

(No Model.)

4 Sheets—Sheet 1.

W. J. BURKE.
HEAD LIGHT FOR LOCOMOTIVES.

No. 431,872.

Patented July 8, 1890.

Fig. 1.

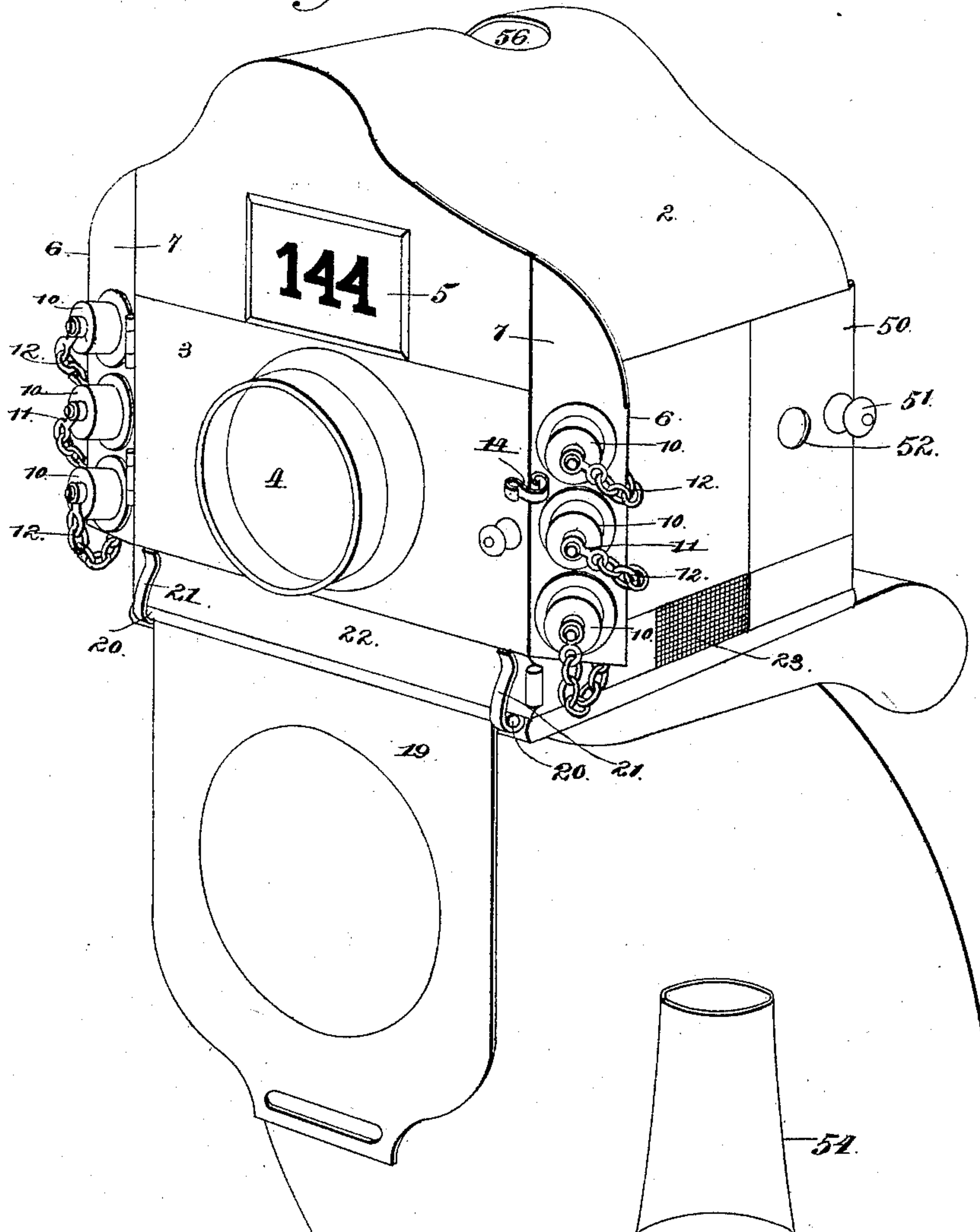
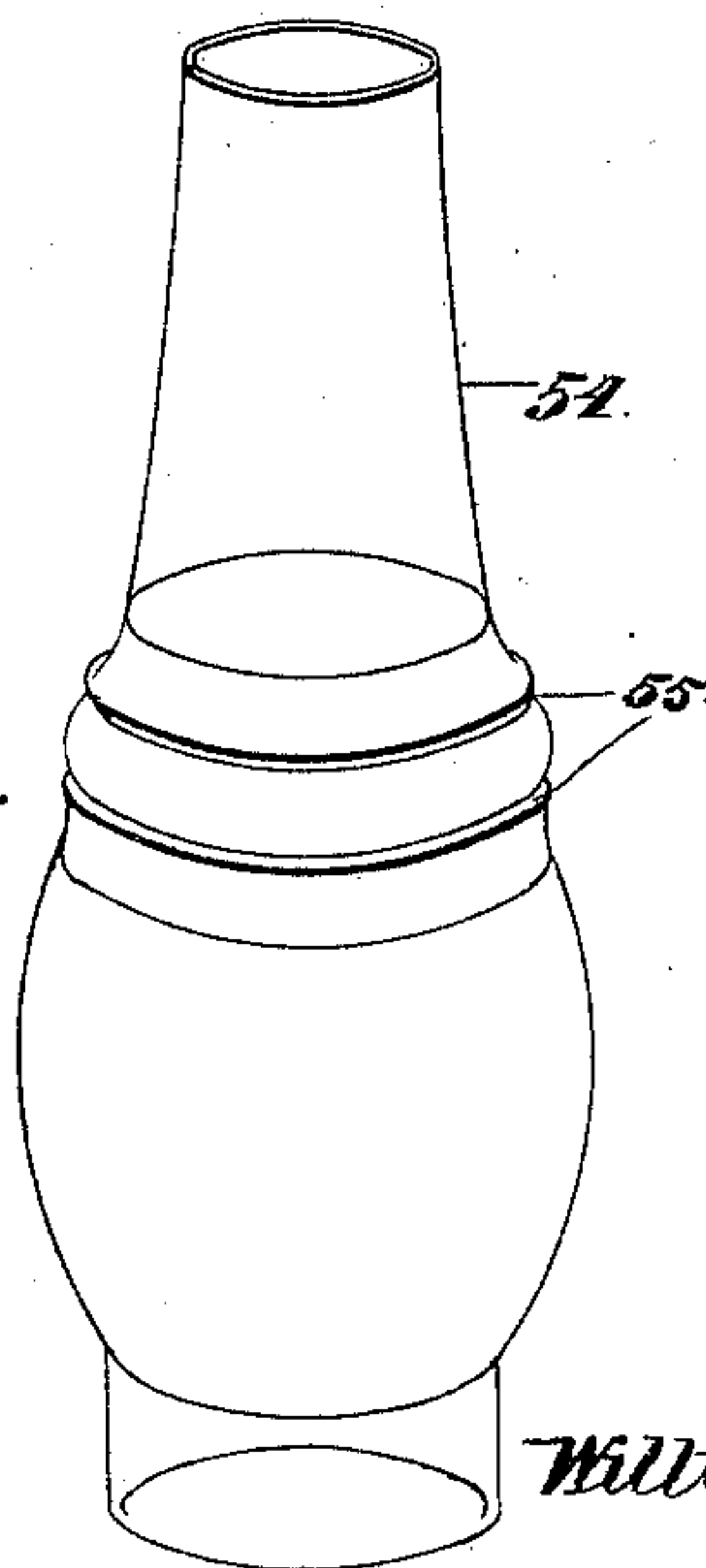


