M. M. JOHNSON.

HEATER FOR INCUBATORS.

APPLICATION FILED FEB. 8, 1909.

970,057.

Patented Sept. 13, 1910.

3 SHEETS—SHEET 1.

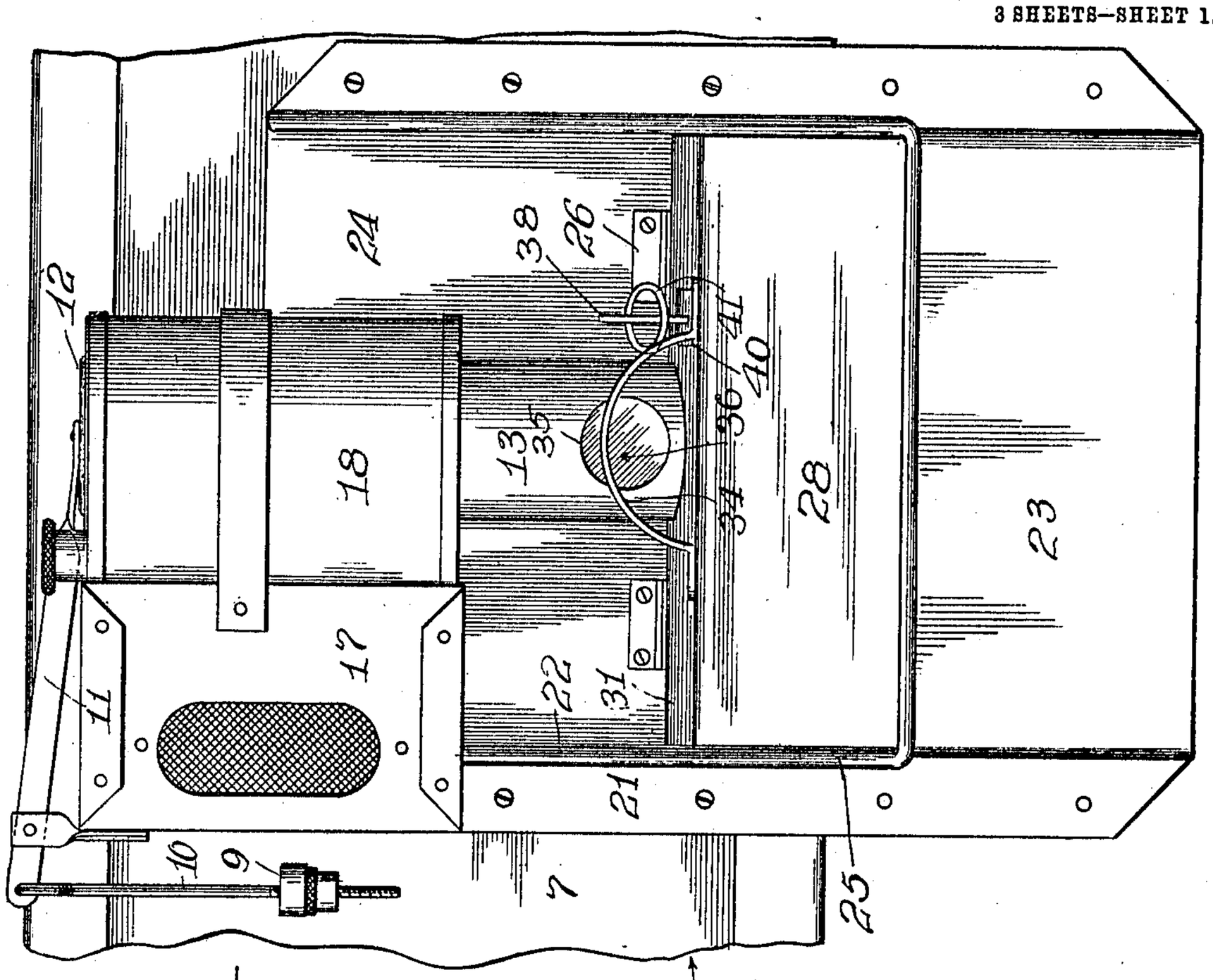

Fig. 1

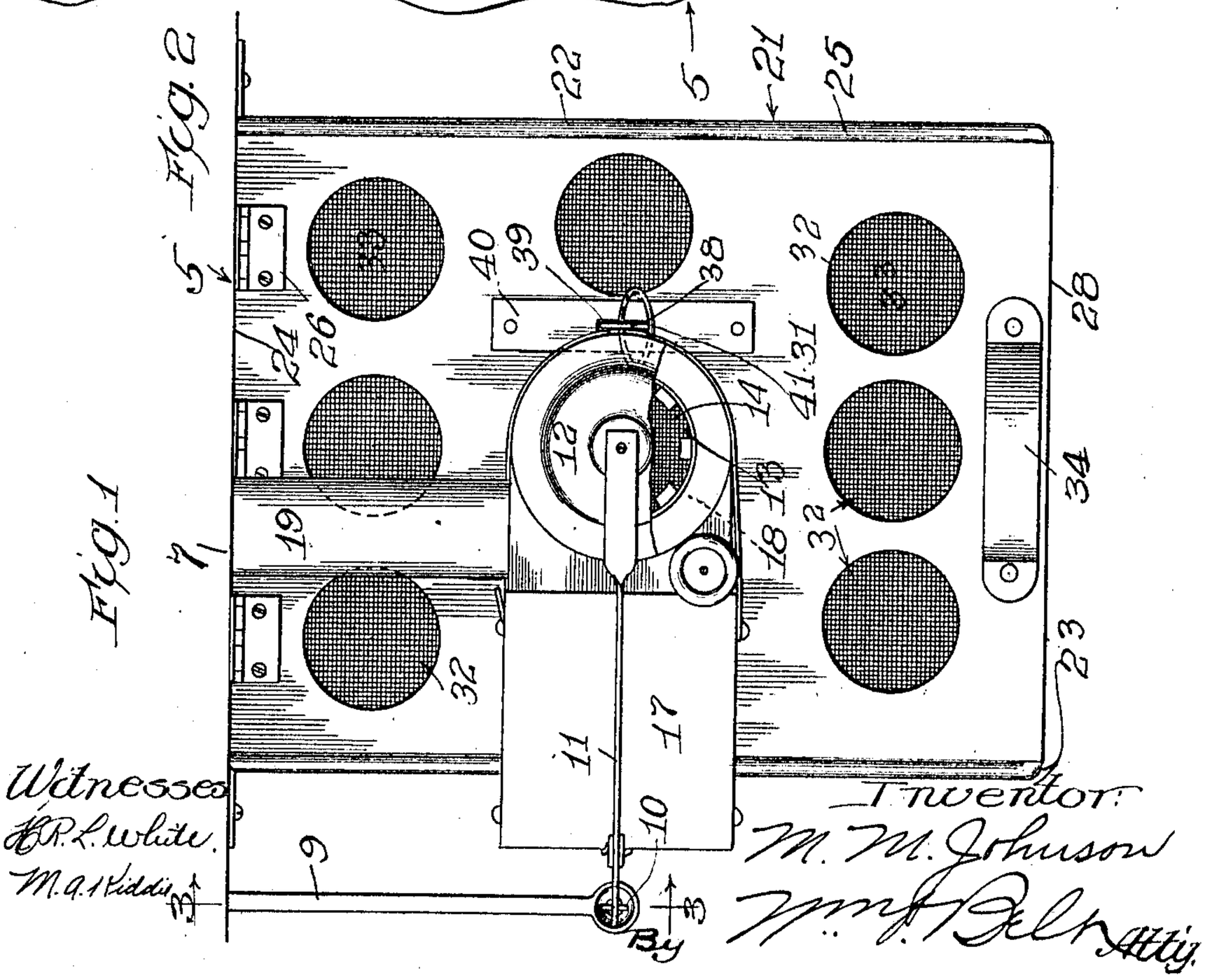

