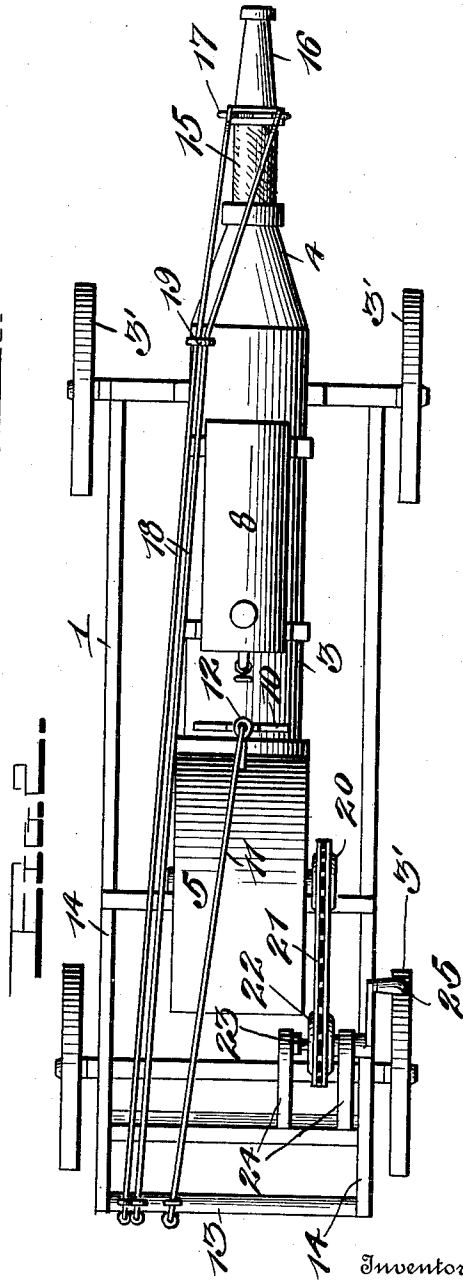
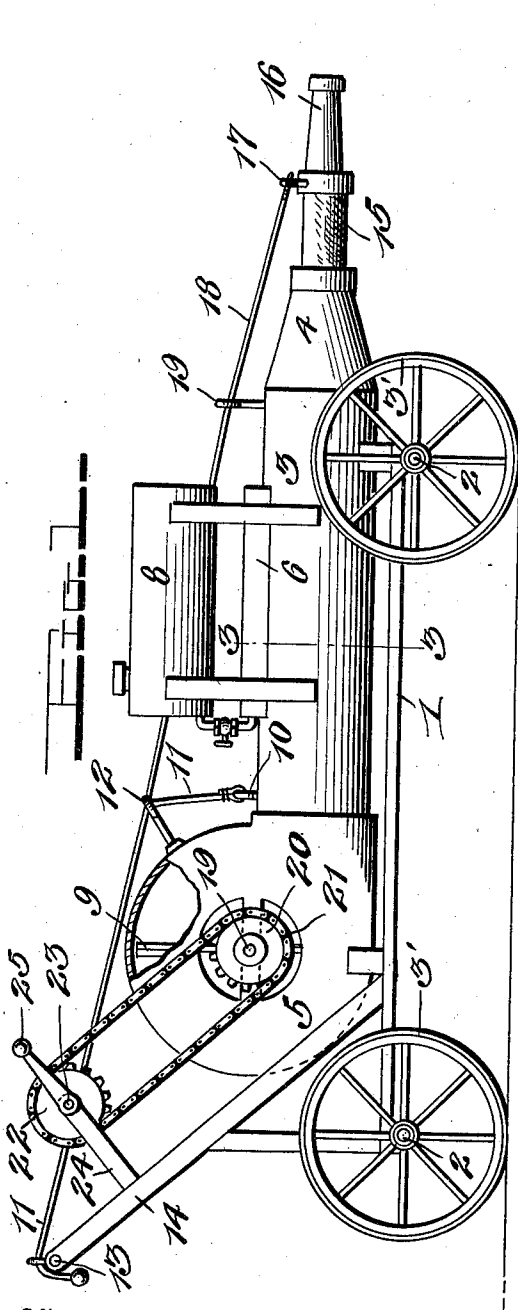


J. J. BELLEW.
FIRE SPRAYER.
APPLICATION FILED AUG. 12, 1911.

1,031,104.

