

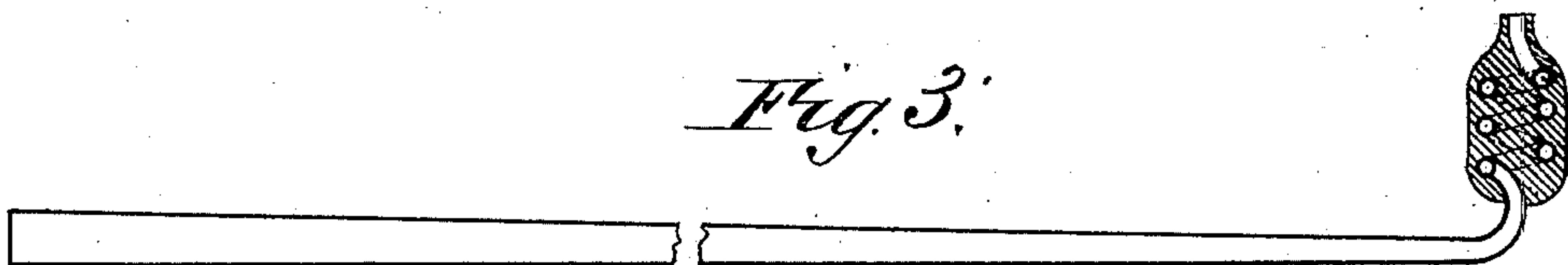
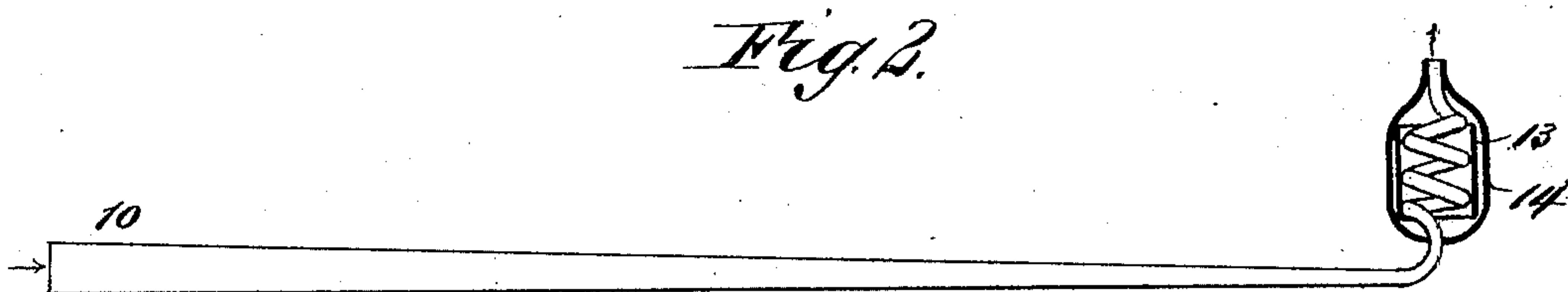
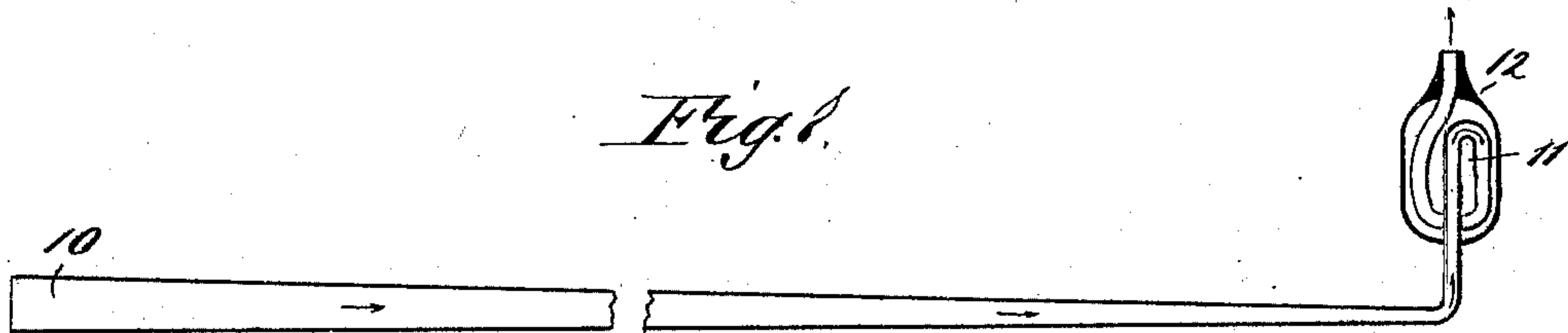
(No Model.)

