

Stevens & Ruggles.

Agricultural Boiler.

N^o 8,472.

Patented Oct. 28, 1851.

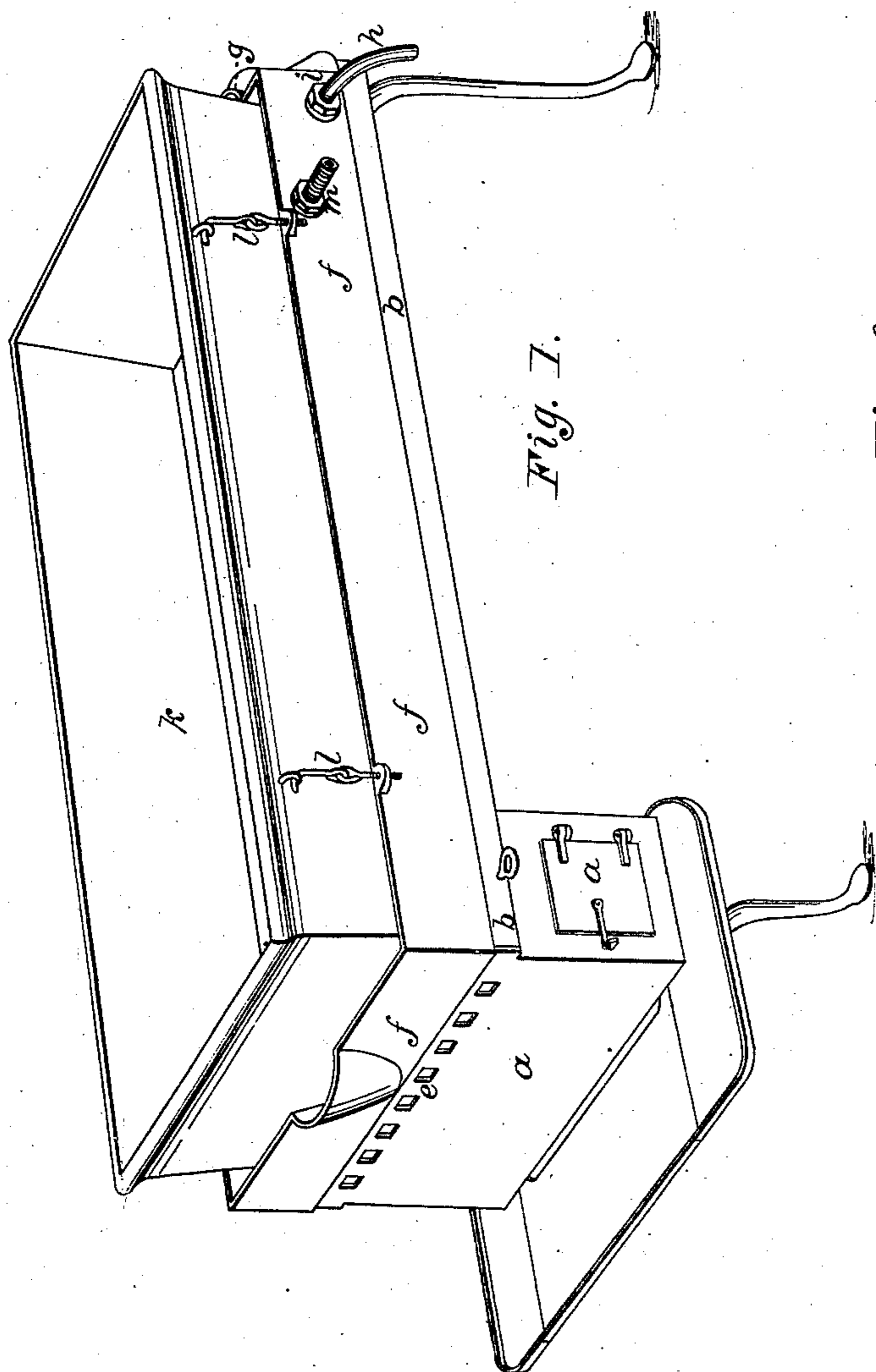


Fig. 7.

