F. E. RICE.

ANIMAL-TRAP.

No. 181,105. Patented Aug. 15, 1876.

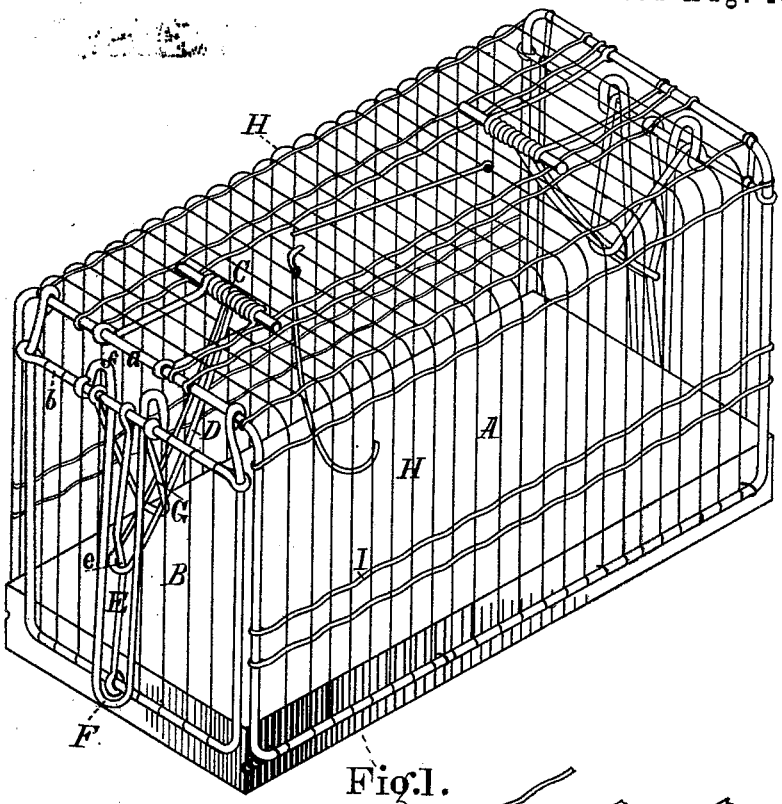

Fig. 1.

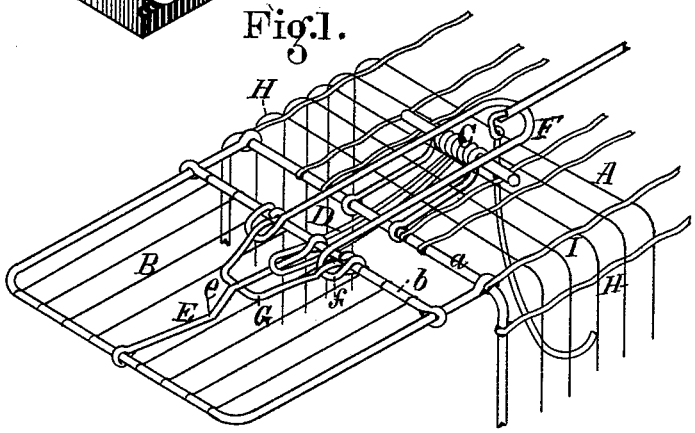

Fig. 2.

Witnesses:

C. G. Keyes.

E. A. Phelps.

Inventor:

Frank E. Rice,

Per

A. K. Spencer, Atty.

UNITED STATES PATENT OFFICE.

FRANK E. RICE, OF LOWELL, MASSACHUSETTS.

IMPROVEMENT IN ANIMAL-TRAPS.

Specification forming part of Letters Patent No. **181,105**, dated August 15, 1876; application filed June 7, 1876.

To all whom it may concern:

Be it known that I, FRANK E. RICE, of Lowell, Massachusetts, have invented certain Improvements in Animal-Traps, of which the following is a specification:

This invention relates, particularly, to devices for locking and unlocking the hinged ends of wire box-traps; and it consists in a hinged door for a trap, provided with an up right bar, bent as shown, in combination with a spring for closing the door, having a long loop embracing the bent bar, and forming a link between said bar and the rod upon which the spiral part of the spring is coiled.

