No. 813,374. PATENTED FEB. 20, 1906.

P. GILBERT.

SOLDERING IRON.

APPLICATION FILED MAY 13, 1905.

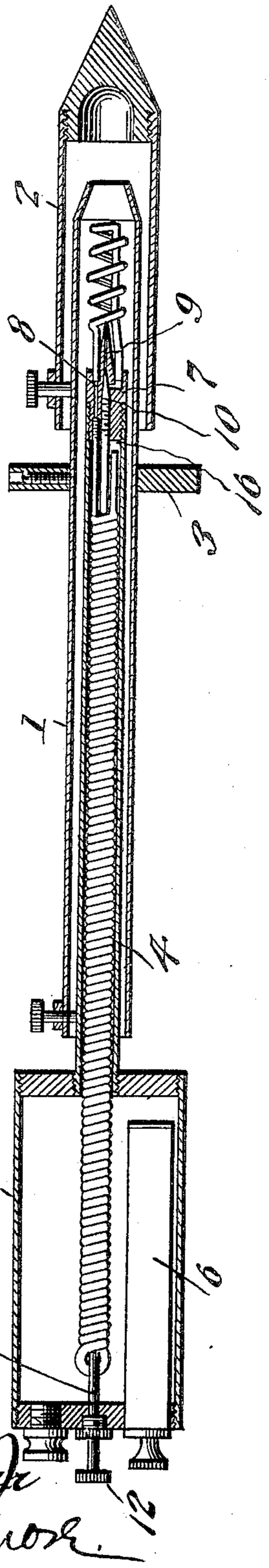

Fig. 1.

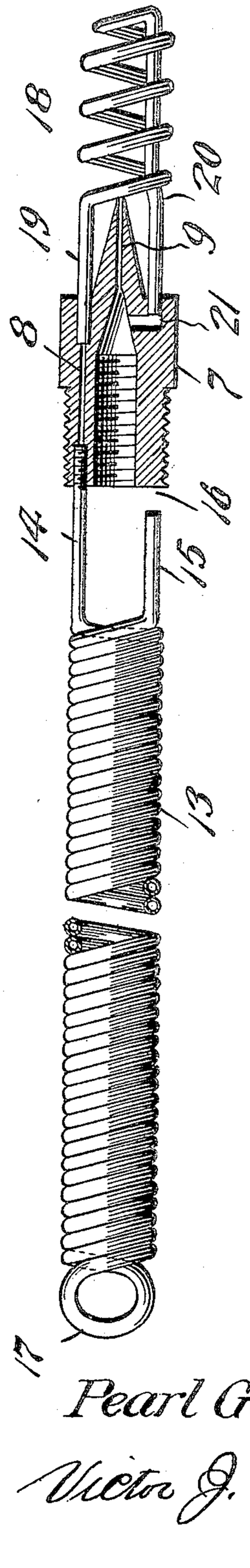

Fig. 2.

Witnesses

Geo. Ackemann Jr.

F. L. Emerson.

Inventor

Pearl Gilbert,

By Victor J. Evans

Attorney

UNITED STATES PATENT OFFICE.

PEARL GILBERT, OF NEWPORT, RHODE ISLAND.

SOLDERING-IRON.

No. 813,374. Specification of Letters Patent. Patented Feb. 20, 1906.

Application filed May 13, 1905. Serial No. 260,303.

To all whom it may concern:

Be it known that I, PEARL GILBERT, a citizen of the United States, residing at Newport, in the county of Newport and State of Rhode Island, have invented new and useful Improvements in Soldering-Irons, of which the following is a specification.

This invention relates to soldering-irons, being designed especially as an improvement on the device disclosed in my prior patent, No. 774,064, dated November 1, 1904, and has for its objects to provide a simple and efficient means for feeding the gasolene from the tank or reservoir to the burner, one whereby in the gasolene for feeding the burner will flow in a steady uniform current, and one whereby the device is especially adapted for use in a vertical position.

With these and other objects in view the invention comprises the novel features of construction, combination, and arrangement of parts more fully hereinafter described.

In the accompanying drawings, Figure 1 is a longitudinal section centrally through an iron embodying the invention; and Fig. 2 is a detail view, partly in section, of the feed-tube and burner.

Referring to the drawings, 1 designates a tubular shank having attached to its forward end the soldering-iron 2 and provided at a point adjacent said iron with a hand-shield 3, there being extended through the shank 1 a feed tube or duct 4, having attached to its rear end a tank or reservoir 5, equipped with an air-compressing pump 6, and to its forward end a jet-nozzle provided with a gas passage or port 8 and with a central jet opening or passage 9, which may be closed by a pin-valve 10, the stem or rod 11 of which extends centrally through the tube 4 and tank 5 and terminates at the outer end of the latter in a knurled head 12, by which the stem may be rotated for opening and closing the valve. These parts as illustrated herein are identical with the corresponding parts disclosed in my prior patent, but may be of other appropriate form and arrangement.

