

No. 641,529.

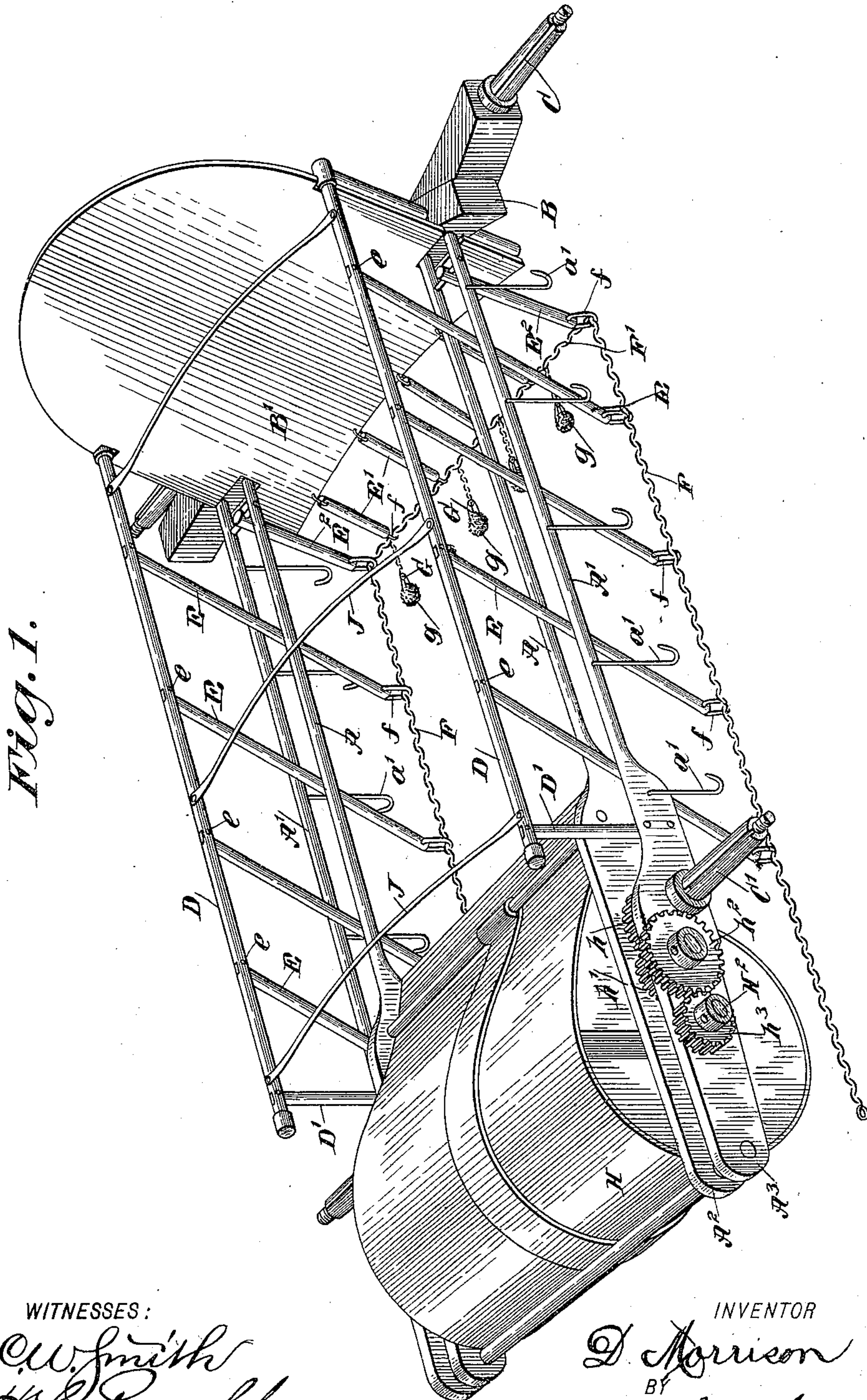
Patented Jan. 16, 1900.

D. MORRISON.
GRASS OR STUBBLE BURNER.

(Application filed July 13, 1899.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES:
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2 Sheets—Sheet 2.

Fig. 2.