Fig. 3.



Witnesses

M. Fowler
Wm. Bagger.

By *his* Attorneys,

C. A. Snow & Co.

Inventor

William J. Burke

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Fig. 2.

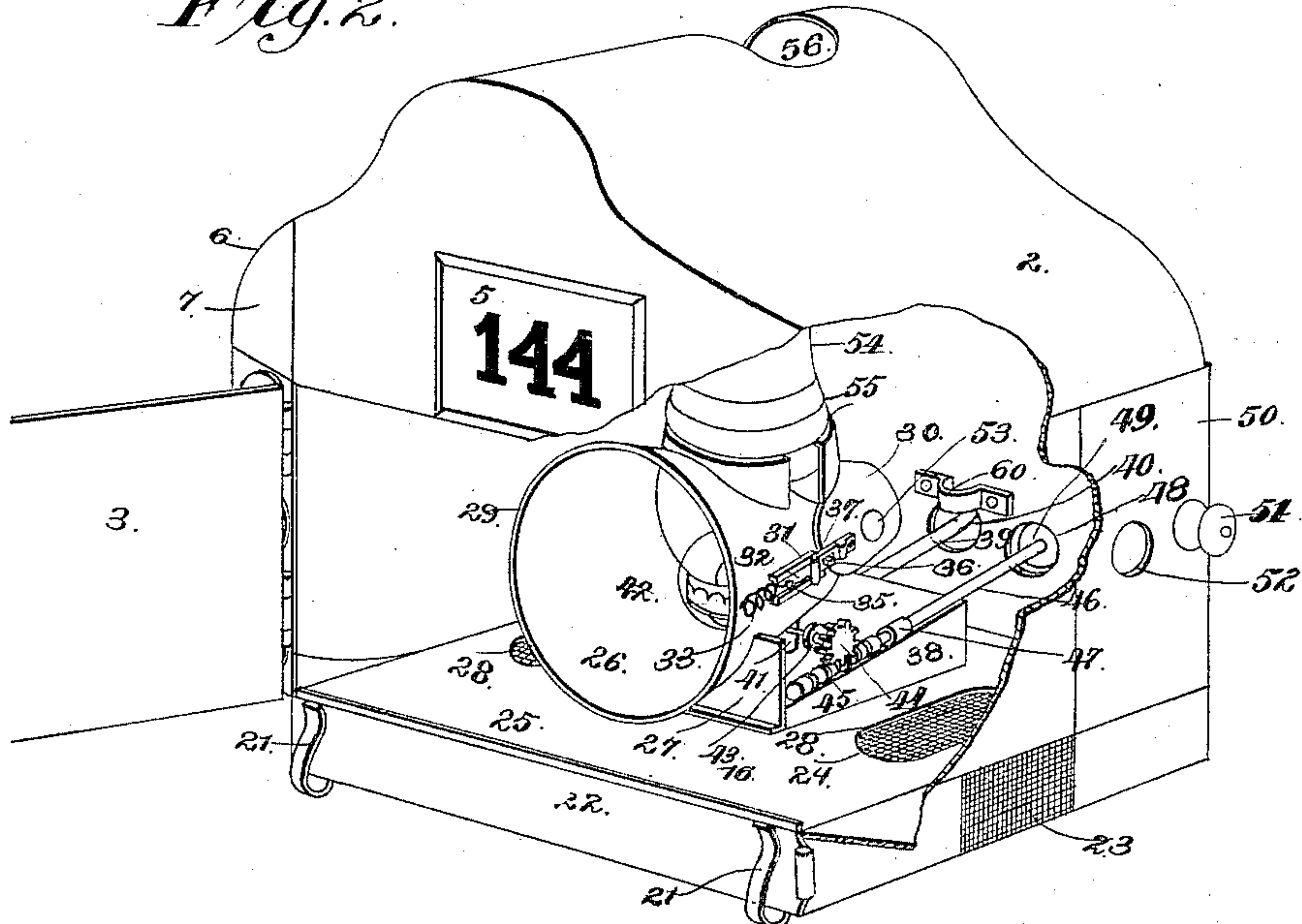
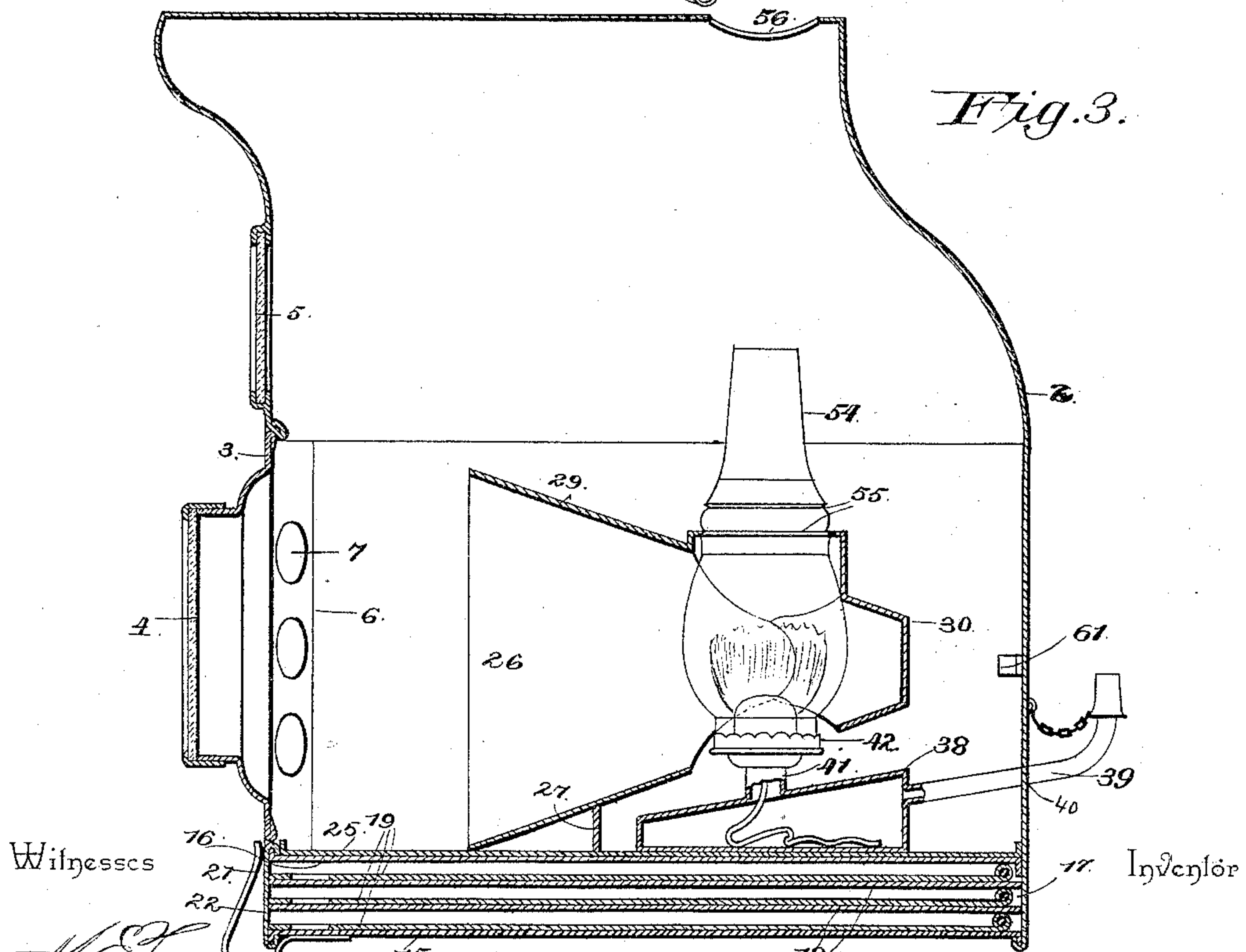


Fig. 3.



