(No Model.)

A. SUNDEEN & S. B. MOLANDER.

SELF HEATING SOLDERING IRON.

No. 428,236. Patented May 20, 1890.

Fig. 1.

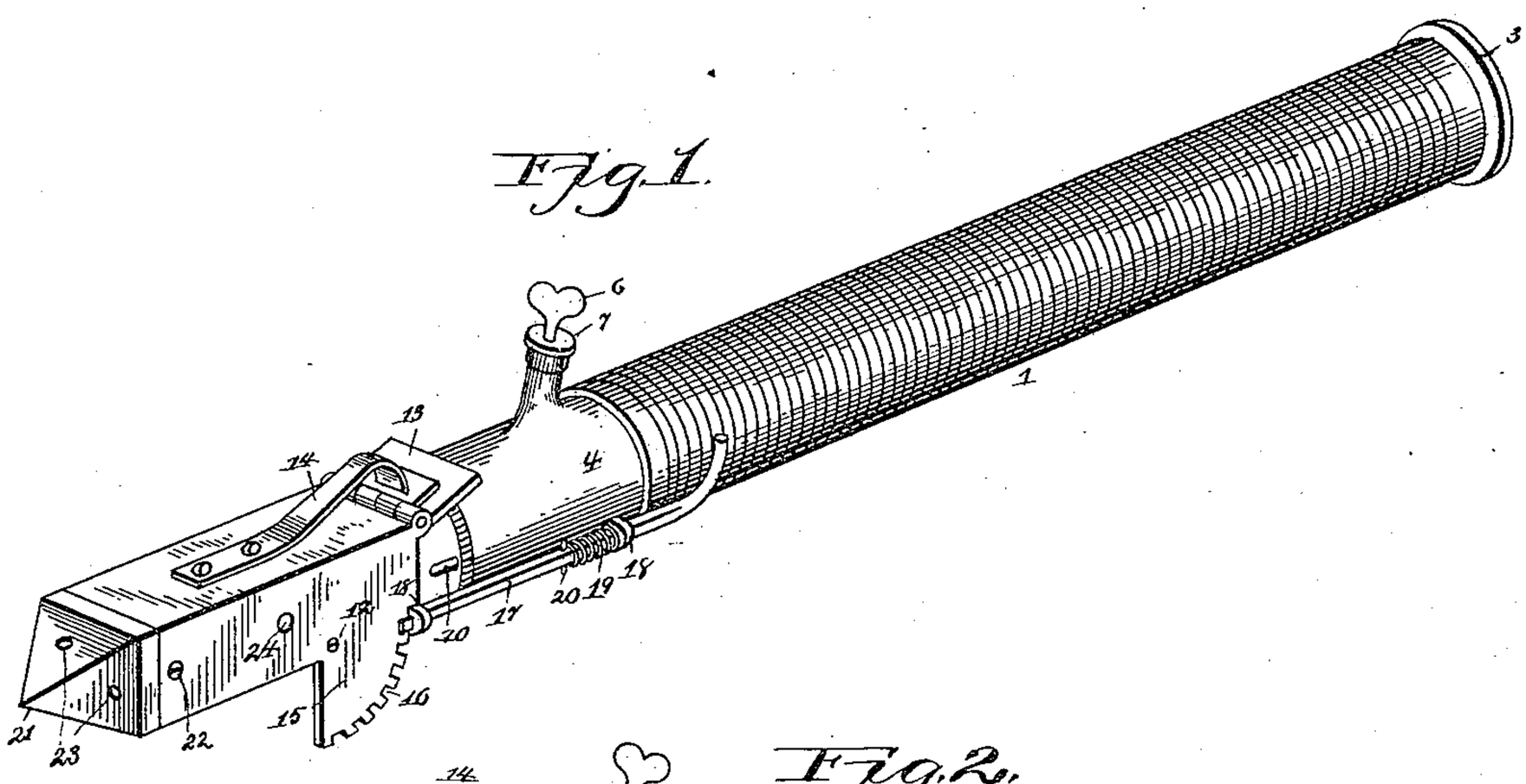


Fig. 2.