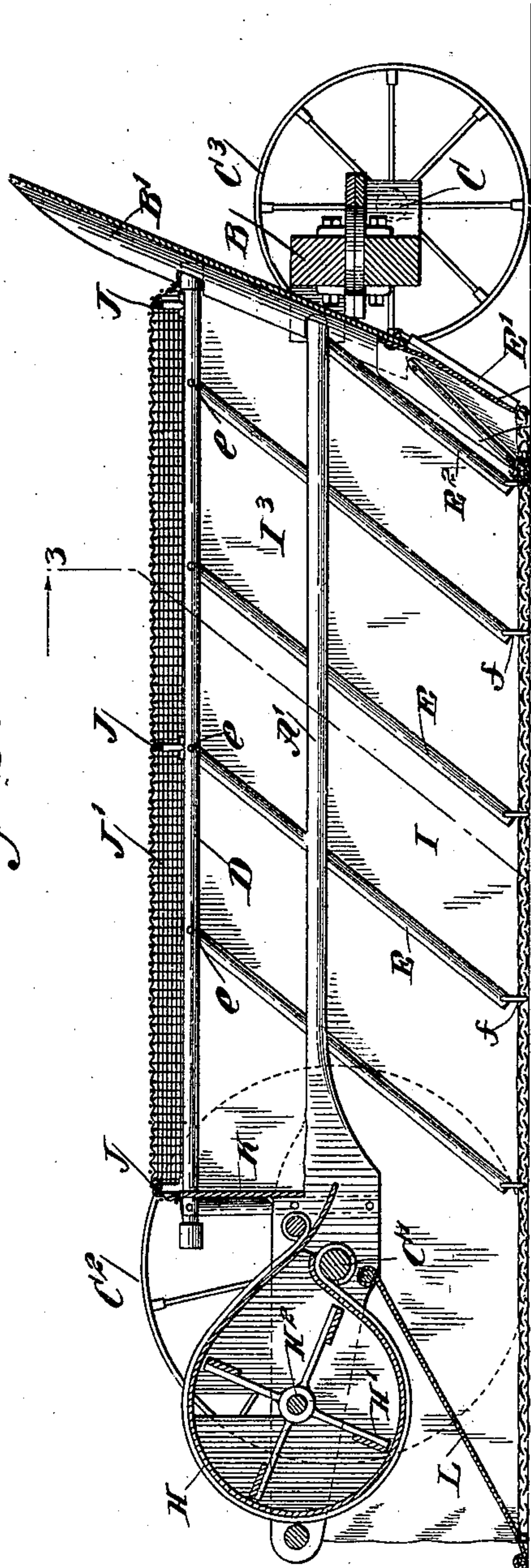


Fig. 3.