Patented July 2, 1912.
2 SHEETS—SHEET 1.



Witnesses

Chas. L. Griestauer.
A. B. Norton.

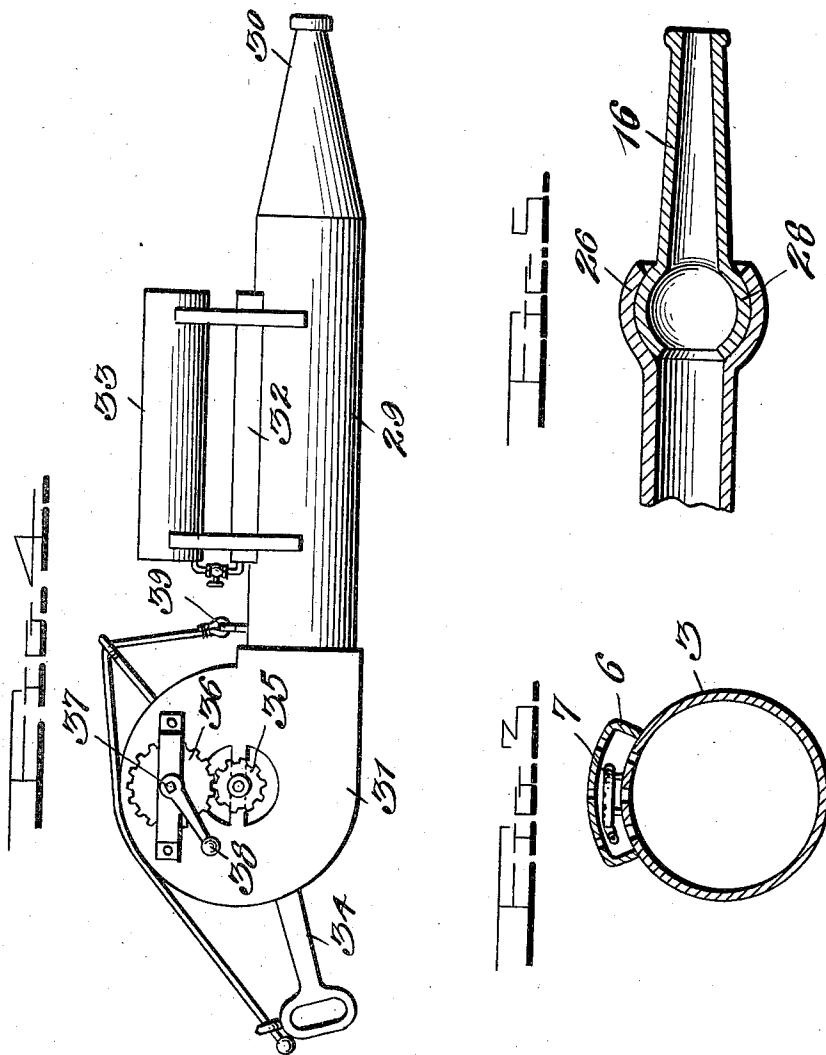
J. J. Bellew,

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UNITED STATES PATENT OFFICE.

JOHN JOSEPH BELLEW, OF BLUFFTON, ARKANSAS.

FIRE-SPRAYER.

1,031,104.

Specification of Letters Patent.

Patented July 2, 1912.

Application filed August 12, 1911. Serial No. 643,695.

To all whom it may concern:

Be it known that I, JOHN JOSEPH BELLEW, a citizen of the United States, residing at Bluffton, in the county of Yell and State of Arkansas, have invented certain new and useful Improvements in Fire-Sprayers, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to new and useful improvements in fire sprayers and more particularly to a device of this character for exterminating insects, young vegetation and the like, and my object is to provide a device of this character which may be operated manually or mechanically to accomplish the result desired.

A further object of the invention resides in the provision of a device having a combustion chamber thereon and a blower for the purpose of blowing the flame and products of combustion from said chamber.

