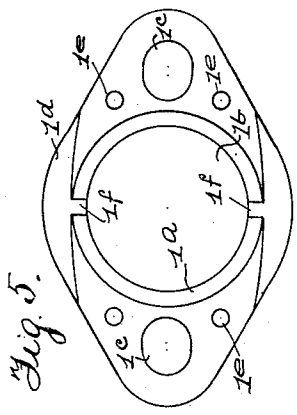
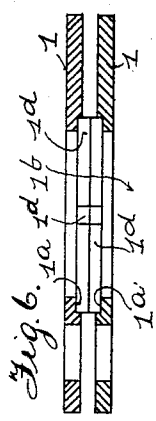
Apr. 17, 1923. 1,452,105

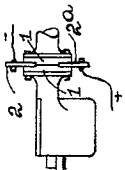
I. E. ASKE

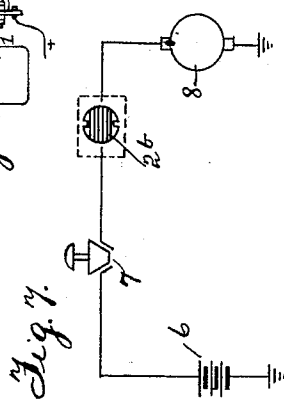
HEATER OR VAPORIZER

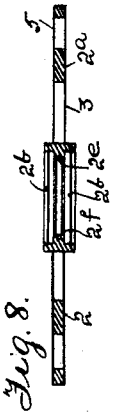
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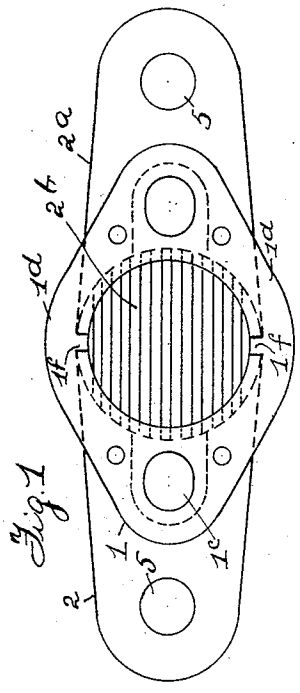

Fig. 5.

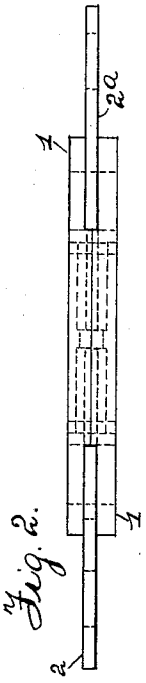

Fig. 6.

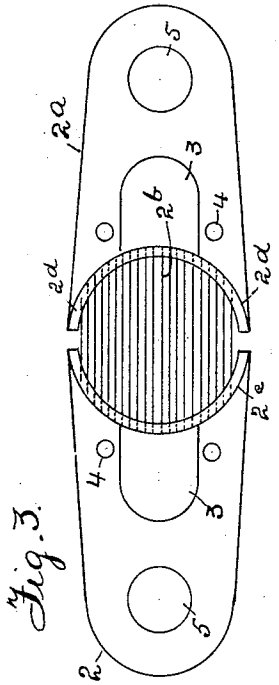

Fig. 9.

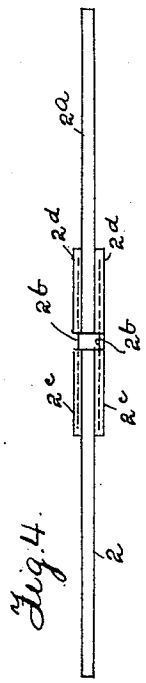

Fig. 7.


Fig. 8.


Fig. 1.


Fig. 2.


Fig. 3.


Fig. 4.

Witnesses
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Patented Apr. 17, 1923. 1,452,105

UNITED STATES PATENT OFFICE.

IRVING E. ASKE, OF DULUTH, MINNESOTA.

HEATER OR VAPORIZER.

Application filed February 11, 1921. Serial No. 444,146.

To all whom it may concern:

Be it known that I, IRVING E. ASKE, a citizen of the United States, residing at Duluth, in the county of St. Louis and State of Minnesota, have invented certain new and useful Improvements in Heaters or Vaporizers, of which I do declare the following to be a specification.

My invention relates to heaters or vaporizers and has for its object the provision of a simple and efficient electric heater or vaporizer for heating or vaporizing gas or liquid during its flow through a conduit. It has for a further object the provision of a vaporizer adapted to heat or vaporize the gas or hydro-carbon fuel oil flowing from a source of supply to the engine cylinder of an automobile, and the combination of the vaporizer with the starting battery and starting motor for such engine and starting switch for such motor, whereby the operation of such switch to start the motor and engine will also close the circuit for operating said vaporizer, and the retraction of said switch will open the circuit and de-energize said vaporizer, thus eliminating any special thought or attention in regard to the operation of the vaporizer. With these and other objects in view, it consists of the structures, combinations and arrangements of parts hereinafter described and claimed.