Fig. 2

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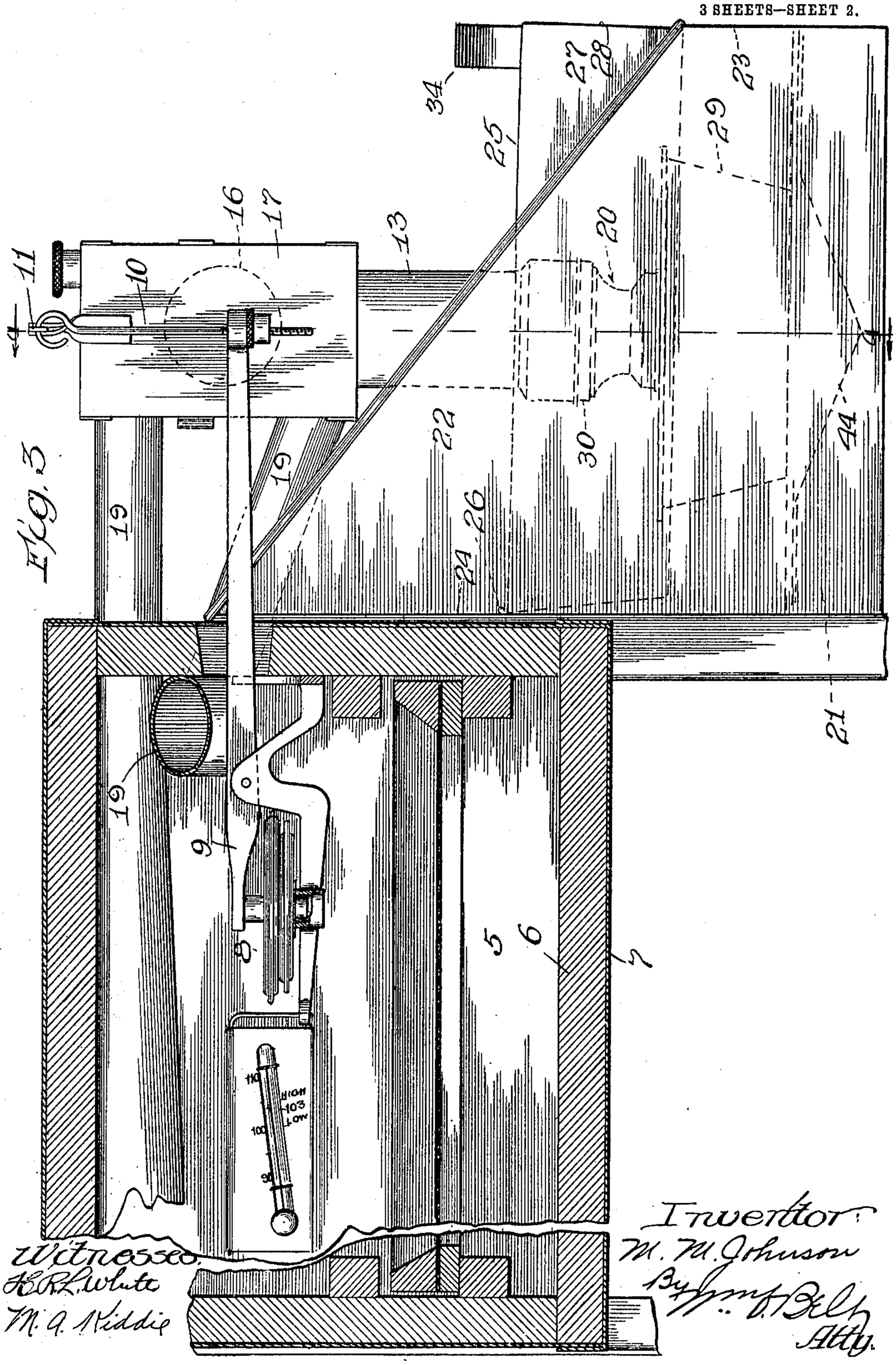

Fig. 3.

