

E. A. BRACKETT.
FISH-HATCHING APPARATUS.

No. 173,262.

Patented Feb. 8, 1876.

Fig. 1.

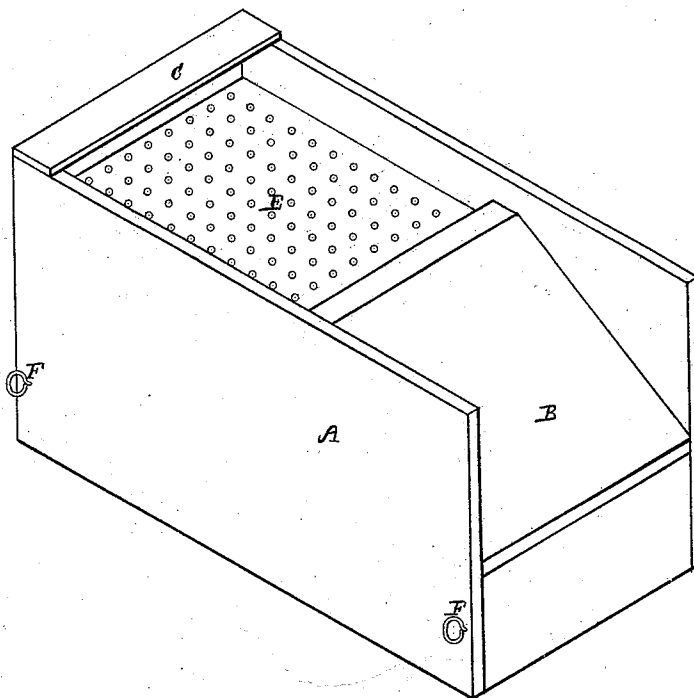
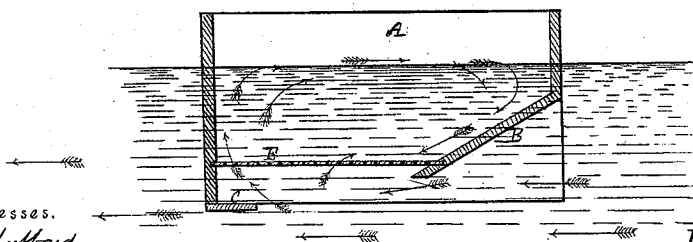


Fig. 1.



Witnesses.
J. B. Hubbard
W. E. Boardman.

Edward A. Brackett,
H. Curtis, Atty.

UNITED STATES PATENT OFFICE.

EDWARD A. BRACKETT, OF WINCHESTER, ASSIGNOR OF ONE-THIRD OF HIS
RIGHT TO FREDERICK CURTIS, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN FISH-HATCHING APPARATUS.

Specification forming part of Letters Patent No. **173,262**, dated February 8, 1876; application filed
April 17, 1875.

To all whom it may concern:

Be it known that I, EDWARD A. BRACKETT, of Winchester, Middlesex county, Massachusetts, have invented an Apparatus for Incubating and Hatching Fish-Spawn, of which the following is a specification:

The apparatus upon which my improvements are founded consists, in general terms, of a rectangular frame or case, whose bottom is reticulated, in order that water may have free access to, and a circulation within, the interior of such case for the purpose of hatching the spawn laid upon said reticulated bottom.

My present improvements consist, first, in partially covering the bottom or lower opening of the frame or case by a sloping or obliquely disposed shield or deflector, and disposing at the opposite side of the bottom of the case a stop-water or shelf, substantially as hereinafter explained, the stop-water serving to intercept and retard the current of water in which the apparatus is submerged, and throw it upward in such a manner as to produce a reverse current backward within the case, and upon or over the sloping deflector before named, from which point the current, thus diverted or reversed, joins, by cohesion with the natural current below, such deflector, and completes the entire circuit of the case or frame, the result being that all the water within the latter is in a state of lively commotion and circulation, which effectually prevents deposit of sediment or undue accumulation of spawn in any one place, which would result in sleepy water or an eddy.

