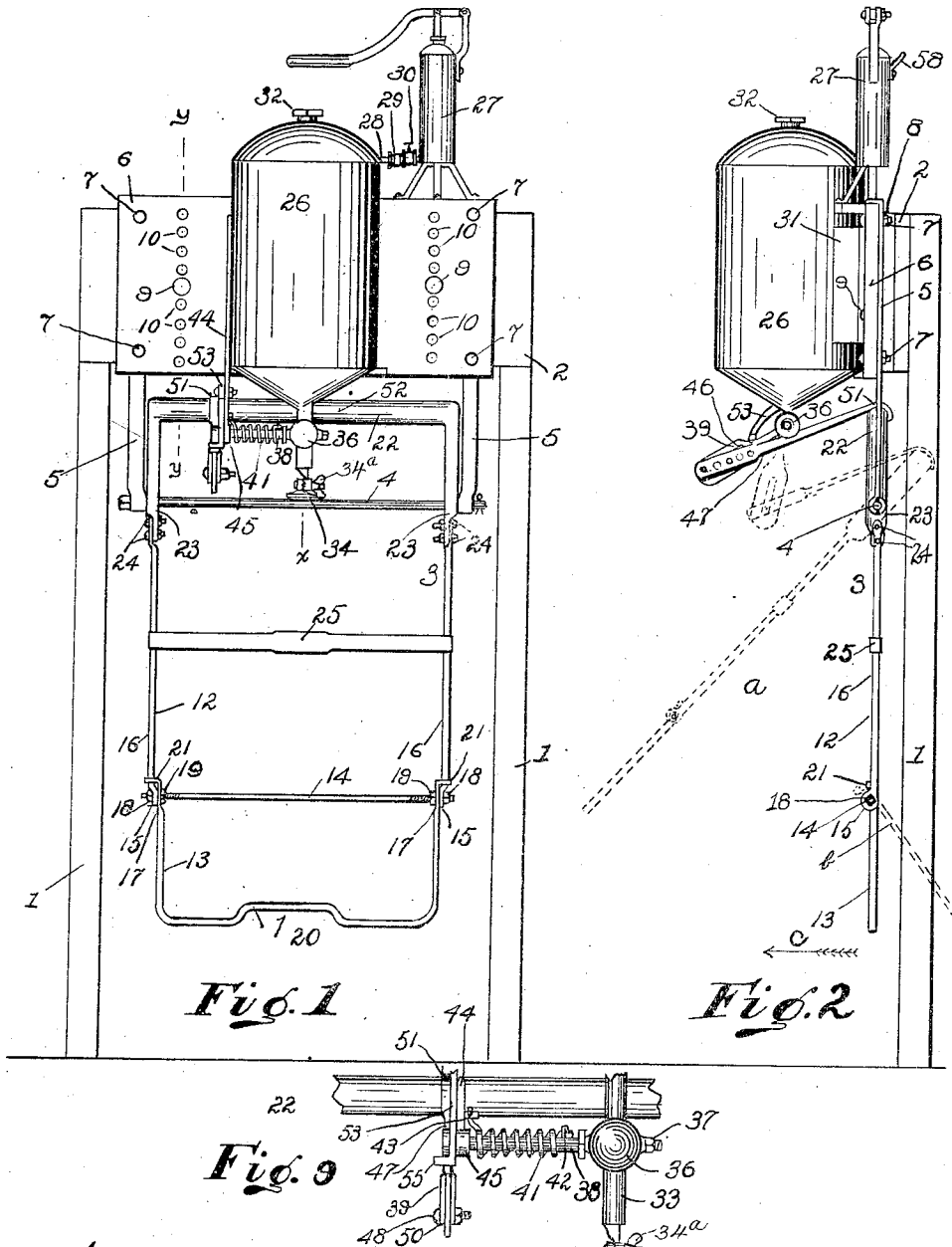


No. 876,458.

PATENTED JAN. 14, 1908.

H. HOLLOWELL.
AUTOMATIC SPRAYING DEVICE FOR STOCK.
APPLICATION FILED JAN. 13, 1907.

2 SHEETS—SHEET 1.



Witnesses
W. H. Hughes.
Cordelia O'Searn.

