W. L. GILLILAN.

SELF SORTING HOG HOUSE DOOR.

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1,154,760. Patented Sept. 28, 1915.

Fig. 1.

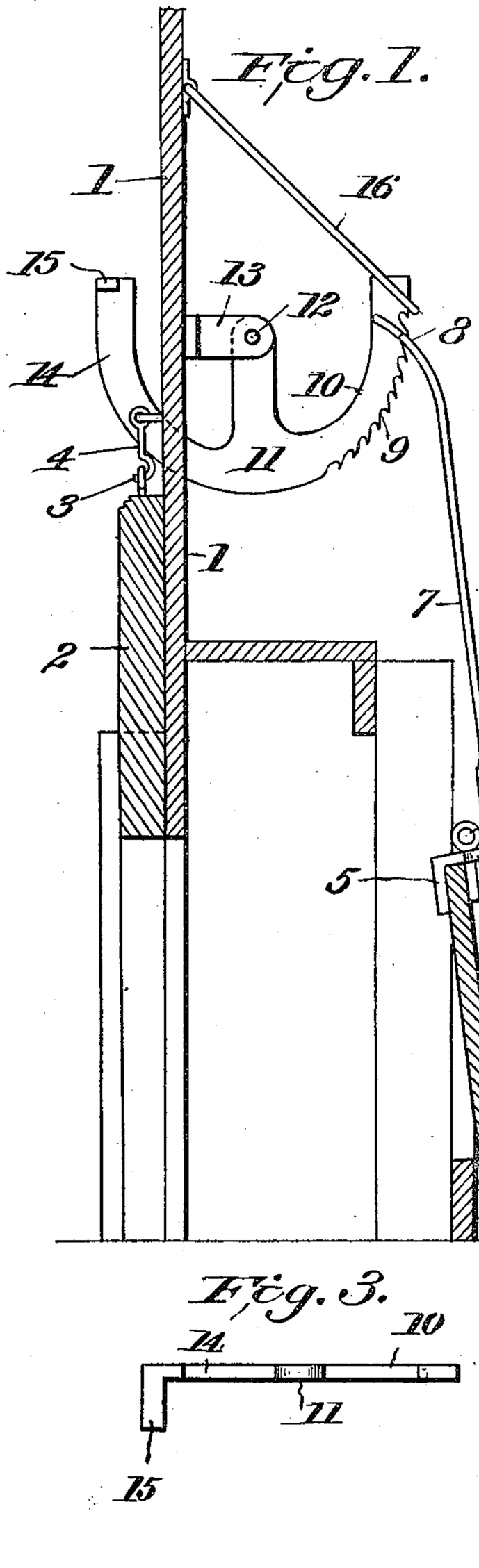

Fig. 2.

