(No Model.) 2 Sheets—Sheet 1.

# J. D. GREENE & J. C. TREMAN.

## FUEL MAGAZINE.

No. 400,909. Patented Apr. 9, 1889.

Fig. 1

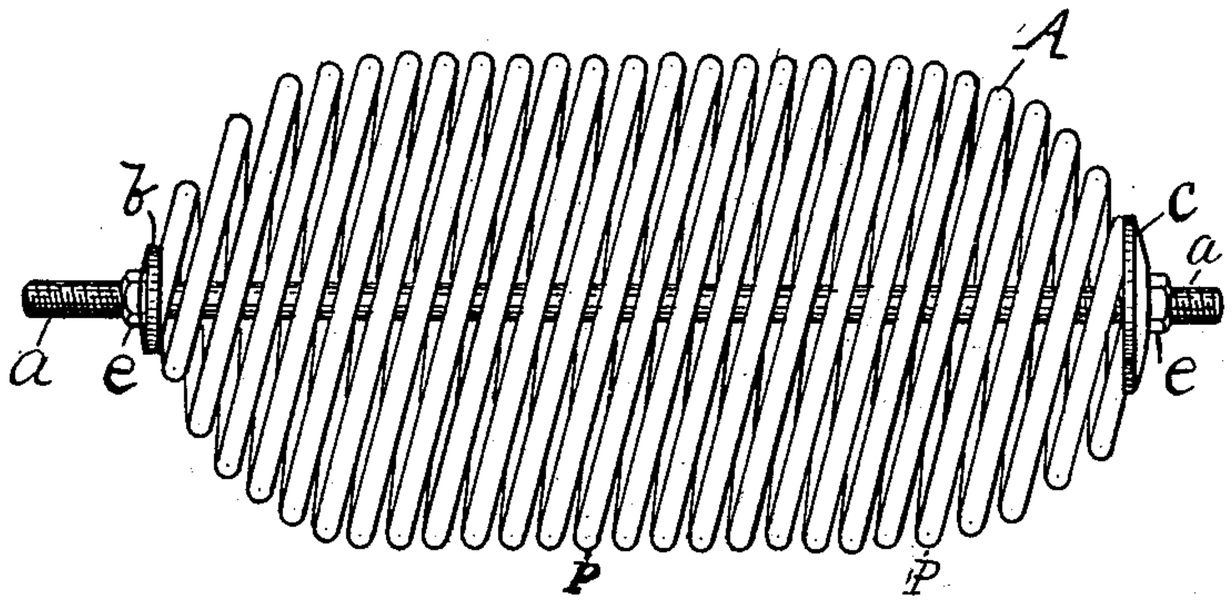



Fig. 2

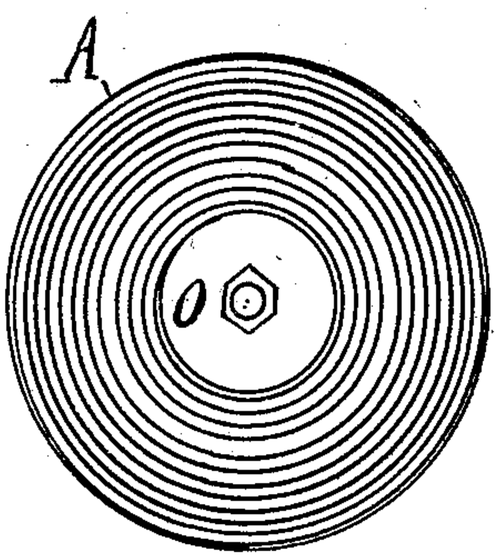



Fig. 3

