No. 629,246. Patented July 18, 1899.

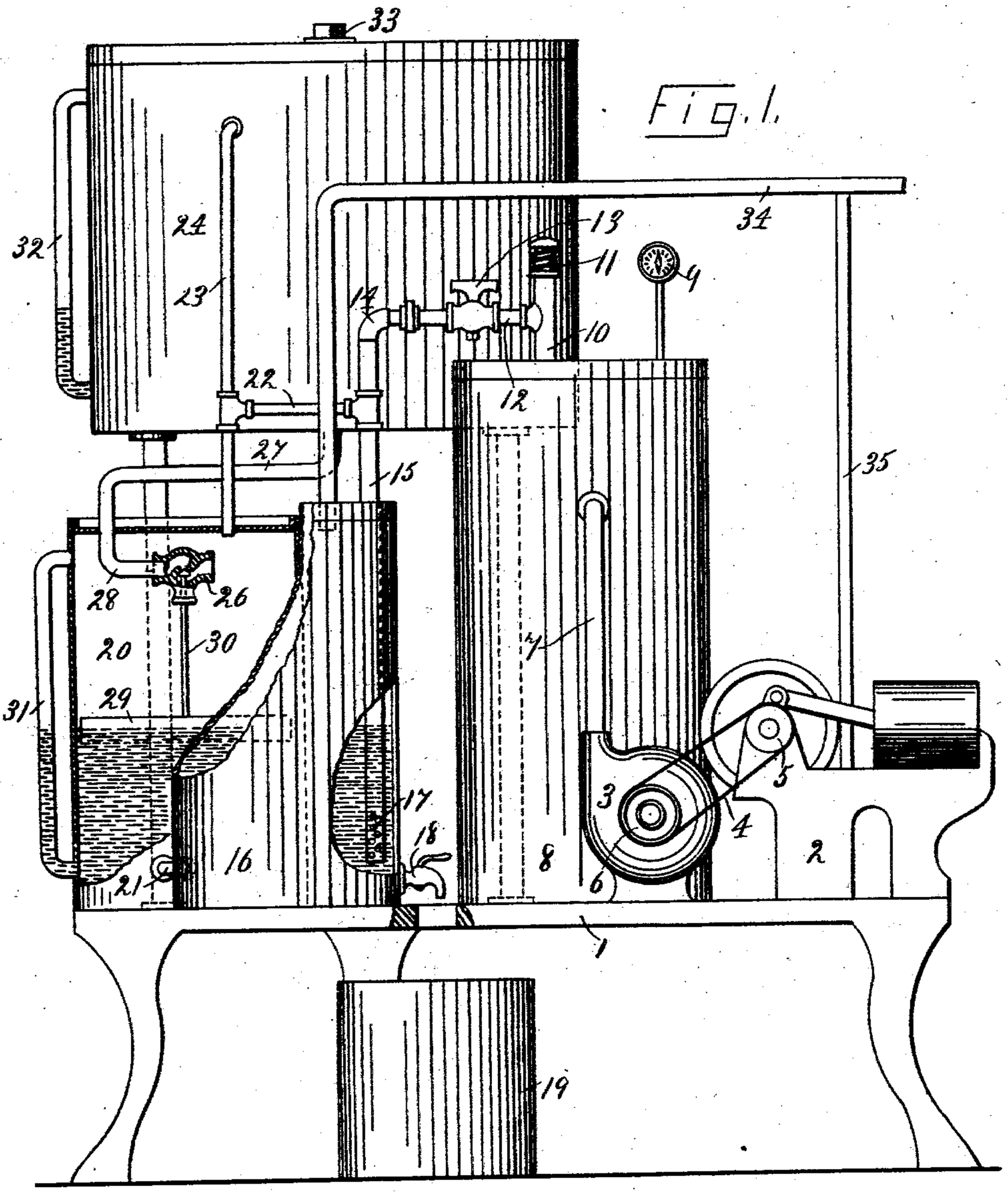
J. GRAU.

CARBURETER.

(Application filed May 27, 1898.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.



WITNESSES:

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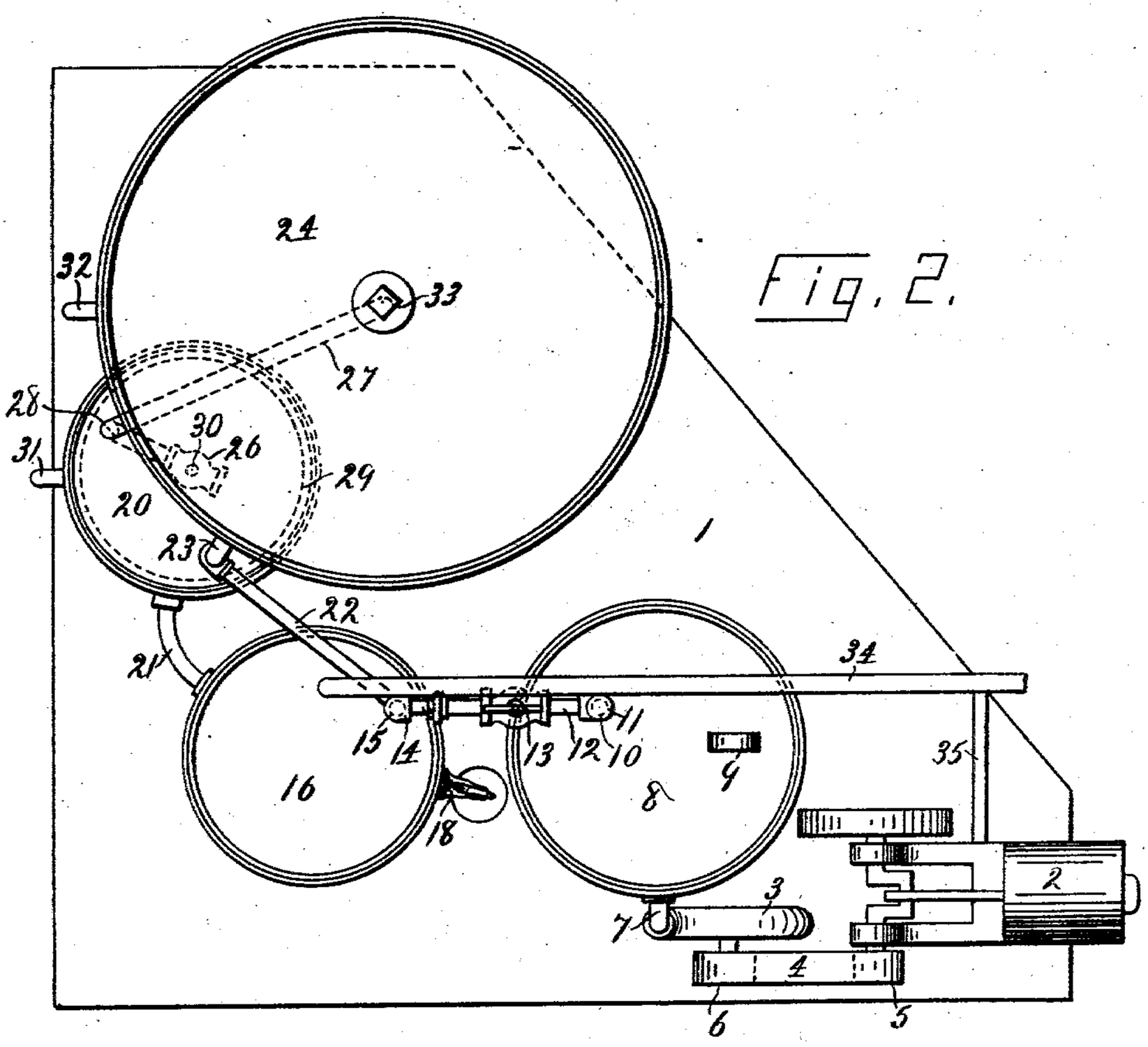
Fig. 2.



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JOSEPH GRAU, OF NEW YORK, N. Y.

CARBURETER.

SPECIFICATION forming part of Letters Patent No. 629,246, dated July 18, 1899.

Application filed May 27, 1898. Serial No. 681,912. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH GRAU, a citizen of the Republic of France, and a resident of New York city, county of New York, and State of New York, have invented certain new and useful Improvements in Gas-Generating Appartus, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof, in which similar letters of reference indicate corresponding parts.

My invention relates to an improvement in carbureters; and the object thereof is to provide an improved device of this character by means of which carbureted air may be used in connection with incandescent mantles for illuminating purposes and generated without the application of heat in any form to the liquid contained within the apparatus.

The invention consists in the means for and process of agitating the liquid in the reservoir and the oil-tank, whereby the said liquid is kept at an even temperature without the application of heat from external sources, the liquid being supplied to the carbureter under pressure.

In the drawings, Figure 1 is a side elevation of the device, a portion of the carbureting-tank and the oil-tank being broken away; and Fig. 2 is a plan view of the device.

In carrying out my process of carbureting air I employ, preferably, a stand 1, upon which is mounted a caloric engine 2 or any other suitable motor adapted to drive the rotary blower 3, mounted upon the stand adjacent to said engine. Upon one end of the fly-wheel shaft of the engine is fixed a pulley 5, and upon one end of the blower-shaft is fixed a pulley 6. The belt 4 is adapted to transmit the power from the engine or motor to the blower. An air-pipe 7, attached to said blower, communicates with the air-tank 8, mounted upon the stand 1. This air-tank 8 is provided with a pressure-gage 9 and a stand-pipe 10, which is provided with a safety-valve 11 of any approved type.

