

UNITED STATES PATENT OFFICE.

GEORGE VAN CAMP, OF INDIANAPOLIS, INDIANA.

SOLDERING-IRON.

SPECIFICATION forming part of Letters Patent No. 671,460, dated April 9, 1901.

Application filed November 30, 1900. Serial No. 38,174. (No model.)

To all whom it may concern:

Be it known that I, GEORGE VAN CAMP, of Indianapolis, county of Marion, and State of Indiana, have invented a certain new and useful Soldering-Iron; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which like figures refer to like parts.

This invention relates to novel features in the construction of soldering-irons.

The nature of the invention will be understood from the following description and claims attached hereto.

Figure 1 is a longitudinal central section of the soldering-iron with the gas-supply pipe broken away. Fig. 2 is a longitudinal central section of one-half at a right angle to the section shown in Fig. 1, parts broken away.

My invention is disclosed herein as embodied in a soldering-iron peculiarly fitted for soldering caps to tin cans in canning fruit and the like.

1 is the soldering-tip, whose end is provided with a central cavity 2, forming an extreme annular point that in use is placed in contact with the top of the can and the cap, and whose diameter is substantially the same as that of the cap to be soldered on the can. It is provided with an air-inlet 3 to prevent the iron being held to the cap by suction when it is desired to remove the iron from the cap. The said tip 1 is centrally provided with a passage-way 4, through which the cap-holding rod 15 can vertically reciprocate while the device is in use.

A cylinder 5 is internally threaded at its lower end, whereby it is screwed to the upper end of the tip 1, as shown, and on the two opposite sides at the upper end of said cylinder 5 there are placed two laterally-extending projections or flanges 6, each of which extends only a small portion of the way along the upper edge of said cylinder and between said flanges 6. The upper edge of the cylinder is cut away at 7 to provide suitable outlets for the flame and gases arising from the fire that is maintained within said cylinder while the device is in use. Said cylinder is detachably connected with the top 8 by means of the flanges 6 on said cylinder being inserted in recesses in the sides of the top 8, formed by

the inwardly - extending flanges 9. These flanges 9 are about the same length as the flanges 6. The internal diameter of the top 8 is but slightly larger than the external diameter of the cylinder including flanges 6, so that the upper end of said cylinder can be inserted in the top 8, the flanges 6 passing between the flanges 9 as they are inserted, and then by turning the cylinder 5 the flanges 6 enter said recesses provided by the flanges 9. In this way the cylinder 5 is secured to said top 8 and a suitable outlet between the top and the cylinder at 7 is provided, as above mentioned. Centrally depending from the top 8 there is a guide extension 10, centrally bored out for the passage of the cap-holding rod 15, said passage registering with the passage 4 through the tip 1. The lower end of said extension 10 fits snugly in a corresponding depression or seat in the upper side of the tip 1, so as to make a tight joint and prevent the flame from entering the passage-way 4 for the cap-holding rod, and thereby getting down to the cap of the can.

Two pipes or conduits 11 extend through the top 8, the lower ends of said pipes being threaded to fit in threaded holes in said top. The upper ends of said pipes are secured to a common chamber 12, into which the main gas and air supply pipe 13 enters. Gas and air already mixed is supplied to this pipe 13 by a flexible tube or any other suitable means. A handle 14, made of wood, is secured around the pipe 13, whereby the tool is manipulated.

The cap-holding rod 15 is held down by gravity on the cap and is weighted somewhat by the weight 16. The guard 17 rests upon the top 8 to keep the heat and flame from the hand of the operator as he grasps the handle 14. It is preferably made of sheet metal with the edge turned down somewhat and provided with a pair of holes through which the pipes 11 extend. Said guard may fit loosely about the pipes 11 and rest on the rings 18 to prevent its direct contact with the top 8 when heated.

In operation the air and gas already mixed is turned on and enters the tool through the pipe 13, passing into the chamber 12, where it is divided and passes through the two pipes 11 into each side of the chamber within the cylinder 5, whereby it is distributed and the

flame and heat divided. Said inlets through the top 8 for the mixed air and gas are placed adjacent to and just on the inside of the sides of the top 8, to which the extensions 9 are secured. When the gas thus entering in the cylinder 5 is lighted, it fills the said cylinder with flame, and the carbonic-acid gas and unconsumed gases escape therefrom through the two side openings 7 in the upper portion of the cylinder 5 to the open air. The heat thus constantly maintained within the cylinder 5 with great uniformity heats the tip 1 and gives to it a uniform heat, said tip becoming, if desired, red hot and can be maintained in that condition. The tool is placed by hand on the top of the can after the cap is in place. The annular extreme lower end of the tip engages the top of the can at the periphery of the cap and substantially conforms to said periphery. In such operation the cap is held stationary by the weight of the rod 15.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A soldering-iron including a closed tip, a cylinder secured to the upper portion of the tip with an outlet-opening near its upper end, a top secured to the upper end of the cylinder, a plurality of pipes extending through said top, and means for conveying combustible gas to said pipes.

2. A soldering-iron including a closed tip,

a cylinder secured to the upper portion of the tip with an outlet-opening at the upper end, a top on the upper end of said cylinder with a centrally-depending extension fitting snugly at its lower end against the tip, said tip and extension from the top being provided with a passage-way therethrough, a cap-holding rod loosely extending through said passage-way, and means for conveying combustible gas into said cylinder.

3. A soldering-iron including a tip, a cylinder secured to the upper portion thereof with an outlet-opening in its upper end, a top detachably secured to the upper end of the cylinder, a plurality of pipes connected with said top and extending through the same, a guard supported on said top and provided with apertures through which said pipes extend, a chamber to which said pipes are connected at their upper ends, a pipe centrally connected with said chamber through which combustible gas may be conveyed, and a handle surrounding said pipe above said chamber.

In witness whereof I have hereunto affixed my signature in the presence of the witnesses herein named.

GEORGE VAN CAMP.

Witnesses:

LAURA HITT,

V. H. LOCKWOOD.