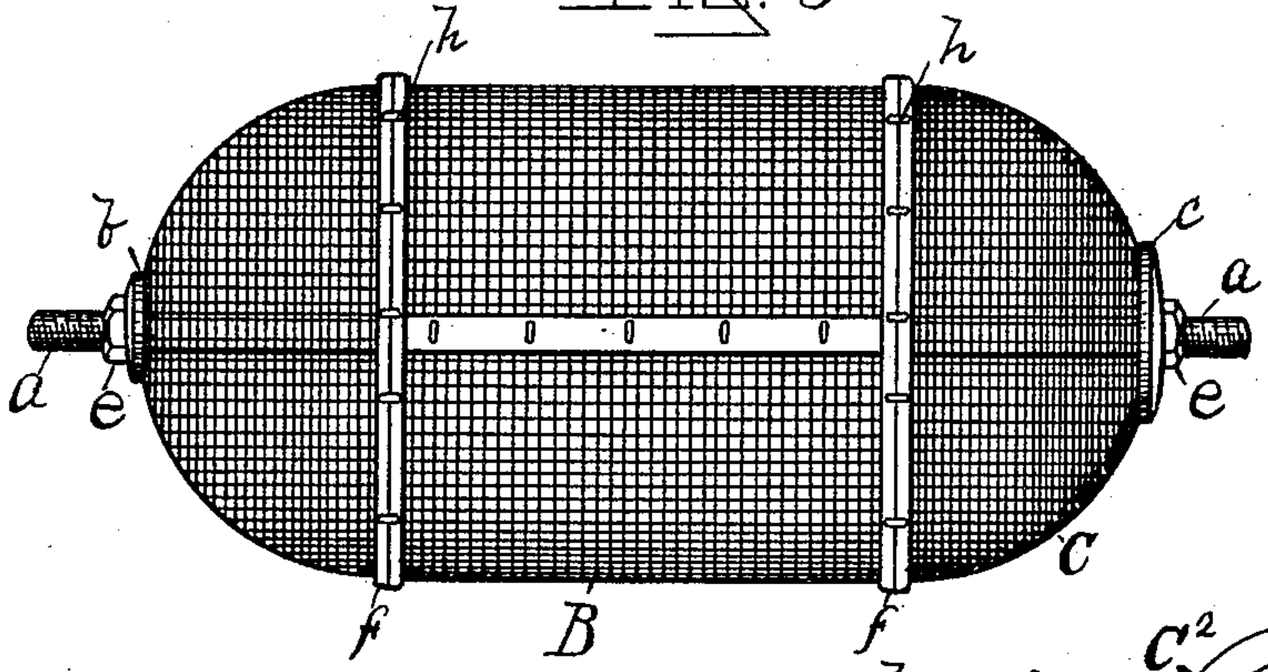
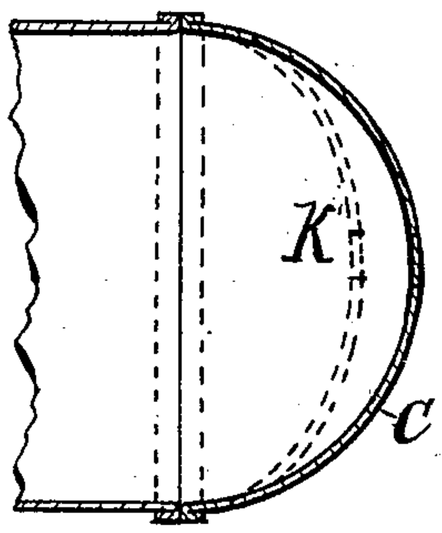
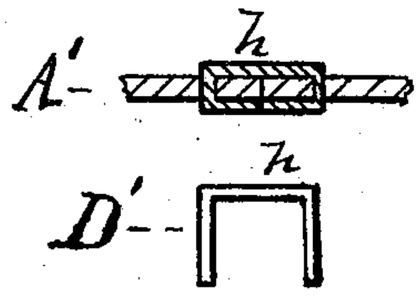



Fig. 5



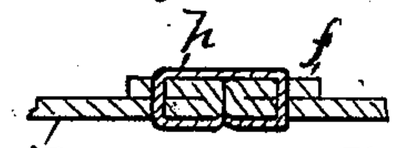
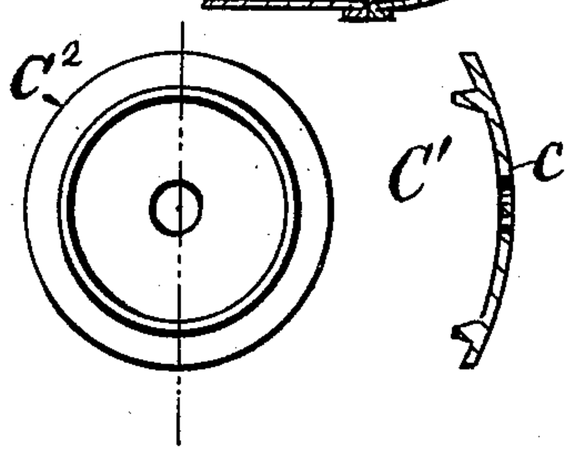




Fig. 7




WITNESSES

Geo. A. Darby.

