

M. V. NOBLES.
Improvement in Snow Excavators.
No. 132,684. Patented Oct. 29, 1872.

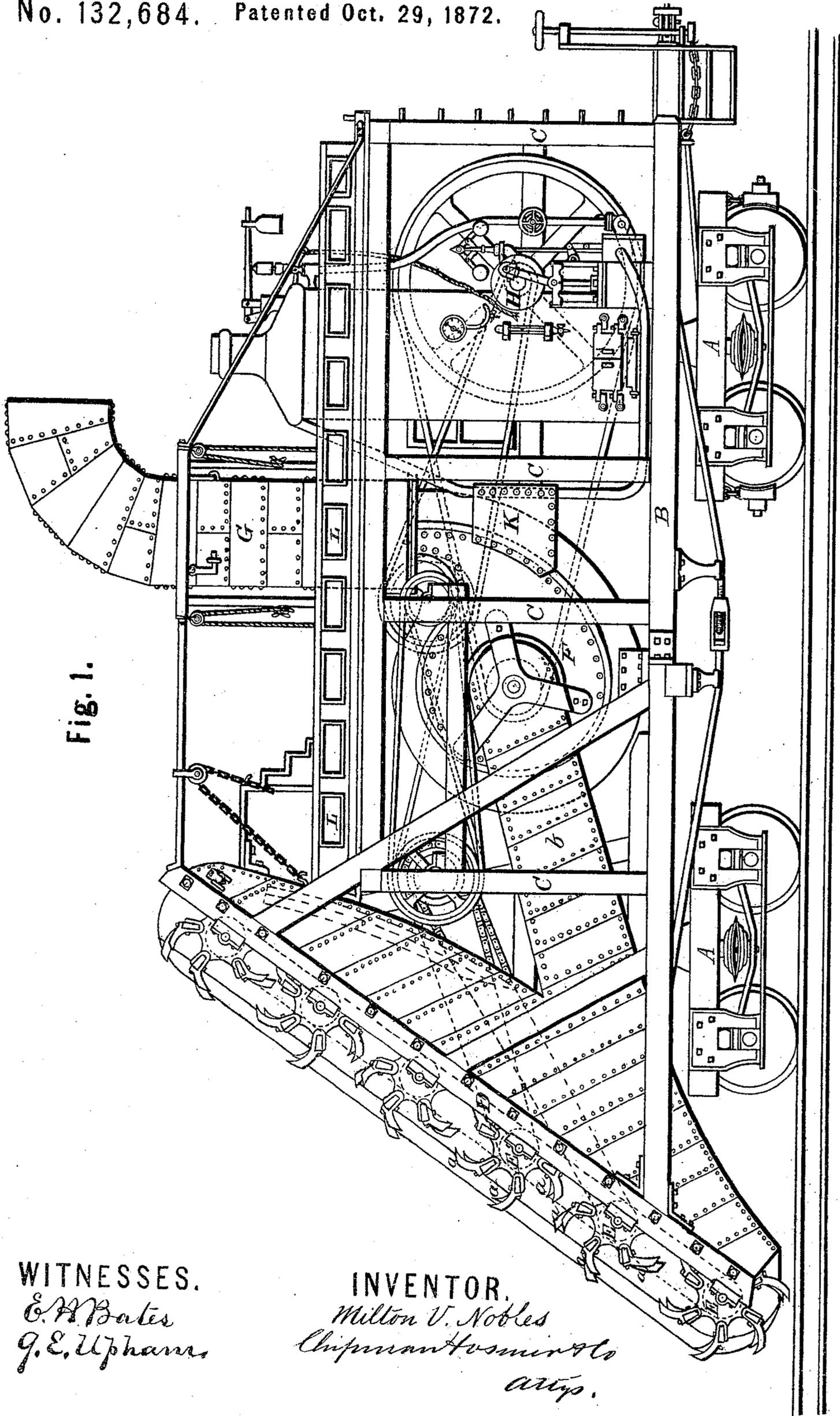


Fig. 1.