F. HELLER.

AIR HEATER.

No. 368,767.

Patented Aug. 23, 1887.



WITNESSES:

F. M. Andle
C. Sedgwick

INVENTOR:

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BY

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UNITED STATES PATENT OFFICE.

FRANK HELLER, OF OAKLAND CITY, INDIANA.

AIR-HEATER.

SPECIFICATION forming part of Letters Patent No. 368,767, dated August 23, 1887.

Application filed March 11, 1887. Serial No. 230,538. (No model.)

To all whom it may concern:

Be it known that I, FRANK HELLER, of Oakland City, in the county of Gibson and State of Indiana, have invented a new and Improved
5 Air-Heater, of which the following is a full, clear, and exact description.

This invention relates to the construction of a tool that is applicable for use in the heating of the shellac, &c., that is used for setting or
10 fastening roller-jewels, pallet-stones, &c., the object of the invention being to provide a means whereby a blast of hot air may be delivered against the shellac without subjecting the surrounding parts to the action of the
15 flame by which the heat is produced; and to this end the invention consists of a pipe wherein air forced from the nozzle of the pipe is caused to take a tortuous passage prior to issuing from the nozzle of the pipe, the metal in which
20 the tortuous passage is formed being so arranged that it may be subjected to the action of heat from any source—as, for instance, the flame of a lamp—prior to the time when a blast from the pipe is to be delivered.

25 Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a central longitudinal sectional
30 view of my improved form of air-heater. Fig. 2 is a similar view of a modified construction, the pipe proper being, however, in this case shown in full lines; and Fig. 3 is a view of a still further modification, wherein a tortuous
35 passage is formed in the body of a ball of metal.

In constructing an air-heater that shall be applicable for use as above set forth I form several twists or coils in the discharge end of
40 the pipe, as is shown at 11 in Fig. 1, and these twists or coils I insert within a ball or jacket,

12, of metal, the nozzle of the air-heater projecting outward through a proper opening formed in the ball or jacket; or, if desired, the smaller end of the mouth-piece, which mouth-
45 piece is shown at 10, might be connected to a ball in which there was formed a tortuous air-passage leading to a discharge-orifice, to which there would be affixed a nozzle, as shown in Fig. 3; or, if desired, a simple coil could
50 be made in the end of the pipe and this coil could be surrounded by an inner jacket, 13, and an outer jacket or ball, 14, as is illustrated in Fig. 2, the main object of the invention being to cause the air forced through the air-
55 heater to take a tortuous course through a body of heated metal prior to the time it issues from the nozzle of the air-heater.

In using my improved form of air-heater the ball or jacket 14 is heated and then air is
60 forced through the pipe. The jet is projected against the part to be operated upon, becoming sufficiently heated prior to issuing from the discharge-nozzle.

Having thus fully described my invention, 65 I claim as new and desire to secure by Letters Patent—

1. The combination, with an air-pipe, of a ball or jacket arranged in connection with its discharge-orifice, a tortuous passage being ar-
70 ranged within the ball or jacket and connected with the bore or chamber of said pipe, substantially as described.

2. An air-heater in which the discharge end of the tube is bent upon itself or coiled and
75 inclosed within a jacket, substantially as described.

FRANK HELLER.

Witnesses:

R. C. BURBA,
J. H. BENTON.