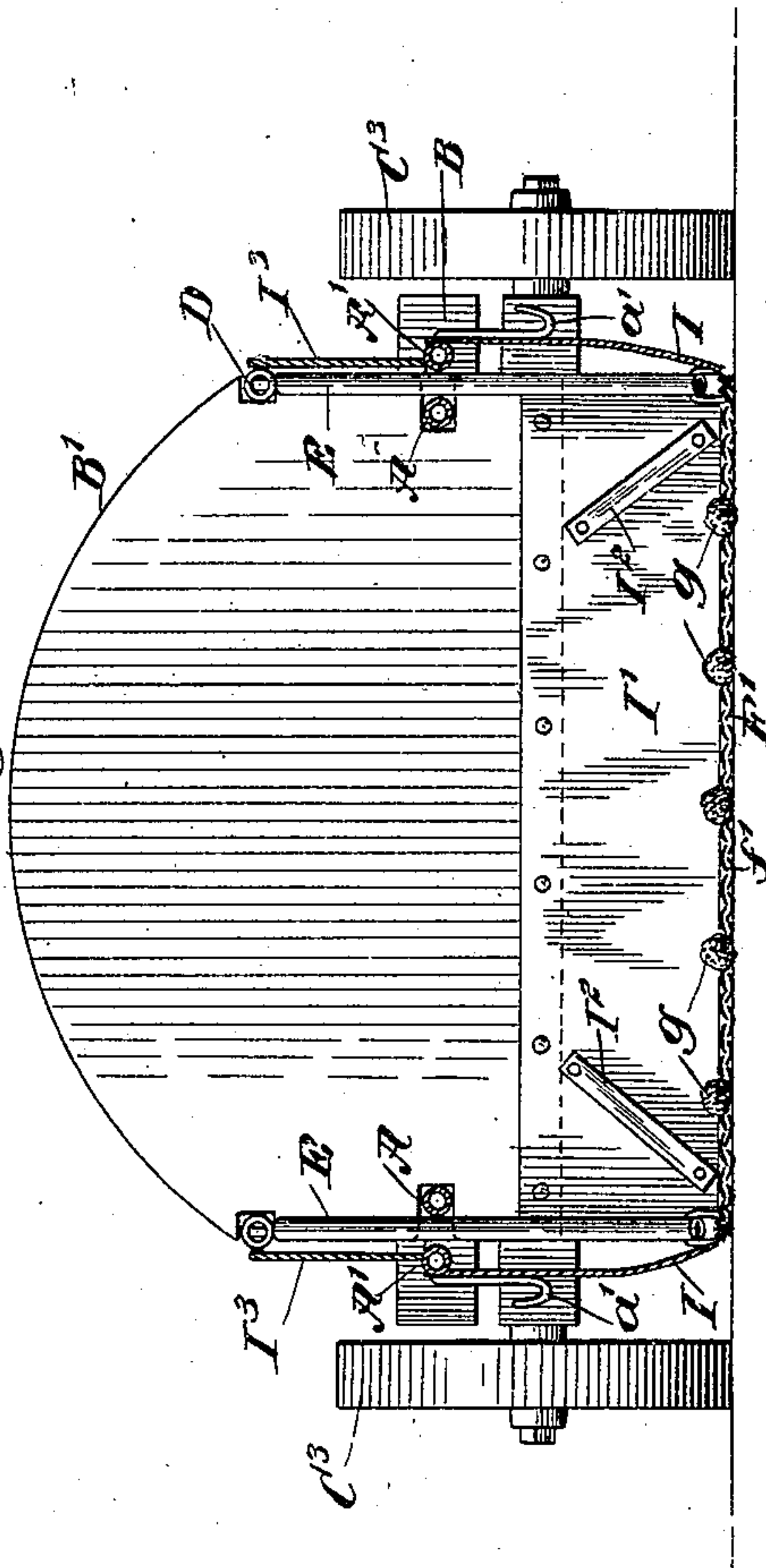
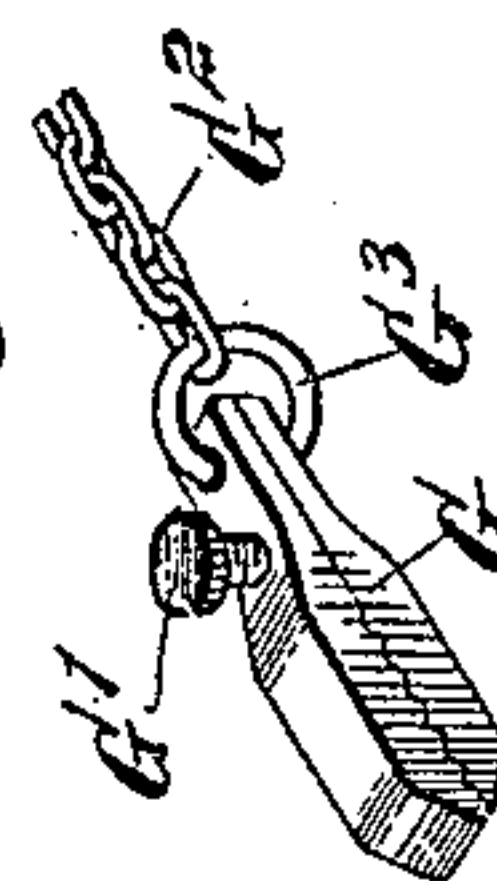


Fig. 4.



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UNITED STATES PATENT OFFICE.

DANIEL MORRISON, OF MAPLE CREEK, CANADA, ASSIGNOR OF ONE-HALF
TO JOHN H. FLEMING, OF SAME PLACE.

GRASS OR STUBBLE BURNER.

SPECIFICATION forming part of Letters Patent No. 641,529, dated January 16, 1900.

Application filed July 13, 1899. Serial No. 723,692. (No model.)

To all whom it may concern:

Be it known that I, DANIEL MORRISON, of Maple Creek, in the Northwest Territories and Dominion of Canada, have invented a
5 new and Improved Grass or Stubble Burner, of which the following is a full, clear, and exact description.

My invention relates to an improvement in devices designed for burning grass or stubble
10 in order to provide fire-breaks or to clear the ground, so that fires may not break through and destroy property.

My invention comprises a device which is designed to set fire to the stubble and then to
15 continue the fire by means of a draft of air as the device moves over the ground, thus burning a strip equal in width to the width of the machine.

My invention comprises the novel features
20 which are hereinafter described and claimed.

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 all the figures.

25 Figure 1 is a perspective view of my device with the curtains, the screen, and the wheels removed. Fig. 2 is a longitudinal sectional elevation of my device in its complete form. Fig. 3 is a cross-sectional elevation taken on
30 the line 3 3 of Fig. 2, and Fig. 4 is a detail view of the device for holding the torches or fire-starting device.