The branch pipe 12, communicating with the stand-pipe 10, is provided with a cut-off 13 and terminates in an elbow 14, which connects it with a vertical air-pipe 15. This air-pipe enters the carbureting-tank 16, and its lower end is provided with a series of perforations 17 and is submerged in the benzin contained in said tank. A drain-cock 18 is adapted to draw the benzin from the tank when desired, and a suitable receptacle 19 may be placed beneath the stand 1 to collect the liquid drawn from the tanks.

Adjacent to the carbureting-tank 16 and fixed to the stand 1 is the oil-tank 20. A pipe 21, near the lower ends of said tanks 16 and 20, permits the benzin to flow freely from one tank to the other. A branch pipe 22 connects the vertical air-pipe 15 with the vertical pipe 23, which communicates with the tank 20 and with the reservoir 24. A valve 26, of any approved construction, is connected to the lower end of the pipe 27, which communicates between the bottom of the reservoir 24 and the upper part of the oil-tank 20, the valve 26 being secured thereto adjacent to the elbow 28, located within the tank 20. A float 29, of any approved construction, is provided with a stem 30, adapted to close the valve 26 when the benzin within the tank 20 rises to a predetermined height. A glass tube 31, communicating with the upper and lower parts of the tank 20, shows the level of the benzin within said tank, and the glass tube 32, mounted upon the side of the reservoir 24, shows at a glance the height of the benzin contained therein. A screw-plug 33, located in the top of the reservoir 24, provides means whereby the reservoir may be filled when desired.

The service-pipe 34, communicating with the upper part of the carbureting-tank 16, is adapted to convey the carbureted air to any desired point. A branch pipe 35, connected to the service-pipe 34, is adapted to convey the carbureted air to the caloric engine 2, whereby the same is heated and operated. In the event of any other form of motor being substituted for the caloric engine this pipe 35 may be dispensed with.

In operation, power being communicated to the compressor by means of the caloric engine or other motor, a volume of air is forced through the pipe 7 into the air-tank 8, the cut-off 13 being closed. The pressure within the tank having risen to a predetermined amount, (usually about one pound,) the safety-valve 11 lifts, and the air escapes without passing into the carbureter. When it is desired to utilize the carbureting apparatus, the cut-off 13 is

opened, and the air passes from the tank 8 through the pipes 10 and 12 into the pipe 15. A portion of this air passes downwardly through said pipe 15 and escapes through the perforations 17 at the lower end thereof and becomes carbureted as it passes through the benzin contained in the carbureter. A portion of the air, passing through the pipe 12 into the pipe 15, escapes through the branch pipe 22 into the vertical pipe 23. A portion of this air passes upwardly into the reservoir 24 above the surface of the benzin contained therein, and a portion of the air passes into the upper part of the oil-tank 20 above the float. Owing to the fact that there is no escape for the air passing through the pipe 22, while the carbureted air from the carbureting-tank 16 passes through the service-pipe 34 and is consumed by the burners, a varying pressure is set up upon the benzin in the reservoir 24 and the oil-tank 20. This varying pressure, which is slight, results in an agitation of the surface of the benzin in the reservoir and a similar effect through the medium of the float upon which the air presses in the benzin contained in the oil-tank 20. By means of this agitation of the benzin within the reservoir 24 and the oil-tank 20 the benzin is kept at an even temperature best adapted for the economical production of the carbureted air. It will readily be seen that when benzin is placed within the reservoir 24 it flows downwardly through the pipe 27, through the valve 26 into the oil-tank 20, and through the pipe 21 into the carbureting-tank 16 until the benzin within the oil-tank and carbureting-tank has risen to a predetermined height adapted to lift the float 29 and close the valve 26, thereby cutting off the supply of benzin from the reservior. As the benzin is consumed in the process of carbureting the air the float falls, the valve 26 opens, and the benzin flows downwardly again through the pipe 27 until a sufficient quantity runs into the tank 20 to again lift the float and stem attached thereto, thereby closing the valve and cutting off the supply.

During the process just described a uniform supply of benzin is maintained in the oil-tank 20 and the carbureting-tank 16, and this supply of benzin is always kept at the uniform temperature desired.

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

In a carbureting apparatus, a valve-controlled compressed-air tank, a carbureter, an oil-tank, an oil-reservoir, an air-pipe communicating between the compressed-air tank and carbureter through which air is adapted to flow, branch pipes communicating between said air-pipe and the oil-tank and reservoir, said pipes being adapted to hold air under pressure varying with the passage of the air through the main air-pipe, whereby the air-pressure within the oil-tank and the reservoir is rendered intermittent, as and for the purpose set forth.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 25th day of May, 1898.

JOSEPH GRAU.

Witnesses:
SYDNEY I. PRESCOTT,
JOHN J. MCGRANE.