Witnesses

Wm. Baggett

By his Attorneys,

William J. Burke

C. A. Snow & Co.

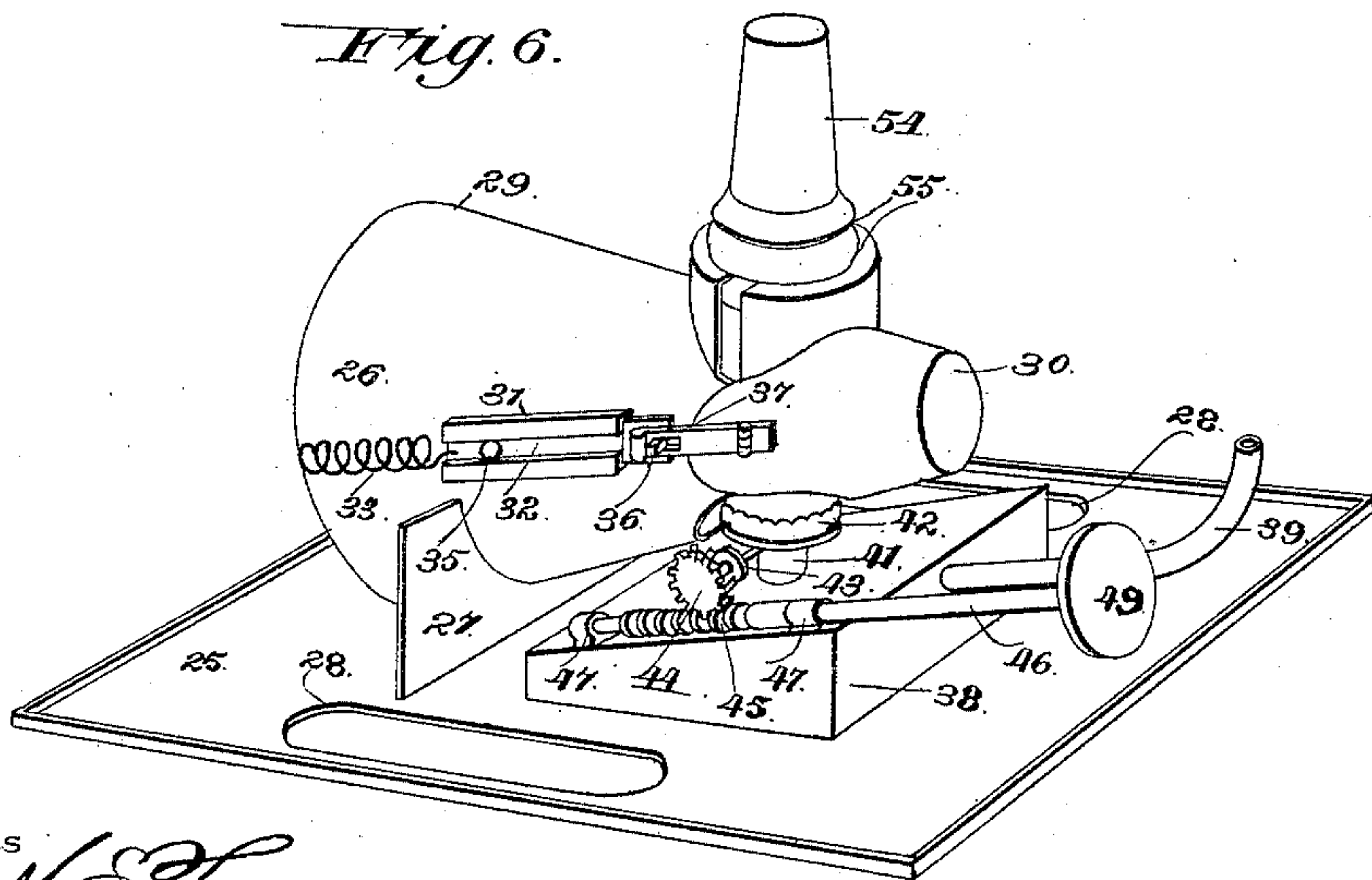
