(Model.)

V. STORCH.

Soldering Iron.

No. 236,106. Patented Dec. 28, 1880.

Fig. 1.

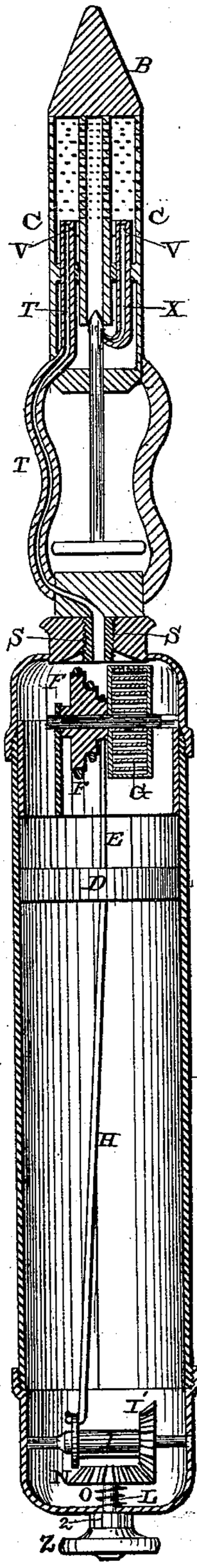


Fig. 2.

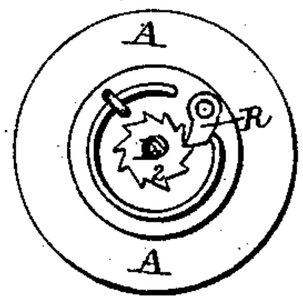
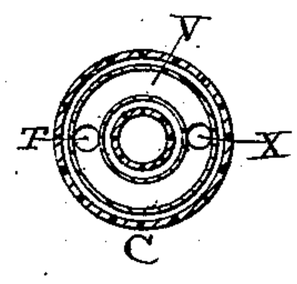


Fig. 3.



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UNITED STATES PATENT OFFICE.

VALENTIN STORCH, OF KNOXVILLE BOROUGH, PENNSYLVANIA.

SOLDERING-IRON.

SPECIFICATION forming part of Letters Patent No. 236,106, dated December 28, 1880.

Application filed November 13, 1880. (Model.)

To all whom it may concern:

Be it known that I, VALENTIN STORCH, a citizen of the United States, residing at Knoxville borough, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Soldering-Irons; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

My invention relates to an improvement in soldering-irons; and it consists in making the handle hollow to receive the oil, gasoline, or other fluid which is to be used for the purpose of heating the point, and placing a piston in this handle for the purpose of forcing the oil up to the burner.

It further consists in attaching a wire or a chain to each side of the piston placed in the handle, and attaching one of the wires or chains to a spring mechanism for drawing the piston up into the handle, so as to cause it to force the oil out, and attaching the other wire or chain to a drum or pulley in the lower end of the handle, whereby the piston can be drawn down to the bottom of the handle, so as to allow the handle to be filled, as will be more fully described hereinafter.

The object of my invention is to so construct a soldering-iron that the oil or other substance which is burned for the purpose of heating the point can be automatically fed to the burner, so as to keep up a constant and uniform heat, and thus avoid the necessity of constantly having to put the iron in the fire for the purpose of reheating it.

Figure 1 is a vertical longitudinal section of my invention. Figs. 2 and 3 are detail views of the same.

A represents the handle, which is made hollow and somewhat larger than usual, so as to receive the oil, gasoline, or other liquid which is to be used for fuel in heating the point B by means of the burner C. In this handle is placed the piston D, which is packed so as to move air and water tight, and which piston has secured to its upper side a wire, cord, or chain, E. The outer end of this cord, wire, or chain has its end secured to a fusee or drum, F, of any suitable description, and which drum has secured to its shaft a spring, G, for the purpose of keeping the cord, wire, or chain constantly wound upon the drum. This shaft is made square at one end, so as to receive a key or device by means of which the spring can be unwound, and thus allow the piston to be drawn down to the bottom of the handle when so desired. This spring is sufficiently strong to exert a powerful tension upon the piston, so that whenever the piston is free to move the spring will draw it up into the upper end of the handle. Secured to the under side of the piston is a second wire, cord, or chain, H, which has its outer end secured to a drum or pulley, I. This drum or pulley I has a suitable gear-wheel upon one end.