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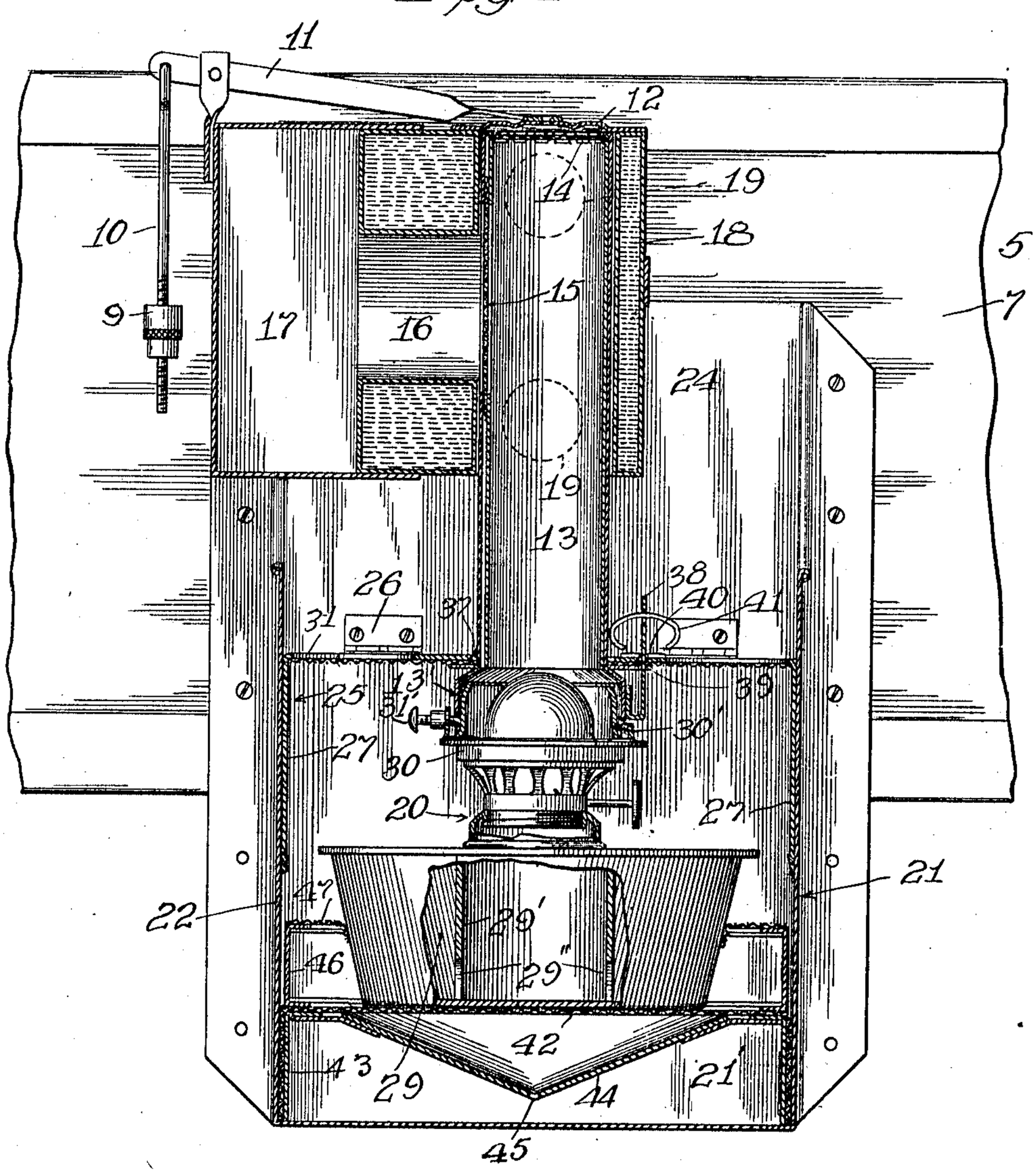
3 SHEETS—SHEET 3.

Fig 4



Witnesses:
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M. A. Riddle

Inventor:
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UNITED STATES PATENT OFFICE.

MANANDER M. JOHNSON, OF CLAY CENTER, NEBRASKA.

HEATER FOR INCUBATORS.

970,057. Specification of Letters Patent. Patented Sept. 13, 1910.

Application filed February 8, 1909. Serial No. 476,597.

To all whom it may concern:

Be it known that I, MANANDER M. JOHNSON, a citizen of the United States, residing at Clay Center, in the county of Clay and State of Nebraska, have invented new and useful Improvements in Heaters for Incubators, of which the following is a specification.

This invention relates to improvements in incubators and its object is, primarily, to so arrange the lamp which supplies heat to the incubator that it can not set fire to the incubator or to the building in which it is located, or to the contents of the building, and to construct the incubator in all respects to comply with the requirements of the fire insurance companies and underwriters associations.

The invention has for its object, more specifically, to prevent the lamp from being refilled with oil while it is lighted and to require the removal of the lamp from the incubator for refilling; also to provide a fire proof receptacle to collect all oil which drips or escapes in any way from the lamp, and to provide means which will prevent any fire which may occur in said receptacle from escaping therefrom.

The invention has other objects in view which will be fully pointed out hereafter in the detail description.

In the accompanying drawings illustrating one embodiment of the invention Figure 1 is a top plan view and Fig. 2 is an elevation showing my invention. Fig. 3 is a sectional view through the incubator on the line 3—3 of Fig. 1 and showing the invention in side elevation. Fig. 4 is a sectional view on the line 4—4 of Fig. 3.

The invention can be embodied in any incubator in which a lamp is employed to furnish the heat and in the drawings I have only shown as much of an incubator as is necessary to indicate how my invention is to be used therewith.