WITNESSES.
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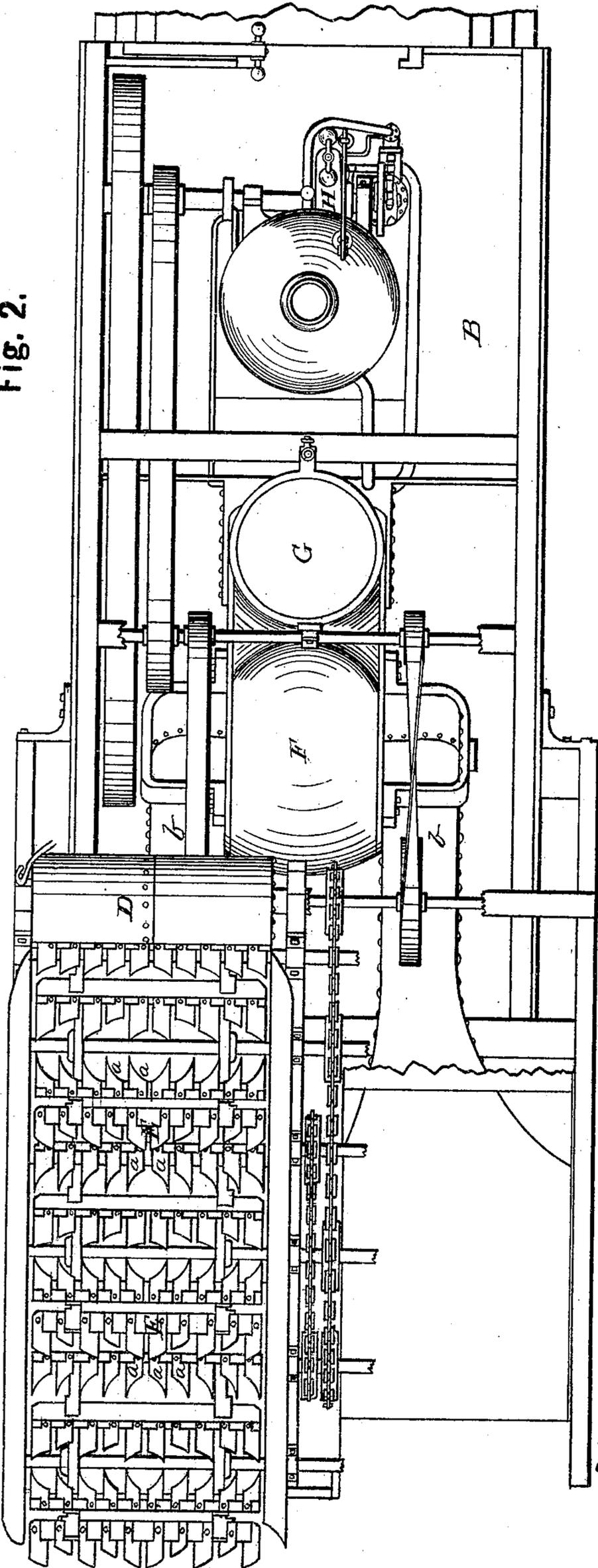
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Fig. 2.



WITNESSES.

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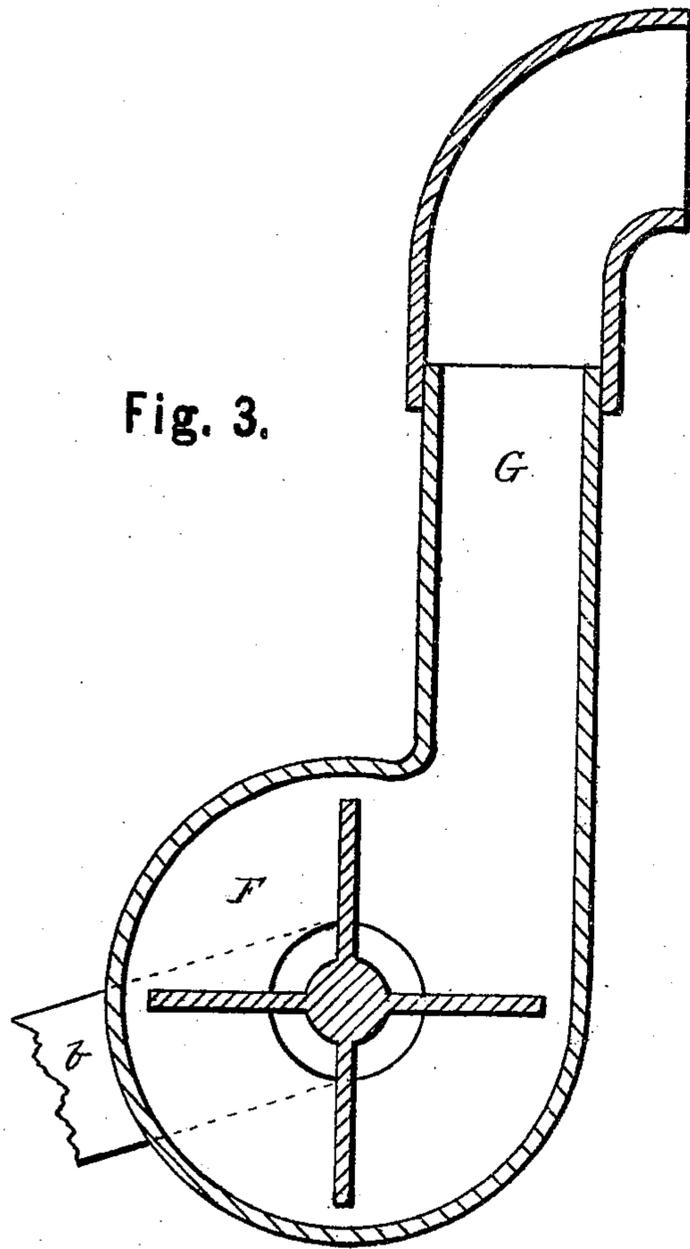


