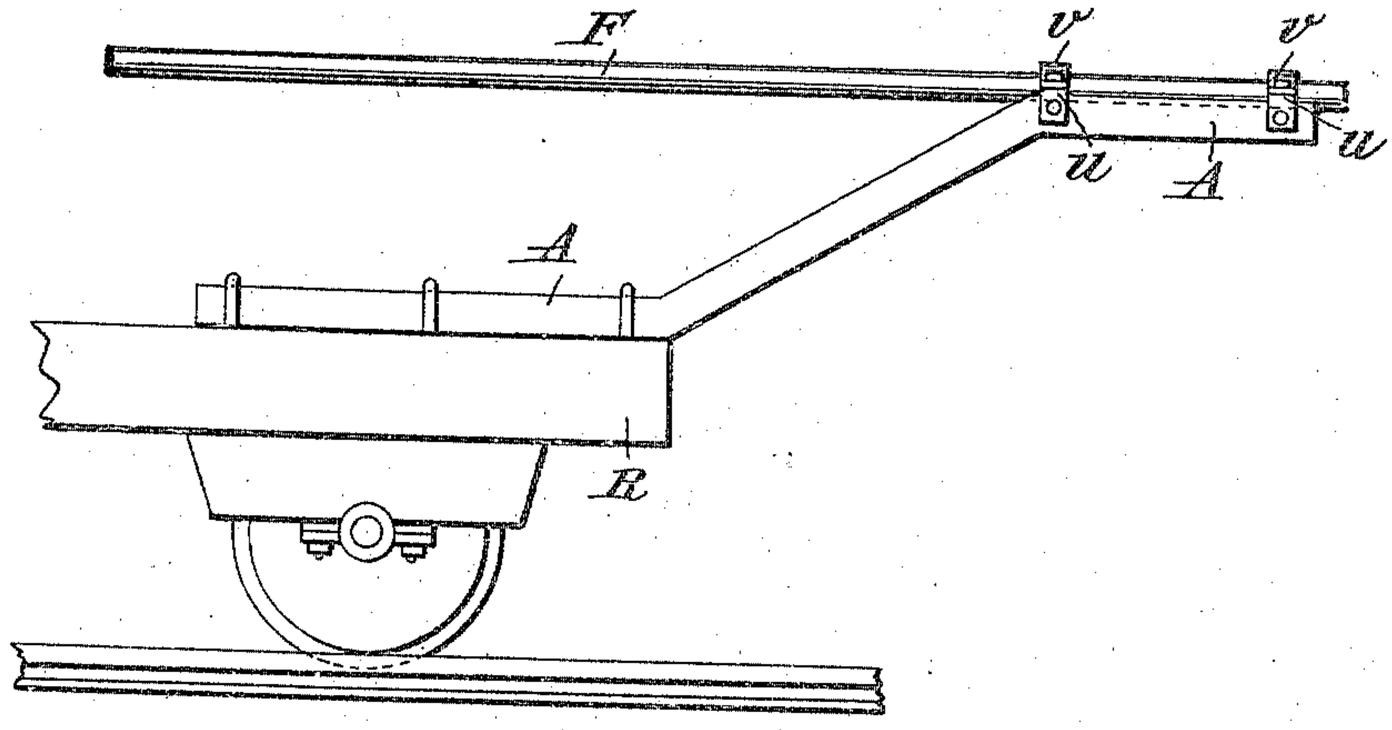