A further object resides in the provision of means for the operation of said blower, and a still further object resides in providing means to regulate the amount of air which is produced by the blower.

A still further object resides in providing means whereby the flame and products of combustion which are emitted from the device, may be directed to any point.

A still further object of the invention resides in the provision of a device which is comparatively simple in construction, thereby readily and cheaply manufactured, and one which is very effective and useful in operation.

With these and other objects in view, my invention consists in the novel features of construction, combination and arrangement of parts as will be hereinafter referred to and more particularly pointed out in the specification and claim.

In the accompanying drawings forming a part of this application, Figure 1 is a side elevation of the device partly in section mounted on a movable frame. Fig. 2 is a top plan view thereof. Fig. 3 is a transverse section as seen on line 3—3, Fig. 1. Fig. 4 is a side elevation of a slightly modified form of fire sprayer, and, Fig. 5 is a further modification showing an additional means of connecting the nozzle to the main member of the device.

In carrying out my invention, I shall refer to the drawings in which similar reference

characters designate corresponding parts throughout the several views and in which 1 indicates a frame, the front and rear ends of which have mounted thereon, the axles 2, and carried on the ends of said axles, are the supporting wheels 3' whereby the frame may be readily moved from place to place. Mounted on said frame longitudinally thereof so as to project some distance beyond the front axle 2, is a hollow cylindrical member 3 which is tapered smaller toward its forward end, as shown at 4, and is provided at its rear end with an enlarged portion 5 which forms an additional and communicating chamber at that point, and formed on the cylindrical member 3 so as to face upwardly therefrom, is an additional chamber 6 which is provided with a plurality of openings in the top thereof. This latter chamber 6 forms a substantial combustion chamber, the same being provided with any number of burners or the like 7 which receive a hydro-carbon or any other desired combustible oils from a supply or storage tank 8 also carried on the frame 1, and the wall of the member 3 between the chamber 6 and the member 3 proper is perforated so that the flame and products of combustion will pass from the chamber 6 to points within the member 3.

The enlarged portion 5 on the rear end of the member 3 incloses a chamber and forms a casing for a blower or fan 9 which is rotatably mounted therein, and it will be seen that as said blower is rotated, the flame and products of combustion which are driven into the member 3 from the chamber 6, will be blown outwardly toward the tapered end 4. In order to regulate the amount of air which flows from the chamber inclosed by the enlargement 5 to the member 3, I provide a damper or adjusting plate 10 which is vertically movable in the member 3 at the junction thereof with the enlargement 5, and when this damper is raised to its uppermost position, the greatest amount of air will be allowed to pass from the fan to the member 3 as said fan is rotated. I have provided for the operation of this damper 10 by providing an eye on the upper end thereof with which is engaged one end of a cable or the like 11, said cable being extended through a guide member 12 carried on the member 3 and extended to the handle member 13 which is supported from the frame 1 by means of the arms 14. The operator of the

device who is usually positioned at the point wherein the handle is disposed, may readily draw upon the cable 11 which is positioned thereon to operate the damper 10 and thereby regulate the amount of air which is to be used in spraying the flame.

As stated, the forward end of the member 3 is tapered, and secured thereto by means of a coupling 15, is a nozzle 16. This coupling 15 is formed preferably of asbestos and wire, thereby providing a flexible, but non-combustible connection, whereby it will be seen that the nozzle 16 is adapted to be adjusted and directed in any position. In order to provide means whereby the operator of the device may have full control of the disposing of this nozzle in various directions, I provide an arm 17 on said nozzle which extends horizontally thereof, and engaged with the ends of said arm, are the cables or other flexible connections 18 which extend through a guide member 19 carried on the member 3 and to the handle 13, and thus, when it is desired to position the nozzle in one direction, one cable is drawn, while when it is desired to position the same in an opposite direction, the other cable is drawn, it being understood that the normal position of the coupling is such as to dispose the nozzle in alinement with the member 3.

