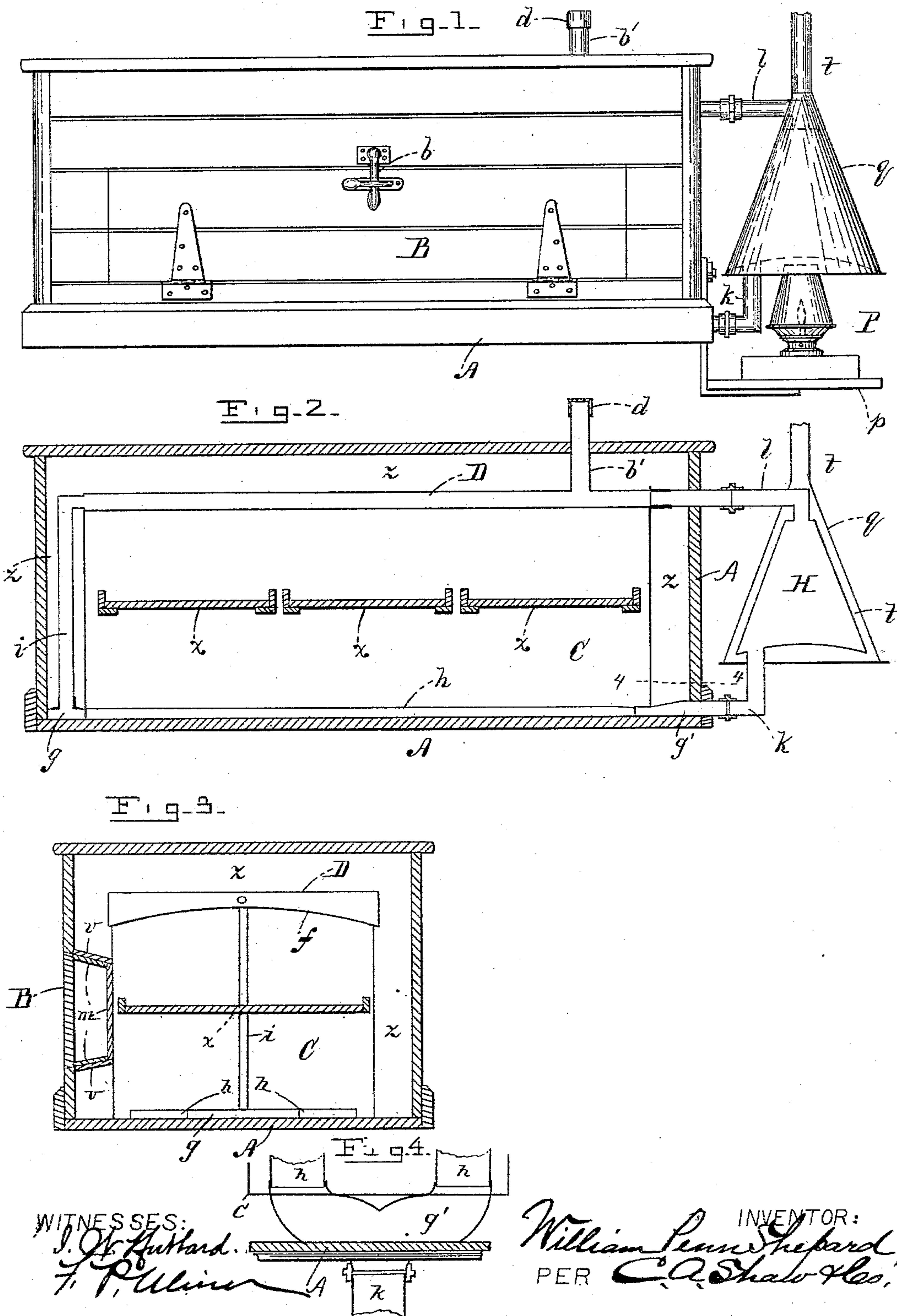


(No Model.)

W. P. SHEPARD.
INCUBATOR.

No. 387,742.

Patented Aug. 14, 1888.



UNITED STATES PATENT OFFICE.

WILLIAM PENN SHEPARD, OF FALL RIVER, MASSACHUSETTS, ASSIGNOR OF
THREE-FOURTHS TO MATTHEW C. YARWOOD, PARKER BORDEN, AND
ROLAND G. BUFFINGTON, OF SAME PLACE.

INCUBATOR.

SPECIFICATION forming part of Letters Patent No. 387,742, dated August 14, 1888.

Application filed December 30, 1887. Serial No. 259,365. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM PENN SHEPARD, of Fall River, in the county of Bristol, State of Massachusetts, have invented a certain new and useful Improvement in Incubators, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which said invention appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevation of my improved incubator; Fig. 2, a vertical longitudinal section of the same, and Fig. 3 a vertical transverse section. Fig. 4 is a detail plan of the Y connecting the two ends of the flat-bottom pipes.