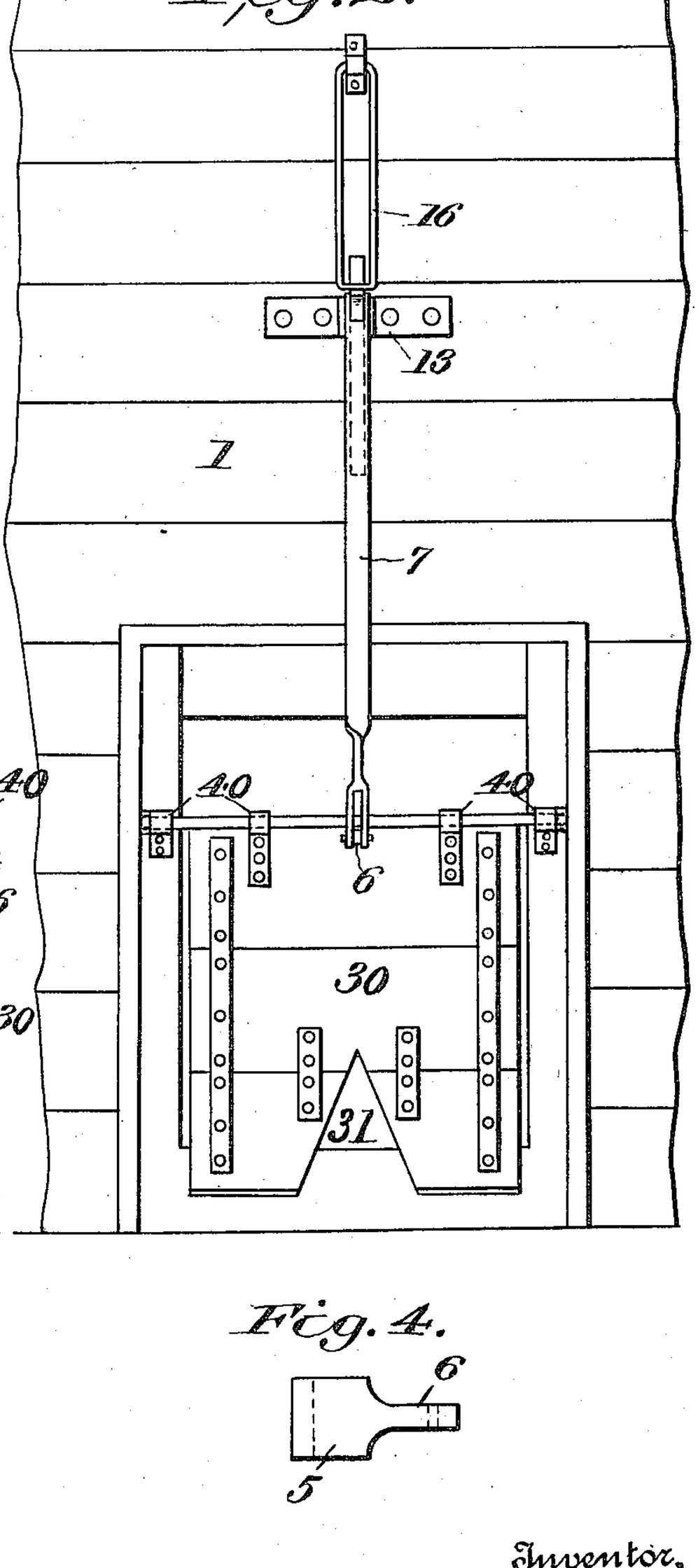

Fig. 3.

Fig. 4.

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SELF-SORTING HOG-HOUSE DOOR.

1,154,760. Specification of Letters Patent. Patented Sept. 28, 1915.

Application filed May 17, 1915. Serial No. 28,701.

To all whom it may concern:

Be it known that I, WILLIAM L. GILLILAN, a citizen of the United States, residing at Potosi, in the county of Grant and State of Wisconsin, have invented a new and useful Improvement in Self-Sorting Hog-House Doors, of which the following is a specification.

This invention relates to pens for live stock and especially to doors for such pens or inclosures, and the object of the invention is to provide means for automatically regulating the number of animals admitted to the pen, thereby preventing overcrowding and loss frequently caused by such conditions.

Another object is to provide a closure which will shut automatically when released, which may be set in open position and which may be released automatically by the entrance of the last of a predetermined number of animals.

A further object is to provide automatic releasing means for such doors which means may be set in advance to admit the desired number of animals and release the door upon the entrance of the last one of said number, said means being capable of being set for admitting different numbers of animals.

The invention will be first hereinafter described in connection with the accompanying drawings, which constitute a part of this specification, and then more specifically defined in the claims at the end of the description.

In the accompanying drawings, wherein similar reference characters are used to designate corresponding parts throughout the several views:—Figure 1 is a vertical sectional view through a gate or closure for pens constructed substantially in accordance with the present invention, Fig. 2 is an inside elevation of the gate, Fig. 3 is a detailed plan view of the pivoted arcuate ratchet piece for automatically releasing the outer door, and Fig. 4 is a detailed plan view of the lever member secured to the inner flap door for actuating the pawl.

The wall of a pen or inclosure for hogs or other live-stock is indicated at 1, the same being provided with an outer sliding door 2 adapted to be supported in raised open position by a hook 4 secured to the wall 1 and engaging a screw-eye 3 on the upper edge of the door 2. When engaged with said screw-eye, the hook faces outward or away from the wall 1, as clearly illustrated in Fig. 1.

Spaced from the outer door, the pen is provided with a second or inner door 30 of the flap type hinged at its upper edge, as at 40. Said flap door may have a notch 31 cut in its lower edge, as shown in Fig. 2, into which the hog may insert his nose for raising the door upon entering the pen. To the upper edge of the flap door, preferably at the middle thereof, a member or casting 5 is secured, the same having an inwardly projecting lever 6 arranged substantially horizontal when the door is closed and at right angles to said door. To the free end of the lever 6 the lower end of an arm 7 is pivoted, said arm extending upward in an inclined position and terminating in a pawl 8 engaging ratchet teeth 9 on the edge of the inner upwardly curved arm 10 of the pivoted member 11. This member 11 is pivoted at 12 to a lug 13 fastened to the inner surface of the wall 1, and has another arm 14 extending outward through said wall and preferably curved upwardly to form a continuation of the arc of the arm 10.