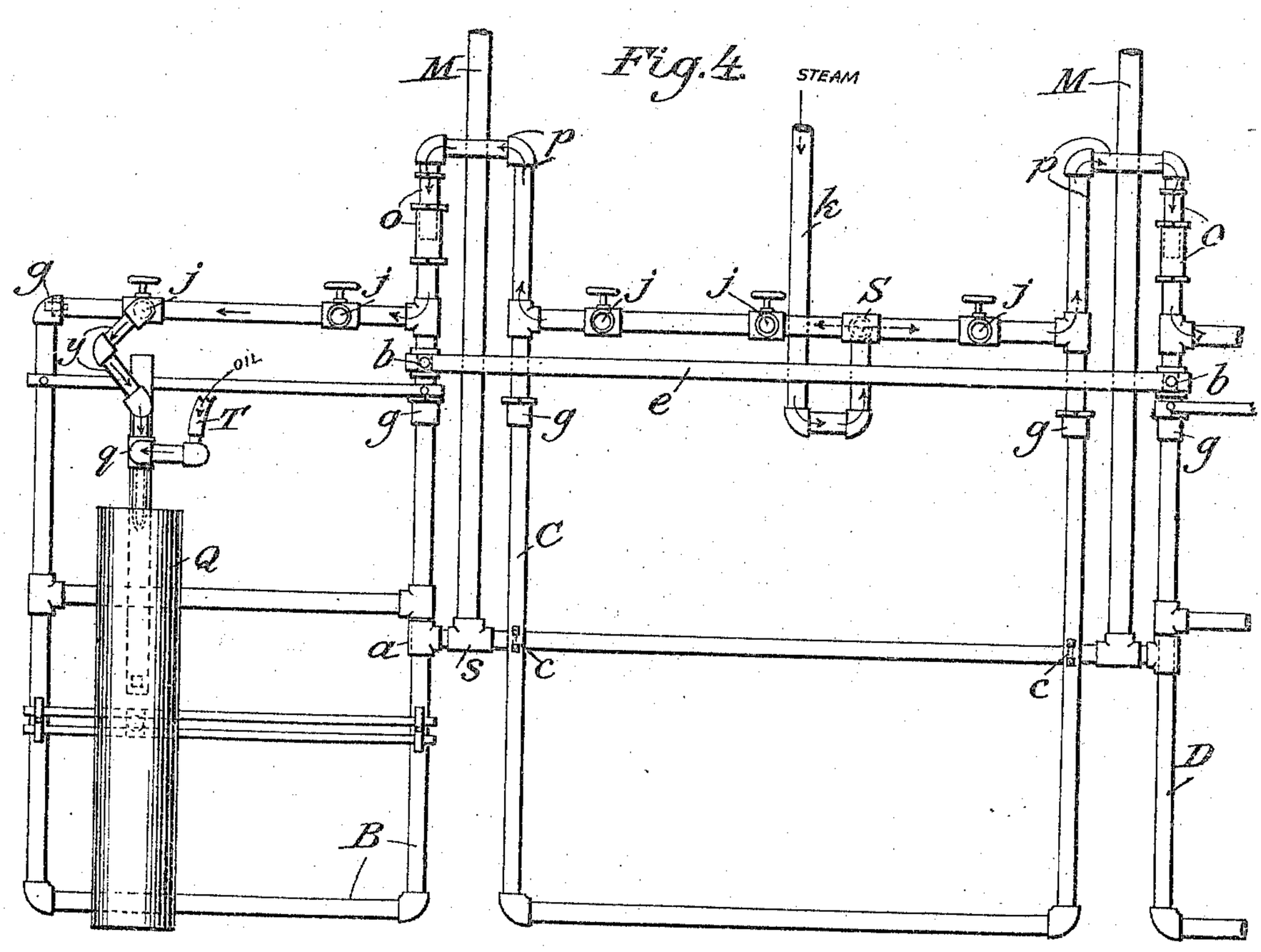