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(No Model.) 2 Sheets—Sheet 2.

# J. D. GREENE & J. C. TREMAN.

## FUEL MAGAZINE.

No. 400,909. Patented Apr. 9, 1889.

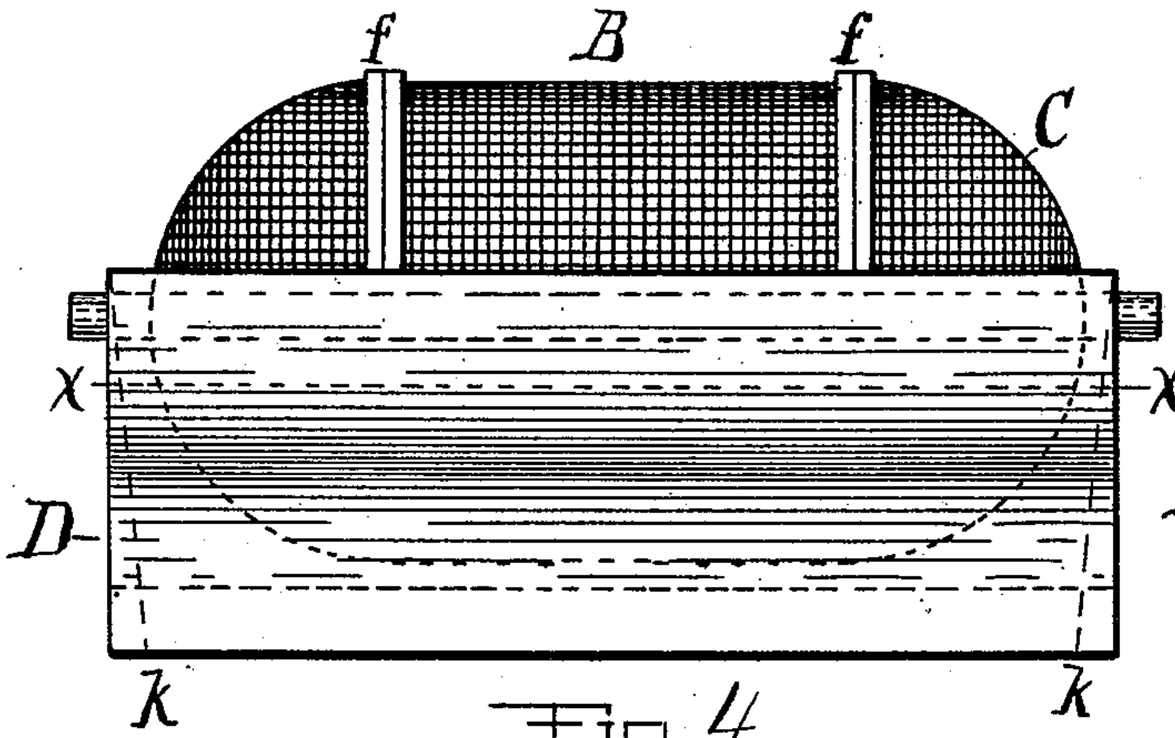


Fig. 4

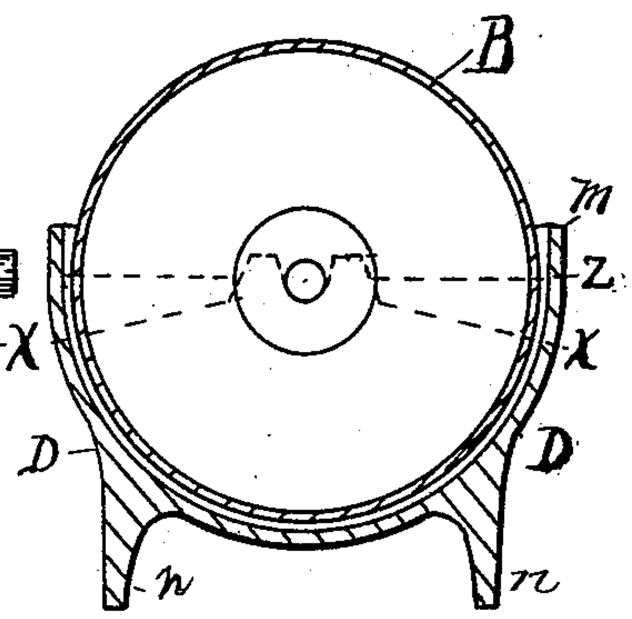


Fig. 6

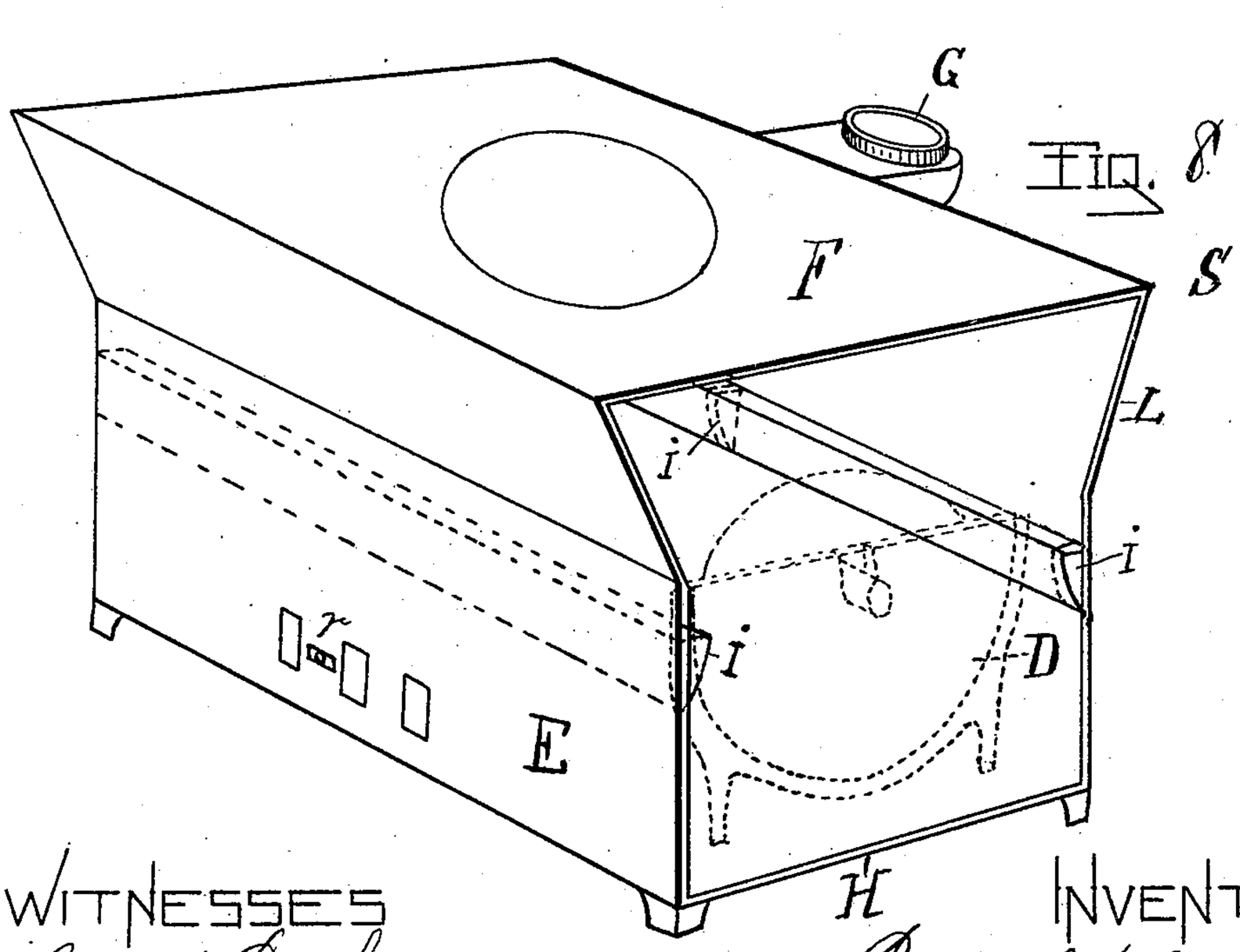


Fig. 8

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# UNITED STATES PATENT OFFICE.

JEREMIAH D. GREENE AND JAMES C. TREMAN, OF TROY, NEW YORK, ASSIGNORS TO JAMES LUCEY, OF SAME PLACE.

## FUEL-MAGAZINE.

SPECIFICATION forming part of Letters Patent No. 400,909, dated April 9, 1889.

Application filed August 15, 1887. Serial No. 246,936. (No model.)