My invention also consists in a swinging lever for opening the door and setting the trap, which lever is pivoted upon the upper part of the hinged door, so that it may drop forward out of the way when the trap is closed, and is formed with a recurved shoulder, which engages with an unlocking device within the trap, to automatically release the loop of the spring from the angle of the bent bar, so that the power of the lever shall be opposed only by the elasticity of the spring, and by gravitation when it is desired to open the door.

The common box-trap is a rectangular wire cage, having hinged doors at the ends, closed by a spring, and frequently provided with a lock in some form; but this lock invariably requires special attention to unlock, being entirely distinct from the lever which opens the door. Again, in ordinary traps the lever by which the door is opened is a stiff double wire projecting several inches above the top of the cage, making an extremely awkward article to pack, and exposing the protruding levers to injury. In my trap the movement of the lever in opening the box automatically unlocks the door, and when locked the handle does not project at all.

In the drawing, Figure 1 is a perspective view of my improved trap closed, and Fig. 2 shows one end of the same with the door open.

A is the trap, and B one of the hinged doors. C is the spring, coiled upon a rod secured to the top of the cage, and having formed integral with it the projecting link D, by which its power is applied to the door through the central bar E, which is bent in reverse obtuse angles near its center, to form a seat for the link. The elasticity of the spring tends to depress the outer end of the link D, and thus to bring the door from the position shown in Fig. 2 to that shown in Fig. 1. This movement changes also the relative positions of the parts D and E, so that the link embraces the bent bar at its lower angle *e*, and that part of the bar E lying between its two angles is substantially perpendicular to the direction of the link. So long as the link and bar are in this position the strength of the wire of which the link is formed, or its resistance to elongation, is opposed to any outward movement of the lower part of the door, for the link thus becomes a tie or a diagonal brace, securing the door by its tenacity, after depressing and closing it by its elasticity as a part of the spring. This double function of the spring-link C D is a peculiar feature of my invention. It forms, in combination with the bent bar E, a simple and secure automatic lock. If preferred, there may be two of these bent bars with a single rod between them projecting from the spring and acting upon both; but the former method is the most convenient. F is the lever for unlocking and setting the trap. It is pivoted loosely upon the wire *b*, forming the upper edge of the door, which wire, is located just beneath the one *a* forming the corner of the cage. The lever is formed with a recurved shoulder, *f*, constituting its shorter arm, which, when the long arm is raised in opening the trap, presses against the bail G, which is a bent wire loosely pivoted by both its ends adjacent to the lever-pivots. Pressure upon this key forces the extremity of the spring-link D from its seat in the lower angle of the bar E backward and upward beyond the upper angle, thus unlocking the door; and as the movement of the lever is continued its short arm presses the key against the inner surface of the door, and as the door swings outward under this pressure the point of contact of the link D and bar E gradually rises upon the bar to the position shown in Fig. 2. The door will thus be opened widely by bringing the lever into a horizontal position upon the top of the trap, where it is held, in the usual way, by a trigger-connection with the bait.

It is obvious that when the lever is released

from this connection, Fig. 2, the spring will close the door, and its projecting member D will immediately lock it by seating itself in the angle *e*, while the pivoted lever will be suspended loosely at the front of the door from the wire *b*, so that neither arm shall project beyond the corners of the trap.

I claim as my invention—

1. The automatic lock for animal-traps herein described, consisting of the bent bar E and link D, substantially as set forth.

2. The combination of the trap A, the hinged door B, provided with the bent bar E, and the spring-link C D, substantially as set forth.

3. The swinging lever F, pivoted on or below the upper corner of the trap, and having the recurved shoulder *f*, in combination with the trap A and hinged door B, substantially as set forth.

4. The lever F *f* and bail G, in combination with the link D, bent bar E, door B, and cage A, substantially as set forth.

FRANK E. RICE.

Witnesses:
E. A. PHELPS,
A. H. SPENCER.