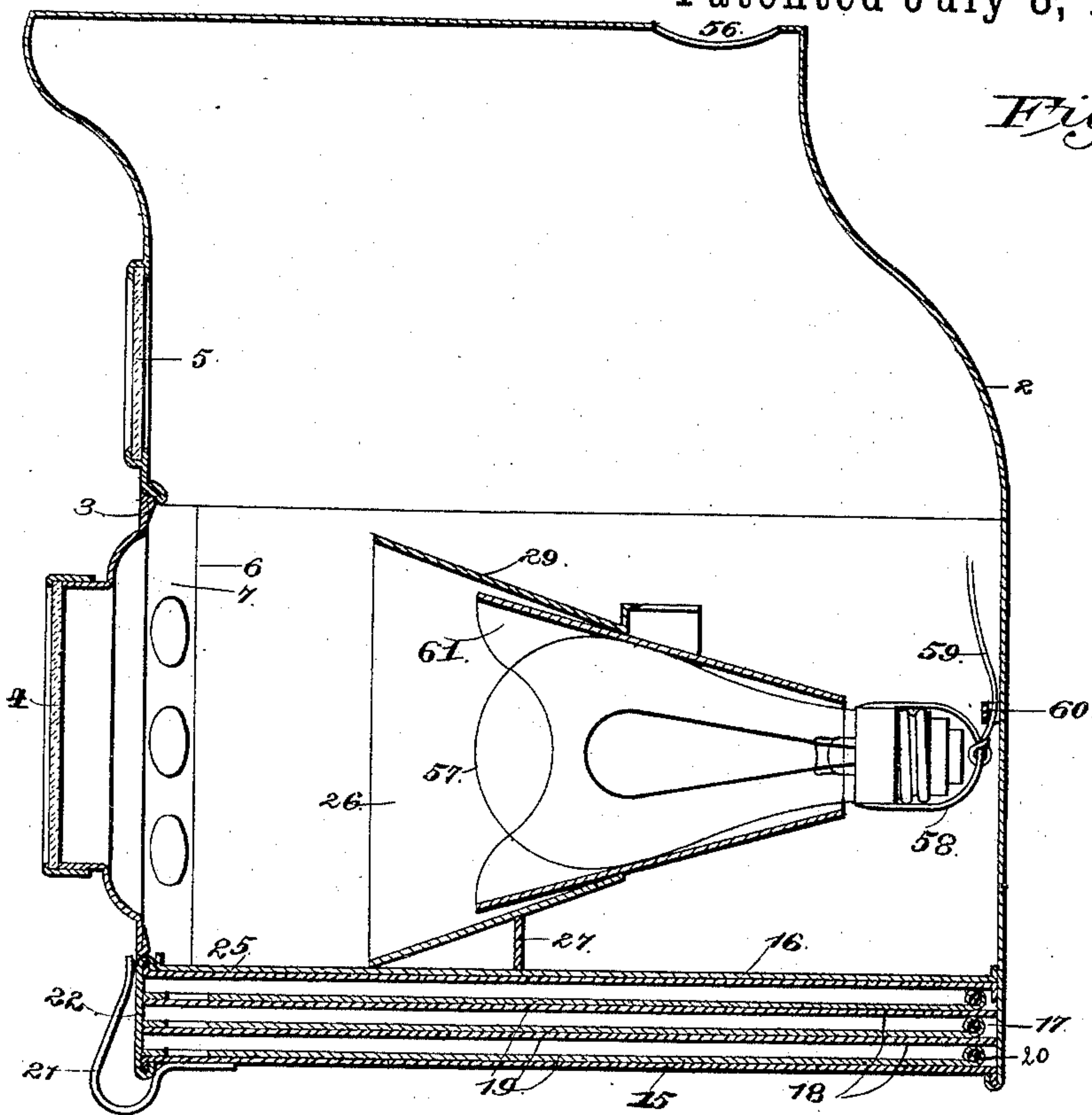
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M. E. Fowler.