Like letters and figures of reference indicate corresponding parts in the different figures of the drawings.

My invention relates more especially to that class of incubators in which hot water is employed to maintain the heat in the hatching-chamber; and it consists in certain novel features, as hereinafter fully set forth and claimed, the object being to produce a simpler and more effective device of this character than is now in ordinary use.

The nature and operation of the improvement will be readily understood by all conversant with such matters from the following explanation.

In the drawings, A represents the body or case of the incubator, which is provided with the usual egg trays or slides, *x*, in its interior, and a hinged door, B, in its side, said door being locked by a clasp or catch, *b*.

The egg-trays *x* are disposed within an inner case or chamber, C, the walls of which form, with the walls of the body A, the air-space or insulating-chamber *z*, usual in incubators of this class.

Inclined or converging partitions *v* extend from the door B to an opening in the case C, said door being provided with an inwardly-projecting portion, as shown at *m*, which is so constructed as to tightly fit the space between said partitions.

The top of the inner case, C, consists of a hot-water tank, D, the bottom of which curves upward, as shown at *f* in Fig. 3, so that the heat from said tank will radiate toward the center of the case C. A vertical pipe, *b'*, enters the tank D, passes upward through the body A, and is closed by a screw-cap, *d*, said pipe serving as a supply-pipe, through which the tank may be filled with water. Two flat-pipes, *h*, are disposed longitudinally on the bottom of the case C and extend into the air-chamber *z* at the rear end of said case, as shown in Fig. 2, where they are connected by a short cross-pipe, *g*, and by a vertical pipe, *i*, leading upwardly therefrom, with the tank D, said pipes *h* forming the induction-pipes of a boiler, H, hereinafter described. The pipes *h* also extend into the air-chamber *z* at the front end of said case, and a branch pipe or Y, *g'*, connects their ends with the single pipe *k* in the well-known manner, as shown in detail in Fig. 4.

A conical boiler, H, is disposed outside the case A at the end opposite the pipe *i*, said boiler being supported in position by a pipe, *k*, one end of which is connected with the induction-pipes *h* and the other entering the bottom of the boiler, and by a pipe, *l*, connected with the tank D and entering the boiler at the top, as best shown in Fig. 2, said pipe *l* forming the eduction-pipe of the boiler.

A lamp, P, by which the heat is imparted to the water in the boiler, is disposed on an adjustable bracket, *p*, on the body A, in such a position that the chimney of the lamp will stand under the center of the boiler. A conical or funnel-shaped jacket, *q*, is secured on the pipe *l* and so arranged that it embraces or surrounds the boiler, leaving an opening, *t*, between it and said boiler, which forms an annular flue for the heated air and also for the smoke and products of combustion from the lamp. A regulating device for regulating the flame of the lamp is secured to the end of the case A, adjacent to said boiler.

In the use of my improvement the lamp P on the stand *p* being lighted and adjusted under the boiler H, the water in the boiler will be heated and pass through the eduction-pipe

l into the tank D, thence through the vertical pipe *i*, induction-pipes *h*, and pipe *k* into the boiler, to be again reheated. The hot water in the tank D and said pipes furnishes heat
5 for the eggs in the trays *x*.

Having thus explained my invention, what I claim is—

1. In an incubator of the character described, the body A, having the door B, the case C,
10 provided with the tank D, having the filling-pipe *d*, the pipes *h*, connected with said tank by the pipes *g* and *i*, the cone-shaped boiler H, the pipes *l k g'*, for connecting said boiler with the tank D and pipes *h*, the funnel-shaped
15 jacket *q*, and lamp P, all being constructed, combined, and arranged to operate substantially as set forth.

2. In an incubator of the character described, the body A, case C, disposed within said body,
20 and provided with the tank D, having the curved bottom *f* and filling-pipe *d*, the pipes *h*, disposed at the bottom of said body and connected with the tank D by the pipes *g* and

i, the trays *x*, the conical boiler H, pipes *l k g'*, connecting said boiler with said tank and the
25 pipes *h*, the funnel-shaped jacket *q*, lamp P, and bracket *p*, combined and arranged to operate substantially as described.

3. In an incubator of the character described, the body A, provided with the door B and
30 chamber C, the trays *x*, disposed in said chamber, the tank D, provided with the filling-pipe *b* and having the concaved bottom *f*, the pipes *h*, connected with the tank D by the pipes *g* and *i*, the conical boiler H, connected
35 with the tank D by the pipe *l*, and with the pipes *h* by the pipes *g'* and *k*, the conical jacket *q* for the boiler H, the lamp P, disposed beneath said boiler, and the bracket *p*, attached to the body A, all combined and arranged to
40 operate substantially as described.

WILLIAM PENN SHEPARD.

Witnesses:

O. M. SHAW,
C. A. SHAW.