The object of my invention is to produce a machine which may be driven over the prairie
35 or stubble-fields and by means of which a strip of grass or stubble may be burned, so that in case a fire should break out upon one side of this strip it could not pass across to the opposite side. In western portions of the
40 United States and Canada it is very common to have prairie fires, which are liable to cause a great deal of loss by burning buildings and grain unless the same are protected by proper fire-breaks. With my present invention it is
45 possible to burn off strips of the grass or stubble, so as to furnish efficient protection against fire.

My device consists of a suitable frame mounted upon wheels, so that it may be drawn
50 over the fields and prairie and is provided with means for starting and continuing a fire

upon the grass or stubble which is at the time inclosed within the confines of the machine, the machine being provided with aprons of fireproof material, which will prevent the
55 spreading of the fire to one side of the machine.

Forward and rear axles C and C' are provided, each of which is provided with suitable wheels C³ and C² and are connected by means
60 of the framework, the principal portion of which consists of the two side bars A and A'. These side bars, as herein shown, are designed to be constructed of iron pipe and at their rear ends have plates A² and A³ secured there-
65 to and providing bearings for the rear axle and for the train of gears by which the fan is rotated. The longitudinal or side bars connect with the front and rear axles and also have vertical bars D', which support the lon-
70 gitudinal bars D, located above the bars A. These bars D are connected with each other by means of cross-bars J, upon which a wire screen J' is supported.

At the forward end of the machine is placed
75 a dashboard B', which is formed of sheet metal and prevents fire from being blown ahead of the machine. Pivoted at the points e upon the longitudinal bars D is a series of depending bars E, which lie between the lon-
80 gitudinal bars A and A', and are thereby prevented from having any considerable side-wise movement. They are, however, free to swing upwardly and back, their lower ends being intended to be in contact or very close
85 to the ground when the machine is in use. To the lower ends of the bars E is secured a chain F, which is also secured to the lower edge of the curtain I and is designed to connect these bars at regular intervals and to
90 drag upon the surface of the ground. The forward end of this chain is connected with a bar E², which is pivoted upon the bars A and A'.

Connected with the lower edge of the dash-
95 board B' is a series of bars E', which are pivoted so that they may swing backward upon contact with the ground. These bars are connected with a chain F' by means of links f, similar links being also used for connecting
100 the bars E with the chain F.

The curtains by means of which the frame-

work is inclosed are not shown in Fig. 1, but are shown in place in Figs. 2 and 3. These curtains are constructed of some non-combustible material—as, for instance, asbestos.

5 An upper side curtain I^3 is connected with the upper longitudinal bar D and to the bar A' . To the bar A' is connected a second curtain I, which is of sufficient width to drop to the ground. This curtain is connected with
10 the chain F, and is therefore held close to or in contact with the ground at all times. The chain F being flexible and of considerable weight will serve to hold the lower edge of the curtain down upon the ground and will
15 also drop into any small depressions which are encountered, thus maintaining close contact with the ground and preventing the spread of the fire outside of the machine.

Mounted upon the rear portion of the machine is a shaft H^2 , upon which is mounted a fan H' , the same being inclosed within a casing H. This casing has its opening directed forward and within the inclosure formed by the curtains and the wire screen
25 J' . This fan is turned by means of a train of gears consisting of the gear h upon the axle C' , a pinion h' upon an idler-shaft, and a gear h^2 upon the same shaft, which meshes with a pinion h^3 upon the fan-shaft.

30 To the chain F' , which extends across the front end of the machine, or to the bars E' , which depend from the dashboard, as is found desirable, are secured a number of torches g , by which the fire is first started. The clamps
35 for holding these torches are shown in detail in Fig. 4 and consist of two plates or jaws G, which are swung upon a ring G^3 , to which is connected a short chain G^2 , the other end of which is connected with the chain F' . The
40 two jaws G are secured together by means of a set-screw G' , which passes through one of the jaws and screws into the other. Between these two jaws is placed a bunch of asbestos, felt, or any other non-combustible material
45 which will absorb and retain oil. The torches are soaked in oil and lighted when the machine is first put into use, thus setting fire to the stubble. It is not designed that these torches should burn all the time that the machine is
50 in use, but only a sufficient length of time to insure setting the stubble or grass well on fire.

In the further progress of the machine the draft of air discharged from the fan H will cause the fire to extend forwardly without
55 using the torches g . The fire once being started will continue as long as the machine is advancing. In fact, the use of the torches is not always necessary, as a handful of straw or other combustible material thrown into
60 the inclosure and lighted will in many cases be sufficient, and if the grass or stubble is heavy, even this will not be necessary, as the grass or stubble if once lighted will be kept lighted by the forward motion of the device
65 and the action of the draft from the fan without any special lighting device.