Fig. 4.



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UNITED STATES PATENT OFFICE.

JEREMY RUSSELL TOTMAN, OF COLUSA, CALIFORNIA.

GRASS-BURNING MACHINE.

951,034. Specification of Letters Patent. Patented Mar. 1, 1910.

Application filed May 20, 1909. Serial No. 497,370.

To all whom it may concern:

Be it known that I, JEREMY RUSSELL TOTMAN, a citizen of the United States, residing at Colusa, in the county of Colusa and State of California, have invented a new and useful Improvement in Grass-Burning Machines, of which the following is a specification.

My invention relates to that class of grass-burner such as described in the United States Letters Patent granted to me August 25, 1908, Number 896,774, for improvement in grass-burners, in which a series of cylinders and crude oil burners mounted on frames attached to a car and provided with an oil tank, is propelled along a railroad track by means of a locomotive for the purpose of burning the vegetation along said track.

My invention has for its object to provide improved means for raising the frames and burners up from the track; improved means for connecting the steam pipes to the burners; improved means for tipping the frames forward and downward and keeping all three sections thereof at the same angle, and improved means for tipping the outer frames outward and downward and also for raising the outer frames upward and folding them inward, as would be necessary when the machine is being used in a cut or for melting snow from the track, and, when not in use, to get them out of the way. I attain these objects by the mechanism illustrated in the accompanying drawing forming part of this specification, in which—

Figure 1 is a top corner perspective view without the burners; Fig. 2, a side elevation; Fig. 3, a side elevation showing the crane support for frames and burners; and Fig. 4, a top view of the frames showing the middle and left hand frame and the method of hinging the outer frames to the rest of the mechanism, and also the method of conducting steam to the burners.

Similar letters refer to similar parts throughout the several views.

A A, represent two pieces of iron or steel fastened to the end of the car R, and bent upward and outward therefrom so as to form a crane. The two irons A A, are placed a short distance apart and, at their outer ends, are fastened together with heavy straps of iron or steel *u u*. The straps *u u*, are provided with a boxing *v v*, which receives the outer end of the shaft F. The shaft F, extends back over the car R, and is supported at its rear end by standards *r r*, Fig. 2, and supplied with boxing at *w*, and connected with the vertical shaft N, by means of bevel gears O. When the vertical shaft N, is turned, which may be accomplished either by hand or other power, it causes shaft F, to turn and wind up the chain H, at its outer end. The chain H, being attached to the frames B, C, and D, by means of the bail K, when the chain H, is wound about the shaft F, it raises the said frames B, C, and D, up off the track.

The frames B, C, and D, are attached to the car by means of the pipes M M, which said pipes M M, extend from the points *x x*, where they are connected with the horizontal pipe *z*, said pipe *z*, being hinged to the car R, at *f f*. Said pipes M M, extend downward to points *s s*, where the threads on the outer sides of tees to which said pipes M M, are fastened, form hinges, on which the outer frames B, and D, may be tipped forward and downward. The middle frame C, for this purpose, is provided with hinges at *c c*, where straps pass around the middle cross-piece thereof. The frames B, C, and D, are fastened together at their upper ends by means of the bar *e*. The lever E, being attached to the bar *e*, at *h*, when the lever E is raised it tips all three frames forward together. The lever E may be fastened at any desired point by means of the semicircular piece J, which is fastened to the cross-bar *d*, Fig. 1. The outer frames B, and D, are hinged to the rest of the mechanism at *a*, and *b*, where the pipes comprising the inner sides of said frames B, and D, pass through tees of larger size than said inner sides of said frames.

Cables *m m*, extend from the standards L L, through pulleys *l l*, on to levers G G, and hold the frames B, and D, in the desired position. By pulling the levers G G, back on the semicircles *i i*, the frames B, and D, are drawn upward and inward, as would be desirable when burning through cuts and when the machine is being moved over the

road, and by moving the levers G G forward, the frames B, and D, are allowed to fall outward and downward thus bringing the burners nearer to the sides of grades, as would be desirable when burning grass growing thereon. The semicircles *i i*, are fastened to plates P P, and said plates P P, are fastened to the cross-bar *d*, and the horizontal pipe *z*, so that when the frames B, C, and D, are raised by means of the shaft F, and chain H, the outer frames B, and D, will not be allowed to drop down on the outer sides.