My improvements further consist in the employment in an apparatus of this character of ordinary tin or other metal plate, from which to supply the reticulated portion of the bottom of the case, whereby I greatly economize the cost of the apparatus, and prevent the injury due to the abrasion of the eggs, which a rougher surface would entail.

The drawings accompanying this specification represent in Figure 1 a perspective view of my apparatus as inverted, the better to show its extreme construction, Fig. 2 being a vertical section of said apparatus.

In these drawings, A represents an open frame or case, rectangular in general form,

and having its lower opening partially closed by a sloping plate or deflector, B, placed obliquely to the horizontal plane of the case, this deflector, in the present instance, occupying the entire width, and about one-half the length of the case, though this extent may be varied, as occasion or necessity dictates. At the opposite end of the lower opening of the case A I dispose a narrow transverse shelf, C, which spans the case, as shown in Fig. 1 of the drawings. Within the case A, and near its bottom, and extending from the sloping deflector B to the opposite end of the case, I dispose a foraminous floor or sieve, E, composed preferably of ordinary perforated tin-plate, painted or japanned to prevent corrosion. Upon each of the four outer corners of the case A, and near its top, I place a guide or eye, F, and by means of these eyes the case is to be maintained in its proper position in the water by means of cords run through the eyes and attached to posts or other objects.

The above description embraces substantially the mechanical construction of my hatching-box; but I do not confine myself strictly to the precise construction shown, as this may be varied somewhat without departing from the nature and intent of my invention, the novelty in which consists, mainly, in the sloping deflector, in combination with a suitable reticulated floor, and the shelf or stop water, or its equivalent.

The operation of my apparatus is as follows: The case A is to be submerged within a current of water, or in sleepy water, according to circumstances, it being supported by cords run through the eyes F F, &c., before named, and being of sufficient specific gravity to sink in the water to about the depth shown in Fig. 2 of the drawings.

If the apparatus be placed in running water a portion of the current is intercepted by the shelf, and, impinging against the lower end of the case A, is thrown upward and backward, and flows in a reverse direction across the upper part of the said case A until it arrives at the opposite end of said case, at which point it turns and is drawn downward by the cohesive attraction of the current flowing beneath the deflector B, and joins with such cur-

rent, by this means producing a well-defined, continuous circulation, and a gentle agitation of the water within the case.

The direction taken by the water is shown by arrows in Fig. 2.

Owing to the continuous circulation and the agitation of the water within the case A which results from my construction several important advantages are gained: First, no dead water or eddy exists, and the entire mass of eggs are constantly in a state of gentle agitation and motion, and, as a consequence, are maintained in a bright, clean, and healthy condition; second, no sediment collects or deposits itself, and the water is at all times fresh and pure; third, owing to the employment of perforated or foraminous metal plate whereof to construct the bottom of my case or box, I obtain a smooth floor, which has no tendency to abrade or injure the eggs, which frequently results from the use of wire-cloth sieves, which are now generally used, and, in addition to this merit in the perforated plate, it is of much less cost than wire-cloth.

I would here remark that while I prefer the arrangement of the perforated plate shown in

the drawing, yet the box or case A, with deflector B and stop-water C, can be used with a hatcher or spawn plate otherwise arranged and employed in connection with said parts.

I am aware that it is not new to employ a box or case provided with a reticulated bottom in which to deposit spawn for hatching, as many experiments have been instituted in various countries with such a device.

I claim—

1. The box or case A, in combination with a deflector, B, and shelf or stop-water C, substantially as and for the purposes shown and set forth.

2. The combination, with the case A and the sloping deflector B, of a perforated or foraminous floor or plate, substantially as and for purposes stated.

3. In combination with the case A the deflector B, shelf C, and perforated floor or plate E, all substantially as and for the purposes stated.

E. A. BRACKETT.

Witnesses:

F. CURTIS,

W. E. BOARDMAN.