In order to provide means whereby the blower 9 may be rotated, a shaft 19, upon which the blower is mounted, extends beyond the enlarged casing 5 and has mounted thereon, a sprocket wheel or the like 20 over which extends a chain 21. This chain 21 leads to an additional sprocket wheel 22 carried on a shaft 23 which is rotatably supported above the frame 1 by means of the brace bars 24, and one end of said shaft 23 is provided with a crank or handle member 25, whereby the same may be readily rotated to correspondingly rotate the shaft 19 upon which the blower is mounted. This handle member 25 is positioned contiguous with the handle member 13, whereby the operator may readily turn the same while the device is being propelled to cause fire to spray from the nozzle simultaneously therewith.

In Fig. 5, I have shown a modified form of connection between the member 3 and the nozzle member which consists in forming a universal joint 26 therebetween by forming an enlargement 28 on the nozzle member 16. The device is otherwise the same when such a modified form is applied, and it will be seen that the nozzle may be disposed in any direction, whatsoever, and held therein until positioned otherwise, it being understood that the member 3 and the member 16 are formed of metal so that the sections thereof which comprise the universal joint, will likewise be formed of a fire-proof material.

In Fig. 4, I have shown a modified form of fire sprayer which is portable and may be carried around by hand and consists of a cylindrical member 29, the forward end of which is tapered to form a nozzle member or the like 30, while the inner end thereof is enlarged, as shown at 31, to receive a fan or blower (not shown). The chamber 32 is also formed on the upper face of the member 29 similar to the chamber 6, as shown and described in the other form, which chamber communicates with a small oil tank 33 braced on said member 29, whereby a continuous flow of oil or the like may enter the chamber 32 and be ignited to cause the flame to enter the chamber 29, as described in the other form. The enlargement 31 has provided thereon an extension 34 which forms a handle member for the device, and the shaft upon which the fan within the member 31 is mounted, has provided thereon, a gear wheel 35 which meshes with a similar gear 36 carried on a shaft 37 supported on the outer face of the member 31. This shaft 37 is also provided with a handle member 38, whereby the fan may be readily rotated by the operator to cause air to force the flame entered within the member 29 to be emitted from the nozzle portion 30 thereof. In this form, there is also provided a damper 39 which is operable in the same manner as the damper 10 shown in the other form, whereby the amount of air flowing into the member 29 from the blower may be regulated.

Although I have not described the same, it will be understood that any means may be provided for the regulation of hydrocarbon or other oil to the combustion chamber of the device, and furthermore, it will be appreciated that, if desired, the shaft upon which the blower is mounted, may be connected with any form of steam or gas engine which may be mounted on the frame of the device, whereby the same may be operated mechanically instead of manually, as described. In this connection, it must be stated that various changes in form, proportion and in the minor details of construction may be resorted to without departing from the spirit or sacrificing any of the principles of the invention.

From the foregoing, it will be seen that I have provided an improved form of fire sprayer which is adapted to be used for exterminating insects, vegetation and the like, and which, being portable, may be readily moved from place to place. It will further be seen that I have provided means for the regulation of the air which is produced from the blower to correspondingly regulate the amount of flame which is emitted from the device. Furthermore, it will be seen that I have provided means for the adjustment of the nozzle through which the

flame is emitted, whereby the operator of the device may readily direct the flame, as desired. It will still further be seen that the device is extremely simple, but durable in construction, thereby cheaply manufactured, and one which is very effective and useful in operation.

What I claim is:—

10 A fire sprayer of the class described comprising an elongated tubular receptacle, the forward end of which is designed conically, a blower mounted in the rear end thereof, a combustion chamber mounted on said receptacle intermediate of its ends, said receptacle being provided with a plurality
15 of openings to provide communication with said combustion chamber, said combustion chamber also having air inlet openings in the top thereof, burners mounted within
20 said combustion chamber, a fuel supply tank

supported on the receptacle immediately above said combustion chamber, connecting means between said supply tank, and the burners within said combustion chamber, a nozzle, flexible connecting members extending from said nozzle to the rear of said receptacle, a guiding eye mounted on the receptacle through which said flexible members extend, a damper plate slidably mounted in the rear end of said receptacle, a flexible operating member connected therewith, and an additional guiding eye mounted on the outer casing of the blower through which said flexible operating member extends.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

JOHN JOSEPH BELLEW.

Witnesses:

EDWARD L. TATUM,
JAMES R. PRIDDY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."