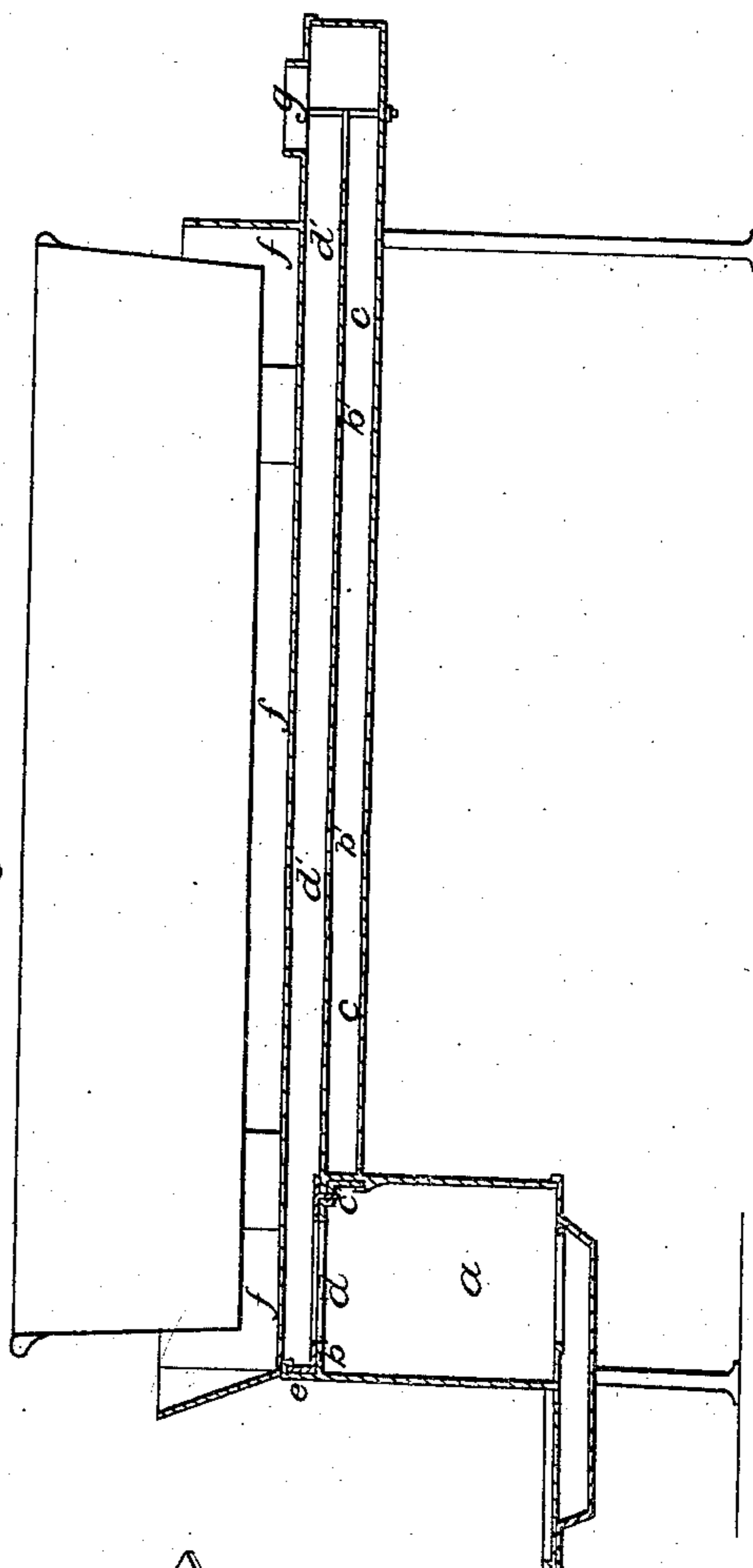


Fig. 2.