Wm. Baggett.

By his Attorneys,

C. A. Snow & Co.

Inventor

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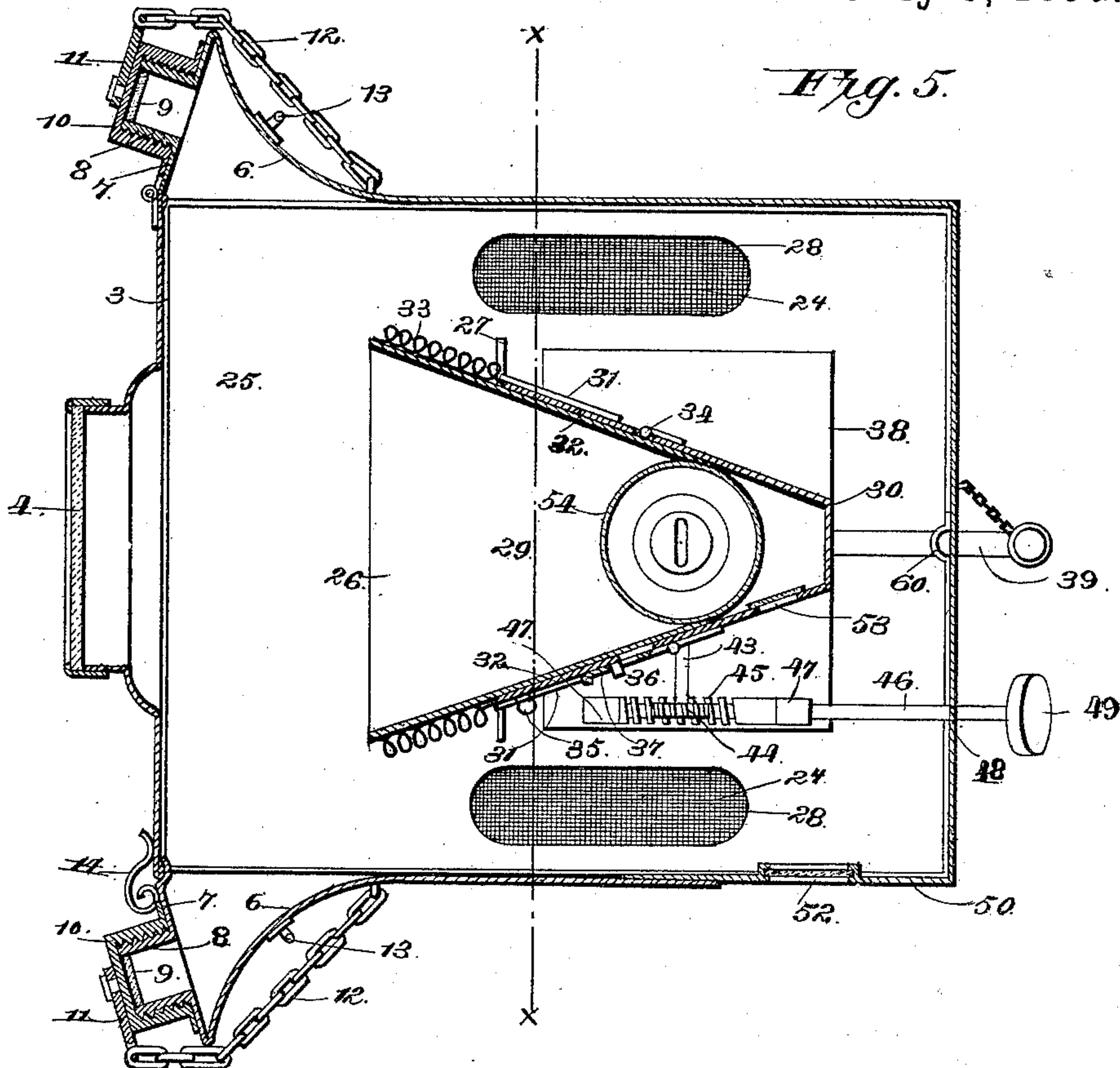
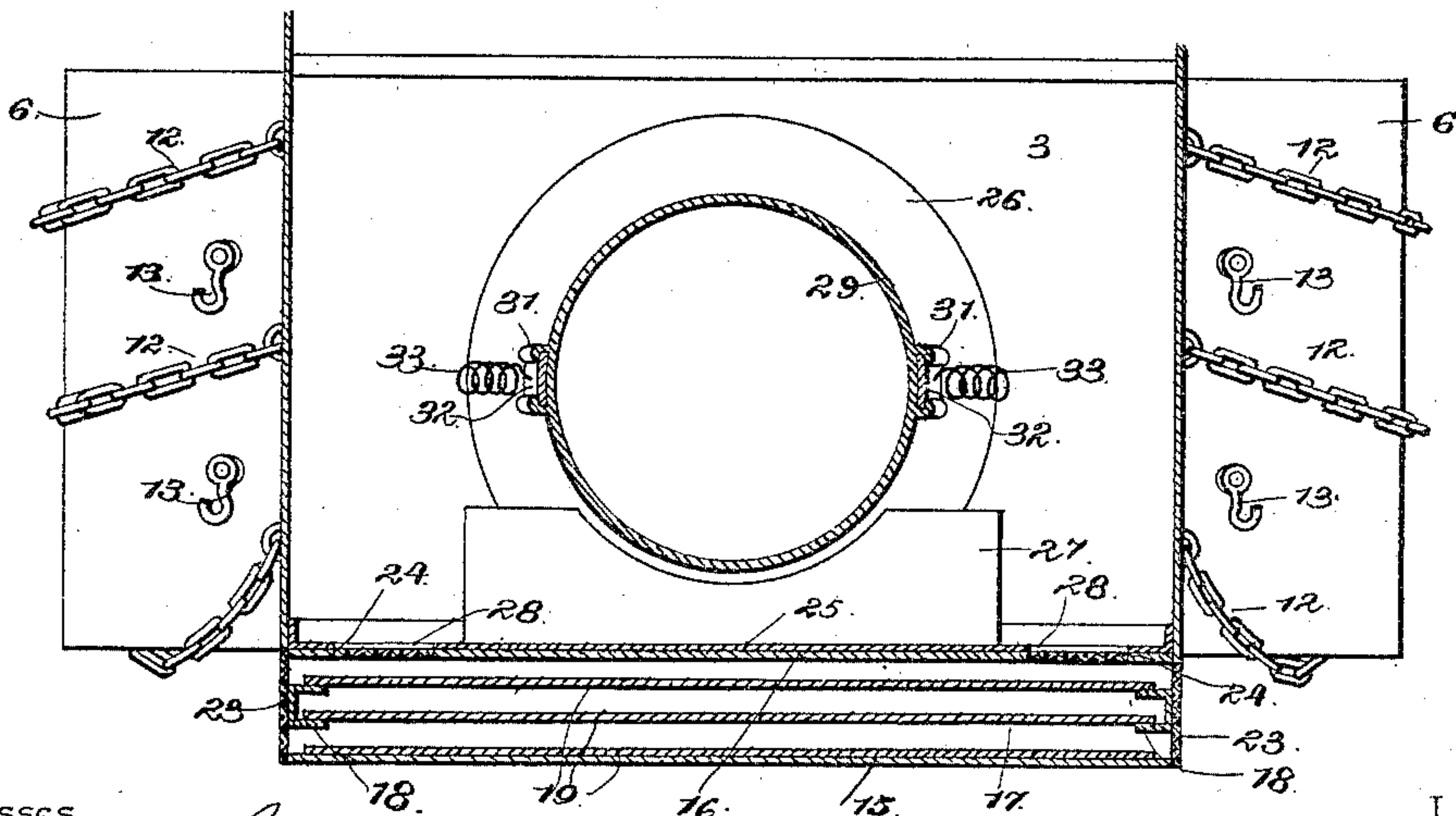


Fig. 5.



Witnesses

McLaurer
Wm. Baggett

By his Attorneys,

C. A. Snow & Co.

Inventor

William J. Burke

UNITED STATES PATENT OFFICE.

WILLIAM JOSEPH BURKE, OF SEATTLE, WASHINGTON.

HEAD-LIGHT FOR LOCOMOTIVES.

SPECIFICATION forming part of Letters Patent No. 431,872, dated July 8, 1890.

Application filed August 15, 1889. Serial No. 320,838. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM JOSEPH BURKE, a citizen of the United States, residing at Seattle, in the county of King and Territory of Washington, have invented a new and useful Head-Light for Locomotives, of which the following is a specification.

This invention relates to head-lights for locomotives; and it has for its object to provide a device of this class which may be lighted either by means of any ordinary oil-lamp or by an incandescent electric light, which in the case of an oil-lamp being used shall admit of the filling of the lamp and the regulation of the light without necessity for opening the lantern-casing, which shall be so constructed as to enable the various light-signals to be given without the use of separate lanterns or lamps of ordinary construction, and which shall be equipped with a receptacle in which a series of day-signals may be conveniently kept in position for use.

With these ends in view the invention consists in the improved construction and arrangement of details, which will be hereinafter fully described, and particularly pointed out in the claims.