The standards I I, connected with the central cross-pipe of the middle frame C, and tied together at the top by the pipe *t*, and the stays *n n*, which are connected with these standards by means of tees at the ends of the pipe *t*, and at their lower ends by means of tees in the horizontal pipe *z*, besides furnishing suitable means for fastening the pulleys *l l*, are also for the purpose of strengthening the framework and causing it all to work rigidly together.

The steam pipe *k*, leads the steam from the boiler of the locomotive or other boiler and connects with the upper pipe of the middle frame C, at S, where the steam enters said pipe and is distributed through said pipe and connections *p p*, to the upper pipe of frames B, and D. The pipes of the frames B, C, and D, are plugged at *g g*, etc., and provided with openings *j j*, etc., where the steam is distributed to burners *q q*, etc., through pipes *y y*, etc. The pipes *p p*, which connect the upper parts of the frames B, C, and D, together are provided with swivel joints at *o o*, so that the outer frames B, and D, may swing thereon as on a hinge. The oil hose T, connects with the oil pipe which conducts oil from the oil tank, as shown in the original patent above referred to. The cylinders Q Q, shown in Figs. 2, and 4, show the relative position of the cylinders, of which there is a series as shown in the original patent aforesaid.

The grass-burning machine aforesaid may be attached to a self-propelled car, and said car may be provided with an oil tank for holding crude oil.

What I claim as my invention and desire to secure by Letters Patent is—

1. In a grass-burning machine of the character described, means for raising the frames containing the burners, consisting of two pieces of iron or steel fastened to the end of the car to which said machine is attached and extending therefrom upwardly and outward, fastened together at their outer ends by means of strips of iron or steel; said strips being provided with boxing which supports the end of a horizontal shaft, said horizontal shaft being provided with a chain fastened thereto and also to the frames below; the winding or unwinding of said chain about the said shaft being the means whereby said frames and burners are raised or lowered; the said horizontal shaft extending back over the car where it is provided with bevel gear which fits into other bevel gear of a vertical shaft; said vertical shaft being turned by means of hand or other power, substantially as described and for the purposes set forth.

2. In a grass-burning machine of the character described, three frames, fastened to a horizontal pipe extending across the end of a car and hinged thereto; said frames being fastened to said horizontal pipe by means of a pipe fastened thereto, and extending downwardly between said frames to near the horizontal center thereof and fastened thereto by means of tees; said frames extending downwardly and being fastened together at the top by a strip of iron or steel extending horizontally across, and fastened to, said frames; said strip of iron or steel to which said frames are fastened being provided with a lever attached thereto and extending up over the car so as to be easily handled by the operator; said frames being provided with hinges near the horizontal center whereby they may be tipped forward by means of said lever, and fastened in any desired position by means of a semicircular piece to which said lever may be fastened at any desired point, substantially as described and for the purposes mentioned.

3. In a grass-burning machine of the character described, improved means for tipping the two outer frames outward and downward and also for raising them up and folding them inward, comprising hinges fastened to the inner side of said outside frames, the said frames being held in any desired position by cables fastened to the top of standards rising from the outer sides of said outer frames; said cables passing through pulleys on to controlling levers; said controlling levers being held at any desired point by notched semicircles fastened to plates of iron or steel; said plates being secured to the framework so that they will tip with it, substantially as described and for the purposes specified.

4. In a grass-burning machine of the character described, improved means for conducting steam to the crude oil burners, consisting of a main steam pipe extending from the boiler of the locomotive or other boiler, and connecting with the pipe which forms the upper side of the middle frame; said main steam pipe from the said boiler being so jointed as to allow freedom of motion to said frames; the steam being conducted from said point where it enters said

upper side of said middle frame, through pipes which connect the three frames together, and distributed from the upper side of each frame, through individually controlled feeder pipes which connect with the crude oil burners at convenient points; said pipes of said frames being plugged at convenient points so as to confine the steam to the upper parts of said three frames, substantially as shown and for the purposes set forth.

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