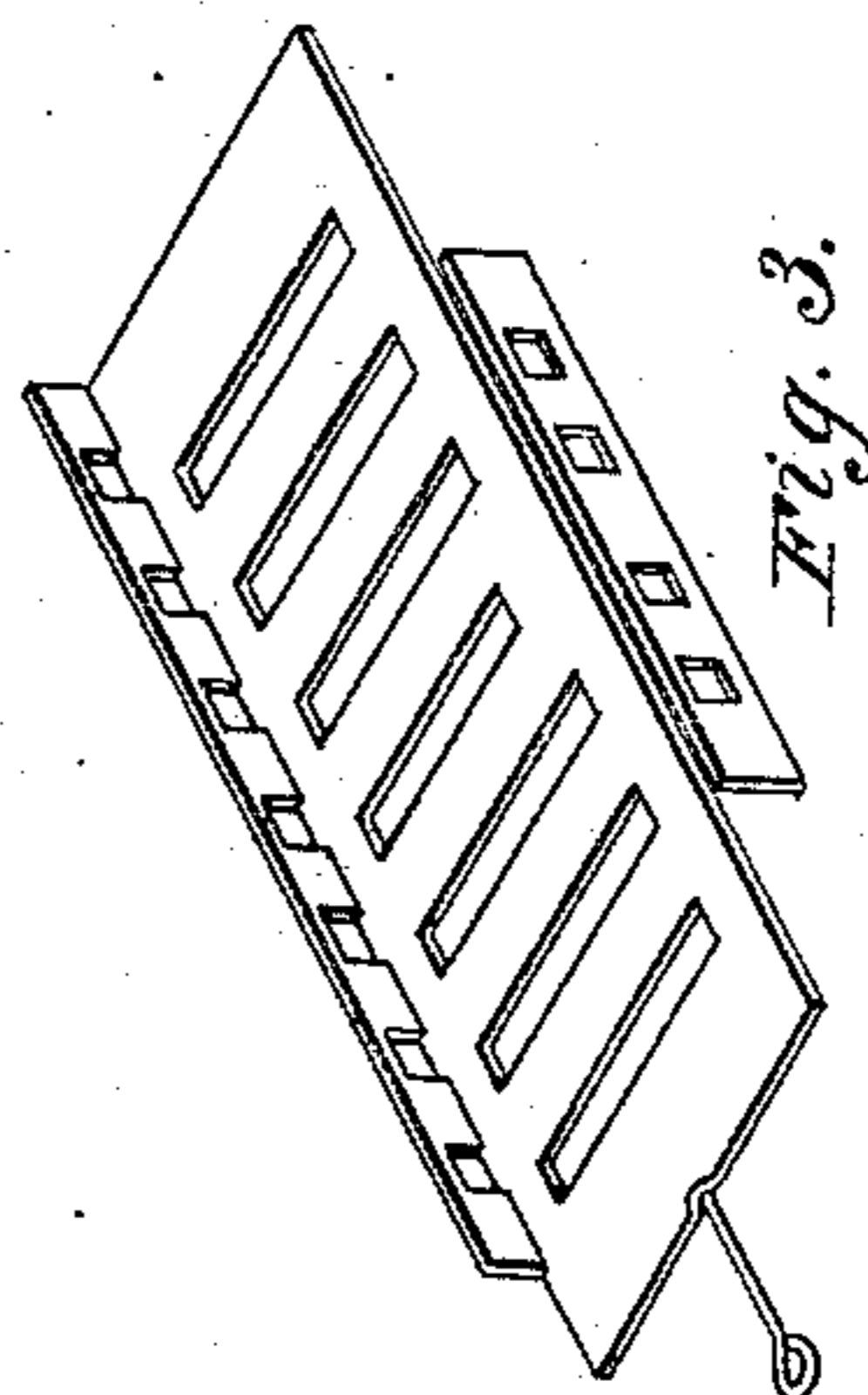


Fig. 3.

UNITED STATES PATENT OFFICE.

JOEL STEVENS AND H. J. RUGGLES, OF WEST POULTNEY, VERMONT.

DAIRY-STOVE.