Fig. 3.

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UNITED STATES PATENT OFFICE.

MILTON V. NOBLES, OF ELMIRA, NEW YORK.

IMPROVEMENT IN SNOW-EXCAVATORS.

Specification forming part of Letters Patent No. 132,684, dated October 29, 1872.

To all whom it may concern:

Be it known that I, MILTON V. NOBLES, of Elmira, in the county of Chemung and State of New York, have invented a new and valuable Improvement in Snow-Excavators; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawing making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawing is a representation of a side view of my invention with wall removed; Fig. 2 is a plan view of the same; and Fig. 3 is a vertical section of fan-case and fan.

This invention has relation to means for clearing roadways and railways of the snow banks and drifts which obstruct them in winter weather; and it consists in the combination and novel arrangement of devices constituting a snow plow and excavator, adapted to operate by means of an exhaust fan and blower and tubular shaft, as hereinafter described.

In the accompanying drawing, the letter A designates the trucks upon which the platform B rests, uprights C being provided to support the top ends and side planking of the box which incloses the operators and machinery. D represents the oblique front of the car extending downward and forward below the platform. This front is constructed as a double concave box, divided along its central line, and provided with a series of shafts running horizontally one above the other, and carrying each a number of wheels or cylinders, E, provided with oblique-curved scooping-plates or cutters *a*, which rotate toward each other in such a manner as to draw in the snow to the concave part of the box D behind the excavating-wheels or cylinders. Such an oblique cylinder may be placed at the other end of the car, so that it may work in either direction. Each compartment of the oblique front is provided at or near its lower end with an opening, by which communication is made through a tube or shaft, *b*, with the fan-case F, within which rotates the exhaust or propulsion fan, drawing in the snow from the concave receiver in front, by the exhaust action of the fan,

through the passages *b* and their openings at the sides of the fan, and blowing it out to the rear or sides through the large discharge-pipe G, as shown in the drawing at Fig. 3. A suitable engine, H, is provided within the car for running the fan and excavators, and may furnish power for propelling the machine when a locomotive is not at hand. K represents a water-tank connected, by means of a short tube or otherwise, with the fan-case in such a manner that the snow may be admitted to said tank when desired. A jet of steam will convert it into water, serving for the use of the engine or other purposes. Windows L are provided along the upper edge of the car to admit light.

The discharge-pipe G passes up through the top of the car, and is designed to extend upward through the snow-drift, although the body of the car may be within it. This pipe I usually make adjustable, so that it may be raised for deep drifts and lowered when necessary in passing under a bridge, or for other purposes. The pipe is also arranged to rotate in such a manner that it may be adapted to throw the snow in any direction.

Grapples are provided with my excavator, which are designed for pulling down the top snow of a very deep drift into the gorge which has been cut by the machine in penetrating the bank. These are only necessary when the drift is very deep, covering the excavator. In such a case the machine is backed out, the superincumbent snow pulled down into the excavation, and removed by a second advance of the plow.

In working around a bend it is necessary to excavate a wider space than on a straight stretch, on account of the length of the cars. This is accomplished by slotting the transoms on which the bed rests, or by other means, which will admit of the lateral adjustment of the excavator.

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

1. A snow-excavator, operating by means of a suction and propulsion fan, substantially as specified.

2. The combination, with the concave receiver and excavating plows, of the exhaust and propulsion fan, substantially as specified.

3. The combination, with the receiver having the damper and excavators, of the exhaust and propulsion fan, substantially as specified.

4. The combination, with a snow-excavator, of a propulsion and exhaust-fan, provided with an adjustable discharge-spout.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

MILTON V. NOBLES.

Witnesses:

GEO. E. UPHAM,
D. D. KANE.