Referring to the drawings, 5 designates in a general way the casing of the incubator which preferably comprises a wooden frame 6 covered with sheet metal 7. A thermostat 8 is arranged within the casing to operate a lever 9 which is connected by a link 10 with a lever 11 carrying a lid 12 to seat on the top of the lamp chimney 13. A metal screen 14 is secured in the upper end of the chimney and another screen 15 is arranged in one side of the chimney opposite the space 16 which forms a part of the heat chamber 17. A hot water circulating system comprising a chamber 18 around the upper portion of the chimney and suitable pipes 19 connected therewith provides the heat in the incubator. The lamp, designated generally, 20, is arranged in a fire-proof metal receptacle 21 which is mounted in a suitable manner on the casing of the incubator. The sides 22 of the receptacle are inclined from the low front 23 to the top of the high back 24 and a cover 25 is hinged at 26 to the back 24 and between the sides 22. This cover has depending sides 27 and front 28 to work within the sides 22 and front 23 so that when the cover is in closed position the reservoir 29 and burner 30 will be entirely inclosed within a fire-proof receptacle. The reservoir has a central sleeve 29′ vertically arranged therein below the burner and provided with openings 29″ at its bottom. In the top 31 of the cover there are a number of openings 32 covered with screens 33 and a handle 34 is conveniently located on the cover at the front thereof. An opening 35 in the chimney is covered with mica 36 or other suitable material to disclose the flame of the lamp. A band ring 30′ is mounted on the burner and a collar 13′ on the lower end of the chimney fits over said ring. A screw 31′ carried by the burner, is adapted to engage with the chimney and lock it in position on the burner. The chimney extends through an opening 37 in the top of the cover and an arm 38 fastened to the lower part of the chimney extends up through a slot 39 in the cover and a face plate 40 thereon. A ring 41, or other suitable device, is attached to the arm 38 above the cover 25 to lock the cover and chimney together. The ring is located at a sufficient distance above the cover to permit the latter to swing within a considerable arc without affecting the chimney. When the top of the cover engages the ring and the cover is swung open further the chimney will be lifted clear of the burner so that the reservoir and burner may be removed from the receptacle. The burner is screwed into the reservoir in a familiar manner and must be removed therefrom to refill the reservoir. As the chimney has only a comparatively short movement with the cover, just sufficient to permit the removal of the reservoir and burner from the receptacle, and as the reservoir and burner are wholly inclosed

within the receptacle, it would be impossible to remove the burner from the reservoir while they remain in the receptacle. Thus it is necessary to remove the reservoir and burner from the receptacle and to unscrew the burner from the reservoir before the latter can be filled, and this prevents the lamp from being refilled while it is lighted.

The reservoir of the lamp is supported on a screen 42 which rests upon a frame 43 removably fitted in the bottom of the receptacle. The frame 43 supports a conical deflector 44 located below the reservoir and projecting beyond the periphery of the bottom of the reservoir. This deflector has a hole 45 at its apex to permit oil which may drip thereon from the reservoir to drain to the collecting chamber 21′ at the bottom of the receptacle. A skeleton frame 46 rests upon the screen 42 and supports a screen 47 which surrounds the reservoir. The screens 42 and 47 are spaced some distance one above the other for a purpose hereafter described, and the upper screen 47 fits snugly around the reservoir. The frames and screens are preferably unconnected and are constructed to be easily removed from the receptacle.

My invention is designed primarily to enable the use of an oil lamp in connection with an incubator with perfect safety against fires. To accomplish this it is essential to avoid liability of a fire being started from the lamp or from drip oil accidentally ignited within or without the incubator. The invention effectively guards against such fires by reason of its fireproof construction and the manner of isolating and protecting oil which may drip or escape from the reservoir. The casing is covered with sheet metal and the lamp receptacle is made entirely of this material. If the reservoir leaks or the oil overflows or drips, it will drain down through the screens and the deflector into the collecting chamber in the bottom of the receptacle which is oil-tight and capable of holding a much greater quantity of oil than the reservoir. Even if the oil should squirt out through a hole in the reservoir it cannot escape from the receptacle. The oil in the bottom of the receptacle is wholly protected against fire because no flame can be communicated thereto downward through the screens 47, 42. Even if oil on the surface of these screens, or either of them, did catch fire the flame would not pass down therethrough, and if the oil in the bottom of the receptacle should by any chance catch fire the flame would not pass upward through the screens. The screens effectually guard against a flame passing therethrough. But if oil in the bottom of the receptacle and on the upper surface of the screens and on the reservoir and burner should catch fire it would be entirely confined within the receptacle, for the flame could not pass through the screens 33. If the oil in the bottom of the receptacle caught fire the deflector 44 would deflect the flame away from the reservoir and thus prevent the fire from heating the oil in the reservoir and generating gas therein. The screen 14 at the top of the chimney prevents a flame from passing therethrough in event the lamp wick is turned too high. As the receptacle is oil tight oil cannot drip therefrom onto the floor where it might prove a source of danger.