Specification of Letters Patent No. 8,472, dated October 28, 1851.

To all whom it may concern:

Be it known that we, JOEL STEVENS and H. J. RUGGLES, of West Poultney, in the State of Vermont, have invented certain new and useful Improvements in the Dairy Stove or Heater, and that the following is a full, clear, and exact description of the principle or character which distinguishes them from all other things before known and of the usual manner of making, modifying, and using the same.

Figure 1, is a general view; Fig. 2, a vertical section; Fig. 3, damper detached.

The object of this invention is to furnish for the dairy a perfect, economical, and easily regulated heater for milk, in which it is impossible to burn the milk, and that is so constructed that the heat can at once be thrown off from the milk by the simple movement of a compound valve.

The construction is as follows: An oblong fire box (*a*) with a sunk hearth and grate, like many now in use, and with an end door for wood; has a large top plate (*b*) attached to it, that extends back some six feet, more or less; the whole stands upon legs, two of which are under the fire box, and two under the plate (*b*) near the rear end, as clearly shown in the drawing; the top plate (*b*) has a portion of it from front to back, sunk so as to form a flue (*c*) about one third of the breadth of the plate, extending from the fire box back to the pipe, about to be described; at the front of this recess are openings (*c'*) into the fire box, covered by a lattice damper, hereafter described; another set of openings (*d*) are made through the part of the plate (*b*) that forms the top of the fire box, also covered with a portion of the same damper; the flue (*c*) is covered by proper plates, riveted to plate (*b*) for that purpose; around the upper edge of plate (*b*) there is a flange or rim extending up about two inches, more or less, in the front of which, over the fire box, there is another set of openings (*e*) into the external air; these are closed by the same damper, as the others before named; upon the plate (*b*) thus constructed, a water-pan (*f*) is placed, which rests upon the flanges of plate (*b*), forming

a cover thereto, and leaving a space the whole breadth for a smoke and heat flue, when so used; the sides of this water-pan (*f*) should be about six inches, more or less high; a small portion of the bottom plate of said pan being allowed to project beyond its rim at the end opposite the fire box for forming an opening (*g*) to attach the smoke pipe to; there is a curved pipe (*h*) attached to the water pan at its lower rear corner by means of a stuffing box, so that its end can be turned up or down, thus either drawing off all the water, or holding it at any height the end is elevated to, where it is held by a nut (*i*). Into this water pan there is put a pan (*k*) of tin, zinc, copper, or any suitable material, for containing milk, and of any required capacity; this pan is small enough to leave a space all around the sides between it and the water pan, and it is also raised a little from the bottom that it may have a bath of water on all its sides; this pan may be fastened down by hooks, for greater permanence and safety placed at each corner at (*l*) as shown in the drawing; a pipe from this large pan passes through a stuffing box at (*m*) in the water pan, for the purpose of drawing off the whey from the cheese.

The mode of using this apparatus is as follows—a fire being made in the fire box, the damper, which is constructed so as to close the openings (*e*) in the front and those lettered (*c'*) communicating with the flue (*c*), while the openings (*d*) into the broad flue (*d'*) are open, causes the heat and smoke to come in contact with the bottom of the water pan, and bring its heat up to a proper point; when this is effected it is necessary to shut off the heat, which could not be done without putting out the fire, but for the peculiar arrangement of parts, by sliding back the damper, the openings (*d*) are closed and the heat shut off from the broad flue (*d'*), while at the same operation the openings (*e*) and (*c'*) are uncovered, letting the smoke through the lower flue (*c*) and current of cold air in under the water-pan.

Having thus fully described the improved

apparatus and its mode of construction,
what we claim therein and desire to secure
by Letters Patent, is—

1. The arrangement of the flues and
5 valves in combination with a water-pan and
fire box, substantially in the manner and for
the purpose set forth.
2. The combination of flues and valves as

herein specifically mentioned for the pur-
poses described.

JOEL STEVENS.
H. J. RUGGLES.

Witnesses:

N. ALLEN,
W. O. RUGGLES.