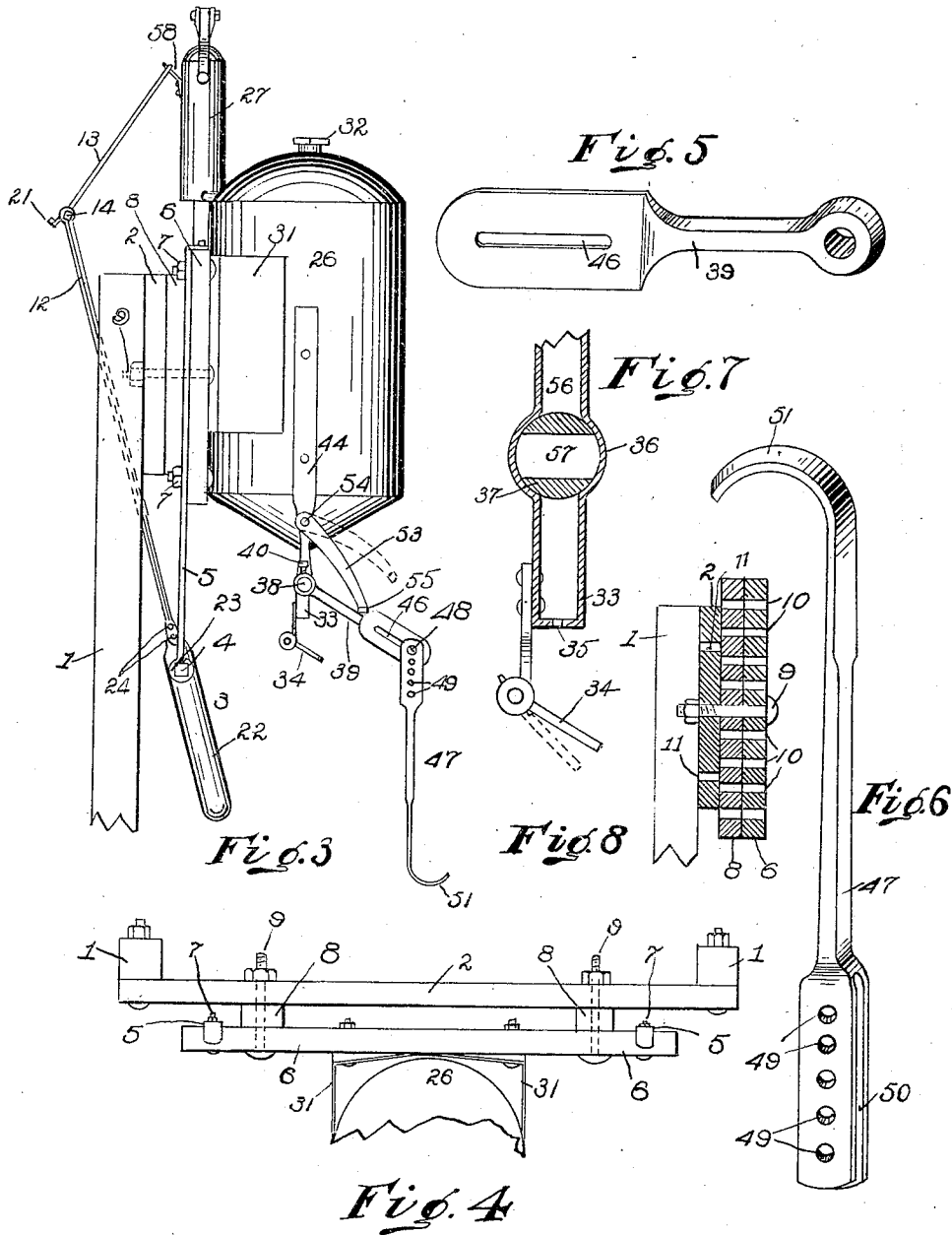
Inventor
Henderson Hollowell,
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No. 876,458.

PATENTED JAN. 14, 1908.

H. HOLLOWELL.
AUTOMATIC SPRAYING DEVICE FOR STOCK.
APPLICATION FILED JAN. 18, 1907.

2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

HENDERSON HOLLOWELL, OF WHITEWATER TOWNSHIP, FRANKLIN COUNTY, INDIANA.

AUTOMATIC SPRAYING DEVICE FOR STOCK.

No. 876,458.

Specification of Letters Patent.

Patented Jan. 14, 1908.

Application filed January 18, 1907. Serial No. 352,881.

To all whom it may concern:

Be it known that I, HENDERSON HOLLOWELL, a citizen of the United States, residing in Whitewater township, Franklin county, Indiana, have invented certain new and useful Improvements in Automatic Spraying Devices for Stock, of which the following is a specification.

My invention relates to spraying devices for stock, such as hogs, sheep or the like, so arranged that the stock may automatically operate the sprayer for causing a spray of disinfectant, insecticide or the like, to play upon the stock.

It is the object of my invention to provide a new and improved automatic sprayer adapted to be operated by the stock when passing thereunder in one direction, but to remain inoperative when the stock passes thereunder in the opposite direction, and my invention consists in instrumentalities employed for said purpose, and in the parts, and in the construction, arrangement and combinations of parts hereinafter more fully described and claimed.