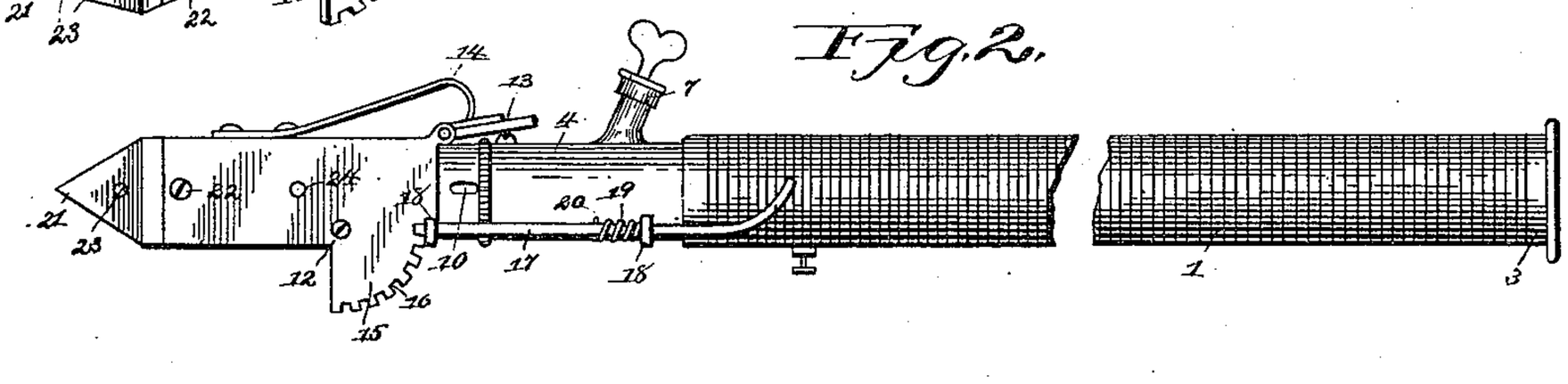


Fig. 3.

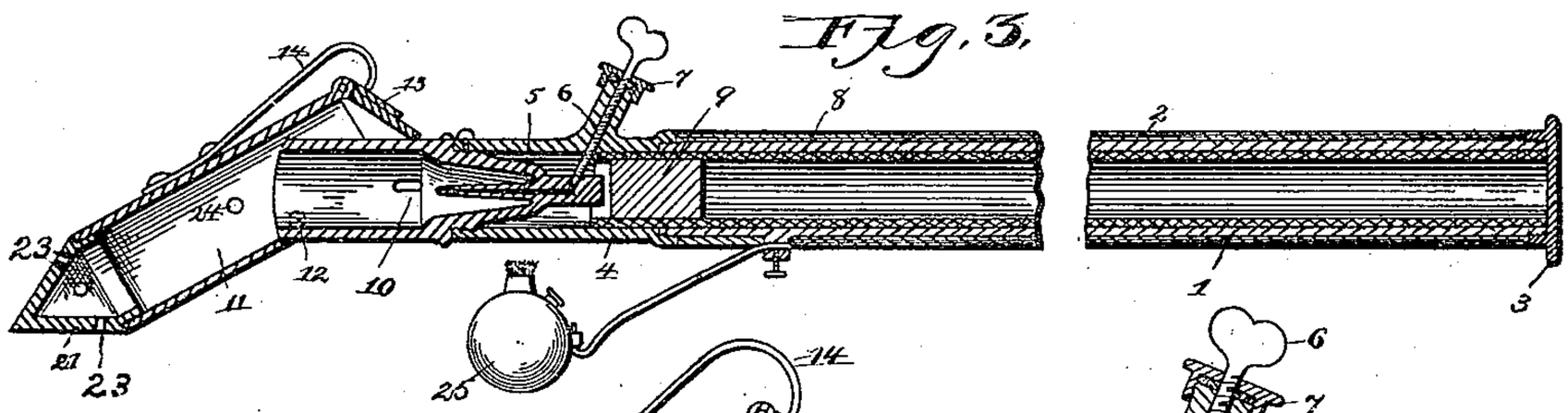
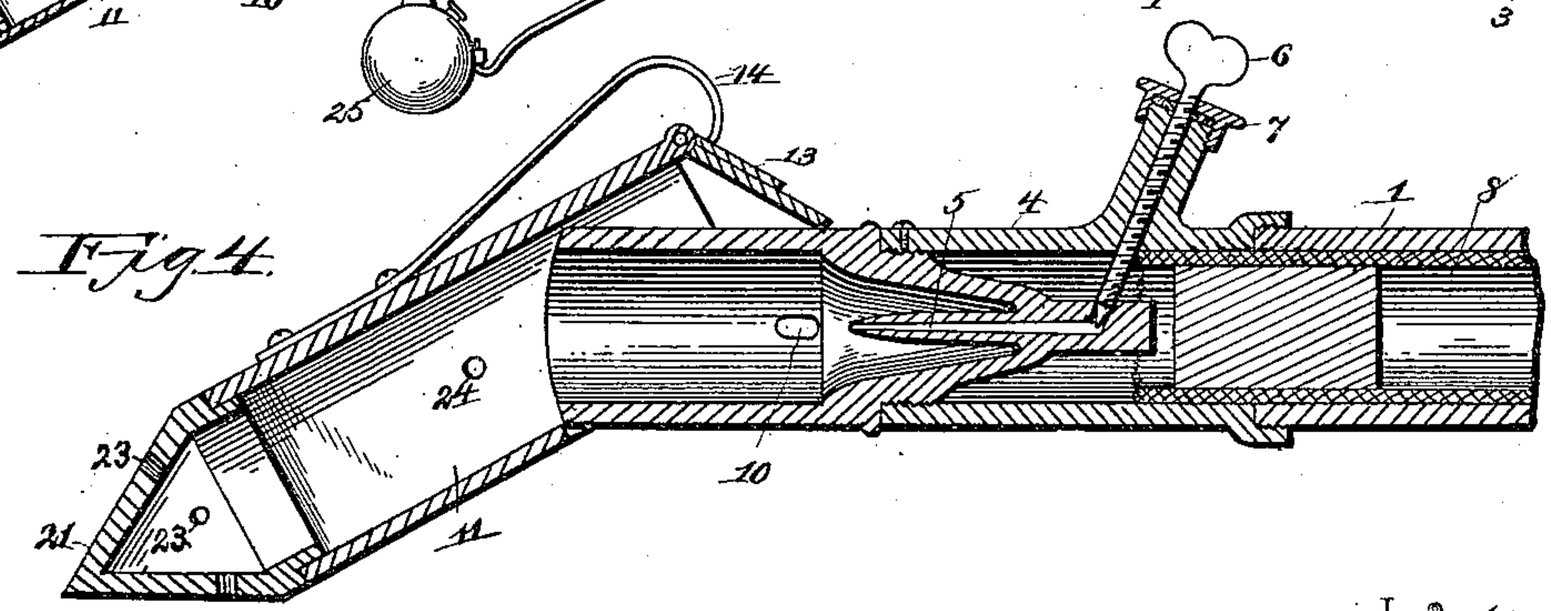