In the drawings, Fig. 1, an outside front elevation of a gasket including the preferred form of my said invention, omitting securing bolts and exterior circuit cables. Fig. 2, is a top plan view of the structure shown in Fig. 1. Fig. 3, is a front elevation of the hereinafter described screen plate forming part of my said invention. Fig. 4, is a top plan view of said Fig. 3. Fig. 5, is an interior elevation of a gasket plate forming part of my said invention. Fig. 6, is a central horizontal section through two of said gasket plates, showing space between and within them for said screen plate. Fig. 7, is a diagrammatic view showing the wiring system and electric connections of my said invention, Fig. 8, is a central horizontal section through a modified form of said screen plate. Fig. 9, is a reduced side elevation of a pipe line extending from a carburetor, in which pipe line my said invention is interposed.

In the drawings, are shown two gasket plates, 1, 1, substantially identical in structure. Said plates are recessed in their opposing faces, as at 1^a, to receive the screen shoulder of the vaporizer plate, and said gasket plates have fuel passages extending therethrough as at 1^b. Said plates are preferably constructed of insulating material to avoid the necessity of using a plurality of insulating parts. Within said recessed portions are preferably formed spacing lugs 1^f to space the hereinafter described wings of the screen plate and to more effectually insulate them from each other at those points; said lugs also being available as registering lugs for assembling purposes. Said gasket plates also have bolt passages 1^c, 1^c, formed thereon for bolting them together and for bolting the gasket to the flanges of communicating fuel pipes. Said gasket plates also have shoulders 1^d formed thereon. 1^e, 1^e are bolt or screw holes in said gasket plates, for receiving bolts or screws for securing them together through said screen plate. Interposed between said gasket plates is a screen plate, of electricity conducting material, comprising two wings 2, 2^a, connected together by one or more grids or screens 2^b. Said screen plate is preferably apertured as at 3 for the passage of bolts for securing said gasket plates and pipe flanges together, the diameters of said bolt passages in said screen plate being preferably larger than the diameters of such bolts. Said screen plate also preferably has formed therein apertures 4 for the passage of screws or bolts for securing said screen to said gasket plates. Said screen plate also preferably has formed therein apertures 5 for the passage of bolts for securing electric circuit cables to said plate. Said grids or screens are adapted to extend across said fuel passages in said gasket plates, and the lugs 1^f extend a short distance between the wings of said screen plate, there being no electrical communication between said wings except through said grids or screens, the wires or bars of which are connected or joined to said wings in multiple, and therefore the current divides and flows in proportionate volume through each wire or bar. Said screen plate preferably has shoulders 2^c, 2^d formed thereon adapted to extend into the recessed portions 1^a of said gasket plates, and said screens or grids are preferably formed by inserting the ends of separate wires or bars into grooves in said shoulders 2^c, 2^d and braising them fast, said wires or bars extending from one to the other of said

wings and across said fuel passage. One of said screens is preferably laid across one end or front of said shoulders 2^c, 2^d, and another of said screens is preferably laid across the other end or rear of said shoulders but if desired semi-annular ribs 2^e, 2^f may be formed within said shoulders as seats for additional similar screens.

Said screen plate may be included in a circuit including any suitable source of electricity, as a battery 6, a normally open contact as a motor starting switch 7 and the armature of a motor 8.

I am aware that an electric vaporizer adapted to be interposed in a liquid or gas conducting line of pipe is not broadly new. Among the advantages acquired by my invention, are that no separate control switch is required for the vaporizer; the starting switch for the motor automatically starting the vaporizer, and the opening of the motor switch automatically opening the vaporizer circuit; that there is practically no danger of leaving the vaporizer in operation by oversight or neglect; that the breaking or displacement of one screen-wire will not materially affect the service of the screen, whereas if the screen were made of turns of wire injury to any turn equivalent in length to one of the screen wires of the present invention might render the screen entirely useless; that the structure is simple, durable, comparatively inexpensive and easy to assemble or repair.

It is obvious that said invention may be modified in various particulars within the scope and spirit of my claims.

What I claim is:

1. A heater or vaporizer comprising two electricity-conducting wings spaced from each other and electrically connected together by an electricity-conducting grid or screen.

2. The combination with a pipe or conduit adapted to conduct gas or liquid, of a heating element interposed in said pipe, said element including two electrically-conducting wings spaced from each other and electrically connected together by an electricity-conducting screen comprising a plurality of bars or wires forming multiple conductors, and insulating means spacing said heating element from contact with said pipe.

3. The combination of a source of electricity, a normally open electric contact, a heating element, the armature of an electric motor, and a circuit closer for said contact.

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

IRVING E. ASKE.

Witnesses:
CHAS. B. ASKE,
M. A. FITZSIMMONS.