In the drawings hereto annexed, Figure 1 is a perspective view of my improved head-light, showing the same in position for use and with one of the day-signals extended. Fig. 2 is a perspective view showing the head-light with the front door of the casing open and with parts removed, so as to expose the interior construction, the casing being occupied by an oil-lamp having my improvements. Fig. 3 is a longitudinal vertical sectional view showing the lantern-casing equipped with the oil-lamp. Fig. 4 is a longitudinal vertical sectional view showing the casing with an electric lamp in position for use. Fig. 5 is a horizontal sectional view of the device shown in Fig. 3. Fig. 6 is a detail perspective view of the slide carrying the reflector and the oil-lamp. Fig. 7 is a transverse vertical sectional view of the device as shown in Fig. 3. Fig. 8 is a detail view of the chimney used in connection with the oil-lamp and the reflector.

The same numerals refer to the same parts in all the figures.

2 designates the casing of my improved head-light, which is provided at its front end with a hinged door 3, which is equipped with a glass or lens 4 of ordinary construction, which may be attached to the door in any well-known suitable manner. The front end of the casing is provided above the door with a glass 5, upon which the number of the locomotive may be painted or suitably inscribed. The front ends of the sides of the casing are bulged outwardly, as shown at 6 6, and the front walls 7 of said bulging portions are each provided with a series of screw-threaded flanges or collars 8, at the outer ends of which glasses 9 of various colors are suitably mounted for the purpose of giving such signals as may be required. Caps or covers 10 10, which fit upon the screw-threaded flanges or collars 8, are provided, said caps being attached by means of swiveled joints 11 to chains 12, which are in turn connected to the outer walls of the casing. When the signals are not in use, the several glasses will be covered by the caps 10, and when the signals are required the said caps may be readily detached from their respective screw-threaded collars and temporarily hung or suspended upon hooks 13, attached to the outer walls of the casing. The front door of the casing when closed may be retained by means of a suitable catch 14.

The casing of the device is provided with a supplemental bottom 15, located under the bottom 16 of the lantern-casing proper, and between the said bottoms 15 and 16 is formed a space or chamber 17, the side walls of which are provided with longitudinal cleats 18, adapted to support a series of day-signals 19, each consisting of a flat plate of sheet metal or other suitable material, upon the face of which the desired signals are painted in various colors. The several signal-plates are each provided at their rear ends with laterally-extending lugs or studs 20, which, when the said plates are drawn forwardly upon their respective cleats, will engage the catches 21, attached to the front end of the casing, and in which the said signal-plates may remain suspended by means of the said lugs, substantially as shown in Fig. 1 of the drawings. When the signal-plates are not in use, they may be slid back into the compartment 17,

the front end of which may be closed by means of a slide 22 at the front end of the same.

The side walls of the chamber or compartment 17 are provided with openings, which may be covered with plates 23 of perforated sheet metal, wire-gauze, or the like, and the bottom 16 of the lantern-casing proper is likewise provided with openings 24, covered with similar perforated metal plates or wire-gauze. Through these openings sufficient air will be admitted into the lantern-casing to support combustion when an oil-lamp is used.

25 designates a slide adapted to fit upon the bottom of the lantern-casing proper and adapted to support the reflector 26, which is mounted upon the said slide by means of a suitable bracket 27. The slide 25 is provided with openings 28, registering with the openings 24 in the bottom of the lantern-casing. The reflector 26 is constructed of two separate parts or sections 29 and 30, which together constitute the reflector of the customary parabolical shape, the same being divided vertically and transversely at the point where the lamp-chimney passes through the reflector. The front section 29 is provided on its side with longitudinal flanges 31 31, in which are fitted the longitudinally-movable slides 32 32, the front ends of which are connected by springs 33 with the front end of the reflector, said springs serving to draw the said slides automatically in a forward direction. The rear section 30 of the reflector is connected by means of a hinge 34 to the rear end of one of the slides 32. The other of said slides is provided with a handle 35, by means of which it may be conveniently manipulated, and near its rear end it is further provided with a lug or stud 36, adapted to be engaged by a catch 37, hinged or otherwise suitably secured to the corresponding rear section 30 of the reflector. It will be seen that by this construction the said rear section of the reflector is hinged to the front section and may be swung aside and out of the way when not in use. It may, furthermore, be drawn rearwardly against the tension of the springs 33, so as to admit the lamp-chimney, which is inserted between the said front and rear sections in the manner which will be hereinafter more fully described.

The lamp, which is preferably used in connection with my invention, comprises a reservoir 38, which is preferably provided with a forwardly and downwardly sloping upper side, as shown in the drawings hereto annexed, in order to be conveniently adjusted under the rear end of the reflector. Said reservoir is provided with a filling-tube 39, which extends rearwardly through an opening 40 in the rear wall of the lantern-casing, the rear end of said filling-tube being curved upwardly and provided with a cap or stopper of suitable construction. The reservoir 38 is provided with an upwardly-extending neck 41, to which a burner 42 of suitable construction is

attached or connected in any convenient manner. The wick-raiser 43 of said burner is extended outwardly and provided with a worm-wheel 44, engaging a worm 45, which is formed upon a shaft 46, mounted in suitable bearings 47 upon the upper side of the lamp-reservoir and extending through an opening 48 in the rear wall of the lantern-casing, the rear end of said shaft being provided with a hand-wheel 49, by means of which it may be conveniently manipulated. It will be seen that, owing to the construction herein described, the lamp may be conveniently supplied with oil without opening the lantern-casing and at any time, whether it be burning or not; also, that the light may be conveniently and accurately regulated by means of the shaft which extends from the rear wall of the casing. Another important advantage gained by this construction is this, that the worm 45 upon the shaft 46 effectually prevents the wick-raising stem from revolving except when actuated by the said worm, thus preventing the wick from being jarred down into the wick-tube by the jolting of the locomotive when passing over rough places.