In accordance with the present invention I provide a feed member 13, comprising a duplex spirally-coiled tube disposed within and extended substantially through the feed-tube 4 and the tank 5 and coiled around the valve-stem 11, said member terminating at its forward end in a straight portion or arm 14, the terminal of which is externally threaded and tapped into the rear end of the nozzle 7 in line with the passage 8, with which latter it communicates, there being also provided at the forward end of the feed member a second portion or arm 15, arranged parallel with the arm 14, but of a length to terminate short of the rear end of the jet-nozzle 7, thus to produce between said parts and within the feed-tube 4 a space 16 for a purpose which will hereinafter appear. In forming the feed member 13 the small tube or pipe of which it is composed is after formation of the arm 14 coiled upwardly around the stem 11 with the coils in spaced relation and then bent to produce at its rear end a circular connecting portion 17, being thereafter returned upon itself in spiral coils to the forward end of the stem 11, around which the second set of coils are formed, the second coils being entered between the coils produced in the first step.

Attached to the forward end of the jet-nozzle 7 is a generating pipe or duct 18, having an arm 19 seated in the jet-nozzle for communication with the front end of the passage 8, the pipe being continued from the arm 19 in a series of coils through which it is returned upon itself and has the terminal of its returned portion 20 entered into a port 21, through the medium of which it communicates with the jet-passage 9, as in my prior patent.

In practice the tank 5 is filled with gasolene or other liquid fuel, which flows through the tube 4 externally of the feed member 13, the coils of which feed the liquid fuel through the tube to the space or chamber 16, from which it passes into the arm 15 and flows backwardly through the upwardly-pitched coils of the feed member to and through the terminal coil 17 and thence through the forwardly-pitched coils of the member to the forward end of the latter, from which it passes through the arm 14 into the passage 8 and is delivered into the generating pipe or duct 18. The fuel flows through the coils of the pipe 18, thence backward through the return end portion 20 and port 21 to the passage 9, it being understood that the jet of flame issuing from the end of the nozzle 7 serves, in addition to heating the iron, to also heat the generating-pipe 18, thereby converting the fuel into gas prior to its delivery from the nozzle through the port or passage 9. It is to be particularly observed that under my present construction the fuel is fed gradually and uniformly from the tank 5 to the jet-nozzle and that this feeding of the fuel will be regular and uni-

form irrespective of the position in which the iron is held, thus especially adapting the device for use in a vertical position, as hereinbefore stated.

From the foregoing it is apparent that I produce a simple inexpensive device admirably adapted for the attainment of the ends in view, it being understood that minor changes in the details herein set forth may be resorted to without departing from the spirit of the invention.

Having thus described the invention, what is claimed as new is—

1. In a device of the class described, a tank or reservoir, a soldering-head, a jet-nozzle within the latter, a feed-duct connecting the tank and nozzle, and a spirally-coiled feed member within the feed-duct.

2. In a device of the class described, a tank or reservoir, a jet-nozzle provided with feed and jet passages, a soldering-head disposed and sustained in the path of the jet-passage, a feed-duct connecting the tank and jet-nozzle, and a tubular spirally-coiled feed member within the feed-duct and communicating with the feed-passage.

3. In a device of the class described, a tank or reservoir, a jet-nozzle having a feed-passage, a feed-duct connecting the tank and nozzle, a spirally-coiled tubular feed member housed in the duct and communicating with the feed-passage, said nozzle being provided with a jet-opening, and a soldering-head sustained in the path of said opening.

4. In a device of the class described, a tank or reservoir, a jet-nozzle having feed and jet openings, a feed-duct connecting the tank with the nozzle and provided at the rear end of the latter with a chamber, a spirally-coiled tubular feed member housed in the duct and adapted to feed liquid fuel thereover, said member being arranged for communication at one end with the feed-passage and at its other end with the chamber and having return-coils leading from the latter, and a soldering-head sustained in the path of the jet-opening.

5. In a device of the class described, a tank or reservoir, a jet-nozzle having feed and jet openings, a duct connecting the tank with the nozzle and provided in rear of the latter with a chamber, a spirally-coiled tubular feed member arranged in the duct and having one end connected with the feed-passage and its other end communicating with the chamber, said member being adapted to feed liquid fuel through the duct to the chamber and thence through itself to the feed-passage, a vaporizing-tube connected with said passage and leading to the jet-opening, and a soldering-head sustained in the path of the latter.

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

PEARL GILBERT.

Witnesses:
STEWART DENHAM,
LEWIS C. PALMER.