My invention is simple in character, inexpensive to make and can be embodied with any incubator of this general class. It effectually isolates the lamp and the oil so that fire cannot be communicated therefrom to the casing of the incubator or to the building in which it is located and thereby the objections of the fire insurance companies and underwriters associations are entirely overcome.

What I claim and desire to secure by Letters Patent is:

1. In an incubator, the combination of a lamp comprising a reservoir, a burner and a chimney mounted on the burner, a fireproof receptacle inclosing the reservoir and burner, said receptacle comprising a cover adapted to be opened to permit the removal of the reservoir and burner bodily from the receptacle, and means for causing the cover to lift the chimney clear of the burner as the cover is opened.

2. In an incubator, the combination of a fire-proof receptacle comprising a movable cover having an opening therein, a lamp comprising a reservoir and a burner arranged within said receptacle, and a movable chimney mounted on said burner and projecting upward through the opening in said cover, and means connecting said chimney to the cover, said cover being movable independently of and conjointly with said chimney.

3. In an incubator, the combination of a fire-proof receptacle, said receptacle having a hinged cover provided with an opening in the top thereof, a lamp comprising a reservoir and a burner inclosed within the receptacle, and a vertically movable chimney mounted on the burner and projecting upward through the opening in the cover, and means loosely connecting the chimney to the cover so that said cover may swing partly open without affecting the chimney and then as it is farther opened lift the chimney clear of the burner.

4. In an incubator, the combination of a fire-proof receptacle having a hinged cover having an opening in the top thereof, a lamp comprising a reservoir and a burner inclosed within said receptacle, and a vertically movable chimney mounted on the

burner and projecting upward through the opening in the cover, an arm on the lower part of the chimney within the receptacle and projecting upward through and above said cover, and means on said arm at a distance above the cover to be engaged by said cover as it is swung open to lift the chimney clear of the burner.

5. In an incubator, the combination of a fire-proof receptacle having a hinged cover having an opening in the top thereof, a lamp comprising a reservoir, a burner and a chimney, said reservoir and burner being wholly inclosed within the receptacle and bodily removable therefrom and separable from each other to permit the reservoir to be filled, and said chimney being mounted on said burner and movable vertically, and means connected with said chimney and adapted to be engaged by said cover as it is swung open to lift the chimney clear of the burner and permit the removal of the reservoir and burner from the receptacle.

6. In an incubator, the combination of a casing, a fireproof receptacle mounted on the casing and having a hinged cover having a plurality of openings in its top, a lamp contained within said receptacle and comprising a reservoir and a burner, said burner being located adjacent to the top of the cover, a chimney resting upon said burner and projecting upward through one of the openings in the cover, and means connecting the cover and chimney.

7. In an incubator, the combination of a fireproof receptacle having a hinged cover to swing vertically and having an opening in its top, a lamp having a reservoir and a burner inclosed within said receptacle, said burner being located adjacent to the top of the cover, a band ring mounted on the burner, a chimney arranged in the opening in the cover, said chimney having a collar at its lower end to engage said ring, and means connecting the chimney and said hinged cover.

8. In an incubator, the combination of a casing, a fireproof receptacle mounted on the casing and having an oil tight collecting chamber at the bottom thereof, a lamp inclosed within said receptacle above the collecting chamber and comprising a reservoir and a burner, a frame in said chamber, a horizontal screen supported on said frame between the bottom and the top of the reservoir, said screen having an opening therein in which said reservoir is seated.

9. In an incubator, the combination of a casing, a fireproof receptacle mounted on the casing and having an oil tight collecting chamber at the bottom thereof, a horizontal screen forming the top for said chamber, a lamp comprising a reservoir and a burner inclosed within said receptacle and resting on said screen, and another screen above said horizontal screen and located between the reservoir and the walls of the receptacle.

10. In an incubator, the combination of a fire-proof receptacle having an oil tight collecting chamber at the bottom thereof, a lamp comprising a reservoir and a burner inclosed within said receptacle, a pair of frames arranged one above the other in said chamber, a screen resting on the lower frame beneath the reservoir, and a screen resting on the upper frame and provided with an opening in which the reservoir is seated.

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Witnesses:
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