One of the sides of the lantern-casing is provided at its rear end with a sliding door 50, having a handle 51, by means of which it may be manipulated, and provided with an opening 52, covered by a glass, through which the interior may be inspected. One of the sides of the rear section 30 of the reflector is likewise provided with an opening 53, which is in alignment with the opening 52. These two openings, both of which are provided with glasses, enable the flame of the lamp to be observed while it is being adjusted, thus enabling the neatest and most accurate adjustment to be made. The slide 50 may, it will be seen, be adjusted so as to correspond with the position of the longitudinally-adjustable and hinged rear section of the reflector.

The burner of the lamp is provided with means for the attachment of the lamp-chimney 54, which is of the construction shown in detail in Fig. 8 of the drawings. It will be seen that the said chimney is thickened at its central portion, where it comes in contact with the edges of the sections 29 and 30 of the reflector, the said thickened portion being provided with annular grooves 55, forming seats for the edges of the reflector-sections. It will be seen that when the said chimney is to be adjusted in position the rear section 30 may be opened upon its hinge. When the chimney has been placed in position, the said rear section is again closed, and the spring-slides, to which it is attached, will enable it to accommodate itself to the diameter of the chimney, which latter will thus be clasped and held securely by means of the spring-actuated rear section 30 of the reflector 26. By this improved construction all danger of the lamp-chimney being jolted loose and broken while the locomotive is in motion will be avoided.

It is obvious that a lamp-chimney of ordinary construction might be used in connection with my improved reflector; but I prefer to use a chimney of the construction herein described, inasmuch as the objections incident to devices of the ordinary construction are thereby more effectually overcome.

The top of the lantern-casing is provided with an opening 56, through which the top of the chimney may extend. Said opening may, when desired, be covered by means of the cap or cowl; but I have deemed it unnecessary to show this in the drawings.

When the locomotive carrying my improved head-light is equipped with an electric plant for the purpose of lighting the train by electricity, it may be found desirable to use an electric lamp in connection with my improved head-light, and the modified construction illustrated in Fig. 4 of the annexed drawings may then be called for. By the said modification the oil lamp and its attachments are dispensed with.

57 designates an incandescent electric light, the shank of the bulb of which is provided with a yoke or bail 58, to which is attached a wire 59, passing through a staple 60 upon the inner side of the rear wall of the lantern-casing. The bulb 57 is fitted in a reflecting-funnel 61, adapted to fit within the front section 29 of the reflector proper, into which it may be drawn by pulling upon the wire 59, which may then be secured in any suitable manner, thus retaining the bulb 57 and reflector 61 securely in position. The rear section 30 of the reflector proper is meanwhile swung to one side, so as to be out of the way of the electric-lighting device. It will be seen that owing to the improved construction of the reflector of my improved head-light the latter may easily and in a few moments' time be converted for use in connection with an electric-light apparatus.

From the foregoing description, taken in connection with the drawings hereto annexed, the operation and advantages of my invention will be readily understood. The construction of my improved head-light is comparatively simple and inexpensive and by its use all separate signals, which are both expensive and cumbersome, may be entirely dispensed with. It also, as will be seen, forms a convenient casing, in which the day-signals may be kept, and where they will always be found conveniently accessible and in a position where they may be conspicuously displayed.

While I have in the foregoing described the preferred construction of my improved head-light, I would have it understood that I do not

limit myself to the exact details of construction herein described, but reserve the privilege to any modifications and alterations that may be resorted to without departing from the spirit of my invention.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a locomotive head-light, a lantern-casing provided with a sub-compartment constructed under the bottom of the same and having longitudinal cleats, in combination with the signal-plates resting upon said cleats and having laterally-extending lugs or studs at their rear ends, the catches at the front end of said compartment and the sliding door or cover, substantially as and for the purpose set forth.

2. In a locomotive head-light, the lantern-casing having a sub-compartment constructed under its bottom, the bottom and the side walls of said sub-compartment being provided with openings covered with perforated sheet metal, in combination with a slide adapted to rest upon the bottom of the lantern-casing and carrying the reflector, said slide being provided with openings registering with the openings in the bottom of the lantern-casing, substantially as set forth.

3. A reflector for locomotive head-lights, comprising a front section, slides arranged to move longitudinally upon the outer sides of said front section, and a rear section hinged to one of said slides and adapted to be connected with the other slide by means of a suitable hinged latch, substantially as set forth.

4. In a reflector for head-lights, the combination of a front section, longitudinally-movable slides attached to the same, a rear section hinged to one of said slides, a latch adapted to connect said hinged rear section with the opposite slide, and springs adapted to force the said slides in a forward direction, substantially as and for the purpose set forth.

5. In a locomotive head-light, the combination of the reflector having the hinged rear section, and the spring-actuated slides forcing the same in a forward direction, with the lamp having a chimney provided with a thickened or re-enforced and annularly-grooved middle portion, substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

WILLIAM JOSEPH BURKE.

Witnesses:

S. T. JONES,

H. R. CHALLENGER.