In the drawings: Figure 1 is a front elevation of my improved device. Fig. 2 is a side elevation of the same, showing the swinging gate in dotted lines in assumed position, as indicated at *a*, for operating the spray, and also showing the lower section of the gate in assumed position in dotted lines, as indicated at *b*, indicating how this lower section may be swung without affecting the spray. Fig. 3 is a side elevation of my improved device with its supporting posts broken away and showing the gate swung into and retained in in-operative position. Fig. 4 is a plan view, partly broken away, showing the means for attaching the apparatus to posts of an inclosure, the pump being removed. Fig. 5 is a detail in perspective showing the slotted valve-arm. Fig. 6 is a separated view in perspective of the connecting link between the valve-arm and gate. Fig. 7 is a cross-section of the valve and spraying nozzle taken on the line *x* of Fig. 1. Fig. 8 is a cross-section on the line *y-y* of Fig. 1 showing the means for adjusting the gate to height; and, Fig. 9 is an enlarged view of the valve-mechanism.

1 1 represent the gate-posts of an inclosure, at the upper end of which posts there is a board 2.

3 is a swinging gate pivoted on a rod 4, supported at the lower ends of depending bars 5. The bars 5 are attached to a board 6 by bolts 7. Cleats 8 are secured at the back of the board 6. Near each end of the board 6 a bolt 9 passes through one of a series of apertures 10 in said board and one of the cleats, and through anyone of a series of apertures 11 in the board 2. The height of the lower end of the swinging gate above the ground is determined by selecting the apertures 10 and 11 through which the bolts shall pass, thereby adjusting the gate to height for accommodating different classes of stock.

The gate 3 comprises a primary gate 12 and a subgate 13 suspended therefrom. The subgate swings upon the primary gate on a rod 14, the rod passing through bearings 15 at the bottoms of side bars 16 of the primary gate and through bearings 17 of the subgate, nuts 18 19 being threaded to each end of the rod for positioning the parts laterally. The subgate comprises preferably a metal bar of approximate U-shape. This bar is provided at its bottom with a recess 20 to which the stock will naturally go in passing the gate, thereby directing the stock under the spray. The upper end of the subgate is provided with lugs 21 extending laterally across the front of the side-bars 16 so that when stock is passing said gate in the direction of the arrow *c* (Fig. 2), the subgate will carry the primary gate with it when the stock makes contact with the subgate and moves the same while passing thereunder. If however the stock passes said gate from the opposite direction, the subgate will swing upon the rod 14 without operating the primary gate and therefore not operating the spray.

The upper end of the primary gate is formed of an inverted U-shaped heavy balance-piece 22, the bar 4 passing through apertures in the legs 23 of said piece 22 for forming the pivot for the gate, the said apertures being adjacent the lower ends of said legs. The side-bars 16 are secured to said balance-piece by bolts 24, a strengthening connecting-bar 25 connecting the side-bars intermediately of their ends. The weight of the balance-piece 22, which is preferably a casting, is so proportioned with relation to the weight of the gate and the pivot of the gate, that the gate will normally hang in upright position, the weight of the casting however acting as

a balance upon the lower end of the gate for preventing precipitous return of said lower end to normal position and thereby preventing injury to following stock.

26 is a tank or container for the disinfectant, insecticide or other substance it is desired to spray upon the stock. This substance is in liquid form and may flow or be sprayed upon the stock by gravity, or if desired the spraying may be accomplished under pressure. If accomplished under pressure, I prefer to provide a pressure pump 27 which connects with the upper end of the tank by a pipe 28, a check valve 29 being located in the pipe which may also have a stop-valve 30 therein. The pump is preferably mounted on the board 6 from which the gate is suspended so as to be adjusted with the gate and container. The container is secured to the board 6 by a bracket 31.

32 is a plug for closing the receiving opening of the tank.

33 is a nozzle which may be of suitable form for comminuting the liquid to suitable extent. If the liquid is ejected under pressure, I prefer to have an adjustable leaf 34 at the nozzle for breaking the stream which may be ejected from the opening 35 into a spray, the adjustable leaf being clamped in place by a thumb-nut 34^a.