*To all whom it may concern:*

Be it known that we, JEREMIAH D. GREENE and JAMES C. TREMAN, citizens of the United States, each residing at the city of Troy, in the county of Rensselaer and State of New York, have jointly invented a new and useful Improvement in Magazines or Shells for Holding and Burning Hydrocarbons as Fuel, which we call a "Fuel-Economizer," of which the following is a specification.

Our improvement consists in the construction of an open-work magazine or shell which will sustain therein some non-combustible and absorbent material—such as mineral wool, asbestus, or other suitable material—that will, after being packed in such magazine, absorb hydrocarbon oils, which will, when ignited, burn freely through the apertures in such magazine or shell. The ends of said magazine being circular and elastic, the packing therein may be tightened or loosened at pleasure by means of the central rod and screw-nuts at the ends of said rod. There is also provided a trough or shell into which said magazine may rest on its central journals, so that when the oil is ignited the flame will be only at or above the edges of said trough or shield. Said trough will prevent the waste of oil by catching and holding any oil that may drip from such magazine. We attain these objects by the mechanism illustrated in the accompanying drawings, and which forms a part of this specification.

Figure 1 represents an elevation of our improved magazine formed of coiled wire. Fig. 2 is an end view of Fig. 1, showing the large opening O, through which the packing is to be put into said magazine. Fig. 3 represents an elevation of our improved magazine or shell formed of wire net-work, and a mode of fastening together the parts thereof. Fig. 4 represents a side elevation of the trough D and the magazine B or A resting in the trough or shield D, on the ends of its center bolt or end bearings. Fig. 5 is a longitudinal cross-sectional view of one end of the magazine or shell, it being circular, as at C, and a modification thereof, as at K′, the end being elliptical in form; also, in Fig. 5, at C′, is a cross-section of the collar *c;* also, at $C^2$ is a plan of the inside of the collar *c*. Fig. 6 is a vertical cross-section of the trough or shield; also, a vertical cross-section of the magazine A or B, supported in the trough D. Fig. 7 is a longitudinal cross-sectional view of a portion of the shell at the joining of the parts, showing a mode of lapping over the edges of the net-work, as at *f*, and uniting the edges together by the clamps *h*. D′ is a side view of the clamp *h*. A′ shows a mode of joining the edges of the parts of the shell by putting the parts together edge to edge and fastening them together by the clamps *h*. Fig. 8 is a view in perspective of a casing or furnace, S, in which the magazine A or B and the trough or shield D may be put and used for cooking or heating purposes.

Similar letters refer to similar parts throughout the several views.

To enable others skilled in the art to which this invention belongs to make and use the same we will here describe it in detail.

To make a magazine or shell as represented in Fig. 1, have a suitable apparatus for coiling or spinning up the wire P into a suitable form, as shown in Fig. 1, and about five or six inches long and about four inches in diameter, the ends being circular, as shown in Figs. 1, 3, and 5, but preferably elliptical in form, as shown by the dotted lines at K′, Fig. 5. The wires P should be about No. 11 English gage iron wire. There should be a space between the wires P of about one-eighth of an inch. There should be an opening at one end of the coil of about one-fourth of an inch. At the other end the opening should be about one and one-half inch, as shown at O, Fig. 2. There should be a three-sixteenths or one-fourth inch rod passed through the center of the coil or magazine, having a screw and nut at each end of said rod and a small collar, *b*, at one end of said magazine, as shown in Figs. 1 and 3; also, a collar, *c*, at the other end of said magazine, as shown in Figs. 1, 2, and 5, as at C′ and $C^2$. The collar *c* has a flange on the concave side, as at C′, which is to fit into the opening O at one end of the magazine. This magazine is to be packed with some non-com-

bustible and absorbent material, preferably mineral wool or asbestus. This packing is to be driven into said magazine around the rod *a*. In packing said magazine there will be a tendency to elongate it. To prevent said elongation, it is best to have a form to fit the outside of such magazine. Then the collars *b* and *c* and the nuts *e e* are to be put in position, as shown in Figs. 1 and 3. Should it be desired at any time to loosen or compress the packing, it is readily accomplished by means of the nuts *e e* on the rod *a*. By loosening or tightening such nuts the ends of the magazine, being circular and elastic, will yield to compression.