Fig. 4.



Witnesses

E. Wurdeman.

Wm. Bagger.

By their Attorneys,

Inventors

Alfred Sundeen and Swan B. Molander

C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

ALFRED SUNDEEN AND SWAN B. MOLANDER, OF MORA, MINNESOTA.

SELF-HEATING SOLDERING-IRON.

SPECIFICATION forming part of Letters Patent No. 428,236, dated May 20, 1890.

Application filed October 4, 1889. Serial No. 326,009. (No model.)

To all whom it may concern:

Be it known that we, ALFRED SUNDEEN and SWAN B. MOLANDER, citizens of the United States, residing at Mora, in the county of Kanabec and State of Minnesota, have invented a new and useful Self-Heating Soldering-Iron, of which the following is a specification.

This invention relates to self-heating soldering-irons, and is an improvement on the device for which Letters Patent of the United States, No. 400,509, were granted to us on the 2d day of April, 1889.

Our present invention consists in an improved construction and arrangement of parts, to be hereinafter more fully described, whereby the soldering-point is made adjustable with relation to the handle.

It further consists in the improved arrangement of a tubular wick and a stopper to check and regulate the flow of the burning-fluid.

It further, and finally, consists in the improved construction and arrangement of details, which will be hereinafter fully described, and particularly pointed out in the claims.

In the drawings hereto annexed, Figure 1 is a perspective view of a soldering-iron embodying our improvements. Fig. 2 is a side view of the same. Fig. 3 is a longitudinal sectional view of the same. Fig. 4 is a longitudinal sectional view, on a larger scale, of the lower end of the handle and the soldering-point.

Like numerals of reference indicate like parts in all the figures.

1 designates a tubular handle, constructed of metal or other suitable material and provided with a wrapping 2, of any suitable non-conducting material, to enable it to be grasped without danger of burning the hand. The upper end of the handle 1 has a screw-cap or cover 3. In the lower end of the handle 1 is secured the valve-casing 4, having a narrow passage 5, adapted to be closed by a needle-valve 6, extending through a packing-box 7, formed upon the side of the handle.

8 designates a tubular wick extending through the entire length of the handle and provided near its lower end, just above the valve-casing, with a plug or stopper 9, for the purpose of checking and regulating the flow of burning-fluid to the valve-casing 4. Near the lower end of the handle, below the valve-casing, are formed a series of openings 10, for the admission of air.