The normal position of the ratchet member 11 is indicated in Fig. 1, the device in this instance being set to admit nine hogs or other animals into the pen. Each time a hog or other animal enters, he is obliged to raise the flap door 30 and each time said door is swung upward in opening, the lever 6 and arm 7 carrying the pawl 8 operate to swing the member 11 the space of one of the ratchet teeth 9. The member 11 is retained at each step by a pivoted loop 16 corresponding to the locking pawl of an ordinary ratchet device. By the time nine hogs or other animals have entered the pen and the flap door has thus been swung upward nine times, the pawl 8 will have engaged the last of the ratchet teeth, and on the last upward movement of the pawl 8 the member 11 will bring an offset finger 15 on the arm 14 of said member into engagement with the hook 4 and release it from the screw-eye 3, whereupon the outer door 2 will drop to closed position by gravity.

It will be understood, of course, that the number of teeth on the arm 10 of the ratchet member 11 may be varied and the position of the offset finger 15 changed with respect to the hook 4, or the proportions of the member 11 otherwise changed in order

to vary the number of animals admitted to the pen before the outer door is released or closed.

The device may also be adjusted to admit any number less than the maximum permitted by setting the member 11 with the retaining loop 16 in engagement with any one of the teeth 9 at the start. For instance, if the device is initially set with the loop 16 in engagement with the fifth tooth counting from the top, the pawl 8 will be in engagement with the seventh tooth, and only four animals will be able to enter the pen before the outer door is automatically released by the finger 15 detaching the hook 4 from the screw eye 3.

Having thus described my invention what I claim and desire to secure by Letters Patent is:

1. The combination with an outer door and means for holding it open, of an inner door, and means operated by the opening of the inner door for automatically releasing the outer door after the inner door has been opened a predetermined number of times.

2. The combination with an outer door and means for holding it open, of an inner door, and adjustable means operated by the opening of the inner door for releasing the outer door after the inner door has been opened a predetermined number of times.

3. The combination with a sliding door and means for holding it open, of a flap door, and means operated by the opening of the flap door for releasing the sliding door after the flap door has been opened a predetermined number of times.

4. The combination with a vertically sliding door, of means for supporting said door in raised open position, another door, and means operated by the opening of the latter door for releasing the sliding door when the second door has been opened a predetermined number of times.

5. The combination with a vertically sliding door, of means for supporting said door in raised open position, a flap door, and means operated by the opening of said flap door for releasing the sliding door when said flap door has been opened a predetermined number of times.

6. The combination with a self-closing door and means for holding it open, of a flap door, a ratchet device having means for automatically releasing the first mentioned door when said device is moved to a predetermined position, and a pawl operatively connected to said flap door and engaging said ratchet device for moving the latter a certain distance each time said flap door is swung open.

7. The combination with a self-closing door and means for holding it open, of a flap door, a ratchet device having a finger extending into the path of said holding means and adapted to disengage said means from the first mentioned door when said ratchet device is moved a predetermined distance, and a pawl carried by the flap door and acting upon said ratchet device for moving the latter a certain distance each time said flap door is swung open.

8. The combination with a self-closing door, of a hook for holding it open, a flap door, a ratchet device having a finger extending into the path of said hook and adapted to disengage it from the first mentioned door when said ratchet device is moved a predetermined distance, and a pawl carried by the flap door and acting upon said ratchet device for moving the latter a certain distance each time said flap door is swung open.

9. The combination with a self-closing door and means for holding it open, of a flap door, a pivoted ratchet device having ratchet teeth and an offset finger, the latter adapted to disengage the first mentioned door from the holding means when said ratchet device is turned a predetermined distance, and a pawl carried by the flap door and acting upon the teeth of said ratchet device for moving the latter a certain distance each time the flap door is swung open.

10. The combination with a self-closing door and means for holding it open, of a flap door, a ratchet device having means for automatically disengaging said holding means from the first mentioned door when said device is moved a predetermined distance, a pawl carried by the flap door and acting upon the ratchet device for moving the latter a certain distance each time said flap door is swung open, and a looped retainer engaging the teeth of the ratchet device for holding the same after each movement and by means of which said device may be set in different positions for varying the number of times the flap door must be swung open before the other door is released.

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