To make a magazine as shown in Fig. 3, the central part, B, is of iron-wire fabric of about No. 16 wire, and having about one-eighth of an inch mesh, the ends C to be of the same fabric, struck up in dies the form desired. The parts are joined together, as shown in Fig. 7, the edges being turned over, as at *f*. Then put the two edges *f* together, and put the clamps *h* through the two parts *f* and *f* and clinch the clamps down, as shown in Fig. 7; or the two cut edges may be put together and fastened by the clamps *h*, as shown in Fig. 7 at A′, the apertures in the ends of the magazine, the central rod, the screws and nuts *e e*, the collars *c* and *b*, and the packing to be each the same as described and shown for the magazine A in Fig. 1; also, the shape and size of magazine the same—viz., about four inches in diameter and about five or six inches long, the ends preferably formed as shown by the dotted lines at K′, Fig. 5.

These magazines may be of any desired size, in accordance with the use required.

A further improvement is the construction and arrangement of a shield or trough of iron, D, in which to suspend the magazine by the projecting ends of the rod *a*, as shown in Figs. 4 and 6. B and D, the ends of such shield or trough, should be beveled, similar to that shown at K, Fig. 4. There are circular bearings in the ends of the trough D for the ends of the rod *a* to rest in, as shown in Fig. 6. The sides of the trough D may be of any height desired, as indicated at M and dotted lines at *z* and *x x x* in Figs. 4 and 6. The greater the surface of the magazine above the edges of the trough D the more rapid will be the combustion, as the flame will be at and above the upper edges of said shield or trough D.

There must be two flanges or projecting legs on and below the bottom of said trough D, as shown at *n n*, Fig. 6, so that said trough D will stand upright on a grate, ashes, or plate. A further object of this trough D is to prevent the waste of hydrocarbons by dripping from the magazine. Said trough will catch the drippings and hold the same in contact with the magazine. Said magazine should not be packed too tightly, thereby to prevent the absorption of a sufficient quantity of hydrocarbon.

When these magazines are required for use for cooking or heating purposes, they should be put in a a suitable receptacle and covered with hydrocarbons—preferably coal-oil—and there remain until thoroughly saturated through. Then one should be put into a shield or trough, D, and both placed together, as in Fig. 4, in a stove, furnace, or casing, as desired. The fire should then be kindled, the covers put on, and the draft regulated as desired.

These magazines may be used without the shield or trough D, if desired. There may be used one or more magazines in a stove, furnace, &c., at one time, if desired.

In Fig. 8 is represented a case, S, made of cast-iron, sheet iron, or tin. Said case S is designed exclusively for using therein our improved magazines and trough D, and is constructed as follows: H is the bottom; L, the ends; E, the front, the back being similar to the front; F, the top, having therein one or more boiler-seats. G is a pipe-collar. V is a slide-damper in the front part. The dotted lines at D show the shield or trough and the magazine within said case S; and I are projecting elongated ribs on the front and back plates, which are to keep the shield or trough D central in the case and to prevent the said trough from shutting off the draft on either side.

We are aware that fire-kindlers of various constructions have heretofore been made. Some have had open-work filled or packed with asbestus to be saturated with oil, having handles or rods to handle them by, and various other contrivances; but all the contrivances heretofore made for burning hydrocarbons did not contain the improvements described and shown in this our application. Therefore,

What we claim, and desire to have secured to us by Letters Patent, is—

1. In a hydrocarbon-burner, a magazine having oval ends, and a central bolt having its ends screw-threaded, concave caps provided with flanges and fitting said oval ends, and nuts fitting the ends of said central bolt, whereby the magazine may be compressed or elongated, as and for the purposes set forth.

2. In a hydrocarbon-burner, a magazine formed of coiled wire and having oval ends, a central bolt having screw-threaded ends passing through said magazine, concave caps provided with flanges and fitting said oval ends, and nuts fitting the ends of said screw-threaded bolt, substantially as and for the purposes set forth.

3. In a hydrocarbon-burner, the combination of a magazine having a central bolt with projecting ends, with a trough adapted to receive and hold centrally said magazine, said trough provided with longitudinal support-

ing-ribs, whereby such trough and magazine may be placed on a grate or plate and remain upright, substantially as and for the purposes set forth.

4. In a hydrocarbon-burner, the combination of the magazine, the containing-trough, and the case having ribs at intervals on front and back longitudinally arranged inside of said case, whereby the said trough is kept in a central and horizontal position, substantially as set forth.

JEREMIAH D. GREENE.
JAMES C. TREMAN.

Witnesses:
JOHN J. KENNEDY,
JAMES G. PATTON.