11 designates the body of the soldering-point, which is secured pivotally to the lower end of the handle by means of transverse pins or screws 12. The body of the soldering-point is provided at its upper end with a hinged cover 13, which is held normally in a closed position by the action of a suitably-arranged spring 14.

The body 11 is provided with a segmental bracket 15, having a series of notches 16, any one of which may be engaged by a rod 17, sliding in eyes or bearings 18 on one side of the handle 1, and which is forced automatically in a downward direction to engage the said notches by the action of a spring 19, which is coiled upon the rod 17 between one of its bearings 18 and the transverse pin 20. It will be seen that, owing to this construction, the body of the soldering-point may be readily adjusted to and held in any desired position with relation to the handle 1. It will also be seen that the cover 13 at the upper end of the body of the soldering-point will be closed at any position which may be assumed by the latter, unless intentionally opened by the operator by force exerted against the tension of a spring 14.

Secured to the lower end of the hollow body 11 of the device is the point 21, which may be of any desired shape, and which, being secured detachably by means of screws 22, may be readily removed for the substitution of a differently-shaped point. The point 21 is provided with perforations 23, and the body 11 is likewise provided near its lower end with openings 24.

25 designates a spirit-lamp, which may be secured detachably to the handle 1 in such a position as to heat that portion of the said handle which contains the valve-casing, for the purpose of converting a portion of the fluid into vapor.

In operation the body of the tubular handle 1 is filled with burning-fluid, such as gasoline or some equally volatile hydrocarbon. When the spirit-lamp 25 is ignited, the heat derived therefrom will very soon convert a portion of

the fluid contained in the wick between the stopper 9 and the valve-casing 4 into vapor, which by opening the valve 6 will be allowed to escape through the passage 5 into the mixing-chamber, which is composed of the lower portion of the valve-casing 4, and where it will be mixed with atmospheric air entering through the openings 10. At this point the gas may be ignited, and the flame, passing into the body of the soldering-point, will rapidly heat the latter to the required degree. The openings 23 and 24 serve to admit air to the flame, and also to form an outlet for the latter. After the fire has once been started, the spirit-lamp 25 may be removed, inasmuch as the heat generated by the apparatus will be sufficient to convert the burning-fluid into vapor as it reaches the valve chamber or casing. It will be seen that while the stopper 9 intercepts the body of the burning-fluid and prevents it from flowing direct to the valve-casing the wick will be continually kept moist and furnish a sufficient supply of the burning-fluid to maintain combustion.

If the soldering-point should at any time become overheated, the cover 13 may be opened, and the flame will then be allowed to escape through the upper end of the body 11, instead of being deflected toward the working end of the point.

The device may, by removing the pivoted soldering-point 11, be used as a blow-lamp, such as is frequently used by plumbers and others for the purpose of melting solder in places which are not readily accessible to the point of the soldering-iron.

Having thus described our invention, we claim and desire to secure by Letters Patent of the United States—

1. The combination of the tubular handle, the valve-casing at the lower end of the same, the needle-valve, the tubular wick, and the stopper arranged in the latter, substantially as and for the purpose set forth.

2. In a self-heating soldering-iron, the combination, with the tubular handle having the valve-casing, the needle-valve, the tubular wick, and a stopper arranged in the latter, of a soldering-point mounted pivotally at the lower end of the handle, substantially as set forth.

3. The combination of a tubular handle having the valve-casing and needle-valve, the pivoted soldering-point, and the working-point mounted detachably at one end of the latter by means of screws 22, and having perforations 23, substantially as set forth.

4. The combination, with the tubular handle having the valve-casing and needle-valve, of the pivoted soldering-point having the detachable working-point and a hinged cover, substantially as set forth.

5. The combination of the tubular handle having the valve-casing, the needle-valve, the tubular wick, the stopper at the lower end of the latter, and the air-inlet openings, the pivoted soldering-point having the hinged spring-pressed cover, and the working-point secured detachably at the lower end of the body of the soldering-point, substantially as set forth.

6. In a self-heating soldering-iron, the combination of the tubular handle having the valve-casing and the needle-valve, the tubular wick having the stopper at its lower end, the air-inlet openings at the lower end of the valve-casing, the pivoted soldering-point having the hinged spring-pressed cover and the segmental rack, the working-point secured detachably at the lower end of the body of the soldering-point and having openings or perforations formed therein, and the sliding spring-pressed rod attached to the tubular handle and engaging the segmental rack of the soldering-point, substantially as and for the purpose set forth.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in presence of two witnesses.

ALFRED SUNDEEN.
SWAN B. MOLANDER.

Witnesses:
S. D. SEAVEY,
J. C. POPE.