Passing through the lower end of the handle is a shaft, L, which has secured to its inner end a wheel, N, for gearing with the wheel I′, and to its outer end is secured a small milled button, Z, by means of which the shaft is made to revolve. This shaft has an endwise movement, and has a contractile spring, O, applied to it, so as to keep the shaft constantly pressed outward, and thus prevent the wheel N from gearing with the wheel I′ until the shaft has been pushed inward for that purpose. Upon the outer end of the shaft, just inside of the milled button, is formed a ratchet, 2, and meshing with this ratchet is a spring-dog, R. As long as the shaft is pressed outward to its full length by means of the spring O it will, when turned, revolve idly around; but when the shaft is pushed inward and then turned to the right or left, according to the pitch of the teeth, the wheel N is brought in gear with the wheel I′ and the drum or pulley is made to revolve in such a manner as to wind the cord, wire, or chain upon it, and thus draw the piston down into the lower end of the handle, for the purpose of allowing the handle to be filled with the burning-fluid through the opening S in its upper end.

When it is desired to fill the handle with the burning-fluid the shaft is pushed inward, so as to make the two wheels N I′ mesh together, and then, by turning the shaft for-

ward to the right, the drum is made to wrap the wire, cord, or chain which is secured to the under side of the piston, and thus draw the piston down into the bottom of the handle. The whole upper part of the iron above the handle is then unscrewed at S, so as to allow the fluid to be poured into it through the opening S, into which the part removed fits. After the removed part has been again screwed into position the shaft is pulled outward to release the drum or pulley F, and then the whole power of the spring in the upper end of the handle is exerted in drawing the piston upward and forcing the burning-fluid up to the burner. While the wire, cord, or chain is wrapped upon the pulley I so as to hold the piston down into the lower end of the handle, the power exerted by the spring G, operating through the gear-wheels I′ N and shaft L, is enough to cause sufficient friction between the ratchet 2 on the shaft L and the spring-dog R to prevent the spring O from forcing the shaft outward, so that whenever it is desired to stop the operation of the piston it is only necessary to force the shaft inward by hand and draw the piston slightly backward by turning the end wheel or button, and then the piston will be held in this position until released by the movement of the shaft by the hand applied to the end wheel, Z. As the fluid is forced from the handle it passes through the pipe T, through the ring V, which surrounds the burner, and down through the pipe X to the point at which the vapor is discharged into the burner. The fluid is passed through the ring immediately around the burner for the purpose of being heated by the flame, and thus vaporizing the fluid, so that it will burn more readily. The heat from this burner, which may be of any desired construction, heats the point B, so as to keep up a constant and steady heat.

Having thus described my invention, I claim—

1. A soldering-iron having a hollow handle to receive the burning-fluid, in combination with a piston placed therein and a mechanism in each end of the handle for the purpose of moving the piston back and forth, substantially as shown.

2. In a soldering-iron, the combination of a hollow handle, a piston placed therein, a spring, a drum, and a cord, wire, or chain for connecting the piston to the drum, substantially as described.

3. In a soldering-iron, the combination of a hollow handle, a piston placed therein, a cord, wire, or chain secured to the piston, a drum or pulley for wrapping the cord, wire, or chain upon, and a mechanism for revolving the pulley, which mechanism can be thrown in and out of gear therewith, substantially as set forth.

4. In a soldering-iron, the combination of a hollow handle, a piston placed therein, and a mechanism for drawing the piston upward, so as to force the fluid to the burner, with a burner which is connected to the handle by means of suitable tubes or pipes, substantially as specified.

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

VALENTIN STORCH.

Witnesses:
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