The narrow apron I' , which extends from the lower edge of the dashboard B' to the ground, is provided with stiffening-bars I^2 , secured to each end thereof in a diagonal position, as shown in Fig. 3. This serves to
70 prevent the forward corners of the curtain from dropping backward. In order to preserve the side curtains while moving the machine from one place to another and when not
75 in use, hooks a' are provided, which depend from the longitudinal bars A' and are adapted to receive and support the chains F and the curtains attached thereto at a sufficient height to prevent their contact with the ground. 80

Bars L may be pivoted to the rear of the machine at each side and have a mattress or other device attached thereto which shall drag upon the ground immediately behind
85 each edge of the machine, thus insuring that the fire shall be extinguished at the edges, so that it will not spread.

The chain F is preferably constructed of considerable weight, so that it will be certain to lie close to the ground, even if the machine
90 is passing through heavy stubble and grass, as otherwise there would be a probability of fire spreading sidewise beneath the chain.

The screen J' , which covers the upper part of the machine, prevents any sparks from
95 passing outward, and thus spreading the fire.

In using my machine horses are hitched to the forward end thereof, and when the place where the fire-break is desired has been reached the torches g are lighted and the machine is driven over the fields or prairie at
100 the point where it is desired to burn the grass. The blast of air delivered by the fan will serve to drive the fire forward, so that when once started it will continue advancing forward as long as the forward motion of the machine is continued. The fire cannot spread
105 sidewise, as it is retained in place by the side curtains.

Having thus fully described my invention, 110 I claim as new and desire to secure by Letters Patent—

1. A grass and stubble burner, comprising a bottomless inclosing structure having fireproof curtains at the sides and adapted to be
115 moved over the ground, and a flexible weighting device as a chain secured to the bottom of the curtains, substantially as described.

2. A grass and stubble burner, comprising a bottomless inclosing structure having fireproof curtains at the sides and adapted to be
120 moved over the ground, a flexible weighting device as a chain secured to the bottom of the curtains, and a fan at the rear, discharging forwardly upon the grass, substantially
125 as described.

3. A grass and stubble burner, comprising a bottomless inclosing structure, having flexible fireproof curtains at its sides and adapted to be moved over the ground, a flexible weighting
130 device as a chain secured to the bottom of the curtains, a fan at the rear, discharging for-

wardly upon the grass, and fire-setting devices within the forward end of the inclosure, substantially as described.

4. A grass and stubble burner, comprising
5 a bottomless inclosing structure having flexible fireproof curtains at its sides and adapted to be moved over the ground, a flexible weighting device as a chain secured to the bottom of the curtains, and fire-setting devices within
10 the forward end of the inclosure, substantially as described.

5. A grass and stubble burner, comprising a frame mounted on wheels to be moved over the ground, curtains adapted to be secured to
15 the frame to form a bottomless inclosure, bars pivoted by their upper ends to the frame and adapted to drag their lower ends upon the ground, said bars being connected at their lower ends with the curtains, and means for
20 securing and maintaining a fire within the inclosure as the device is moved over the ground, substantially as described.

6. A grass and stubble burner, comprising a frame mounted on wheels to be moved over
25 the ground, curtains adapted to be secured to the frame to form a bottomless inclosure, bars pivoted by their upper ends to the frame and adapted to drag their lower ends upon the ground, chains secured to the lower ends of
30 said bars and extending along the sides and forward end of the device, the curtains being secured to the chains, and means for securing and maintaining a fire within the inclosure, as the device is moved over the ground,
35 substantially as described.

7. A grass and stubble burner, comprising a frame mounted on wheels to be moved over the ground, curtains adapted to be secured to the frame to form a bottomless inclosure, bars
40 pivoted by their upper ends to the frame and adapted to drag their lower ends upon the ground, the said bars being connected at their lower ends with the curtains, torches at the forward end of the inclosure, and a fan at the rear, discharging forwardly upon the grass,
45 substantially as described.

8. A grass and stubble burner, comprising a frame adapted to be moved over the ground, curtains suspended from the frame, bars pivoted by their upper ends to the frame and
50 adapted to drag their lower ends upon the ground, the said bars being connected at their lower ends with the curtains, and a traction operated fan at the rear of the inclosure discharging forwardly, substantially as de-
55 scribed.

9. In a grass and stubble burner, the inclosing aprons having a flexible weighting device as a chain at their lower edges, substantially
60 as described.

10. In a grass and stubble burner, the inclosing aprons having a flexible weighting device as a chain at their lower edges, and hooks adapted to support the chains in an elevated position, substantially as described.

DANIEL MORRISON.

Witnesses:

J. R. A. DIXON,
R. ARMSTRONG.