36 is a valve, to the plug 37 of which a stem 38 is secured. A valve-arm 39 is secured in suitable relation to the stem by a bolt 40. A spring 41 is coiled about the stem for normally closing the valve, one end of the spring being received about a pin 42 on the valve-stem, the other end of the spring being received by a pin 43 on a bearing-arm 44. This bearing-arm has a bearing 45 at its lower end in which the valve-stem oscillates. The valve-arm 39 is provided with a slot 46. A link 47 is articulated with the valve-arm by a bolt 48 passing through one of a series of apertures 49 in the link and said slot 46. The swinging end of the valve-arm is preferably flat and the link 47 has a flat bifurcated end 50 for receiving said swinging end. The link at its other end has a hook 51 which contacts the rear face of the connecting web 52 of the balance-piece 22. The valve-arm, link and hook, in the form shown, form a connection and catch therefor operatively disposed between the valve and balance-piece 22. When the connecting web swings forward it moves the link and operates the spray, the backward movement of the connecting web however permitting the spray to remain inoperative.

53 is a stop-arm adjustably secured to the bearing arm 44 by a bolt 54, the stop-arm having a lug 55 projecting across the path of the valve-arm 39, against which lug the valve-arm is normally pressed by the spring 41. The valve has a passage 56 there- through communicating with the nozzle 33.

The valve-plug has a passage 57 there-through.

When the valve is closed, the passage 57 is at right angles to the passage 56, the body of the valve-plug closing said passage 56. Some rotation of the valve-plug will be required prior to the registering of said passages. If now it is desired to more quickly initiate the opening of said valve upon contact of the gate by stock, the stop-arm 53 is swung upon its bolt for depressing the lug 55 so that the valve-arm will be sooner arrested in its return to normal position, the normal position being the closed position of the valve. The bolt 48 is also inserted into an aperture nearer the hook-end of the link, corresponding with the new position of the valve-arm, so that the hook of the link may contact the rear face of the upper end of the gate when the latter is in upright position. When now the lower end of the gate is contacted by stock passing in the direction of the arrow *c* the spraying will be sooner initiated than if a greater swing were permitted the valve-arm. If on the contrary it is desired to delay the spraying, the stop-arm 53 is positioned for permitting a full closure of the valve and the bolt 48 may also be inserted into one of the apertures 49 nearer the rear end of the hook-arm so that when the gate is swung the shank of the bolt may first slide in the slot 46, the movement of the nozzle-valve being initiated when said bolt reaches the end of said slot, the stock in the meantime partially swinging said gate for passing under the nozzle.

If it is desired to temporarily throw the gate out of commission it may be swung upon the rod 4 until the subgate is raised above the pivot of the primary gate, the subgate being retained in raised position as by a hook 58 on the pump. The gate is made of rods and bars so as to be open to permit the spray or flow of fluid to readily reach the animal.

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

1. In an automatic spraying device for stock, the combination of a jointed gate comprising an upper member and a lower member hinged together, a container, a valve therefor, and a connection between said valve and gate for operating said valve, the joint of said gate causing the members thereof to move together when the lower member is pushed from one side and permitting said lower member to move independently of the upper member when pushed from its other side by stock.

2. In an automatic spraying device for stock, the combination of a pivoted gate having an extension above its pivot, a container, a valve therefor, and a connection

and catch therefor operatively disposed between said valve and said extension for opening said valve and operating the spray when said extension is swung in one direction, the movement of said extension in the opposite direction being away from said catch for permitting said valve to remain unopened, substantially as described.

3. In an automatic spraying device for stock, the combination of a primary gate, a subgate hung therefrom, a lug between said gates for causing said gates to move together in one direction and permitting independent movement of said subgate in the other direction, said subgate having an upwardly extending recess in the middle of its lower end, a pivot from which said primary gate is hung, said gates having a counterbalancing upper end above said pivot, a container, a valve therefor, a valve-arm secured to said valve and a link articulated to said valve-arm and having connection with the counterbalancing upper end of said gate, substantially as described.

4. In an automatic spraying device for stock, the combination of a gate-support, a primary gate pivoted thereto having an extension above its pivot, a subgate pivoted at the lower end of said primary gate, a lug between said gates for causing common movement of said gates when said subgate is pushed in one direction and permitting independent movement of said subgate when pushed in the other direction, a container, a valve therefor, a valve-arm for said valve, and a link between said valve-arm and extension, substantially as described.

5. In an automatic spraying device for stock, the combination of a gate-support, a primary gate pivoted thereto having an extension above its pivot, a subgate pivoted at the lower end of said primary gate, a lug between said gates for causing common movement of said gates when said subgate is pushed in one direction and permitting independent movement of said subgate when pushed in the other direction, a container, a valve therefor, a valve-arm for said valve, and a link between said valve-arm and extension, said link having adjustable connection with said valve-arm, substantially as described.

6. In an automatic spraying device for stock, the combination of a gate-support, a primary gate pivoted thereto having an extension above its pivot, a subgate pivoted at the lower end of said primary gate, a lug between said gates for causing common movement of said gates when said subgate is pushed in one direction and permitting independent movement of said subgate when pushed in the other direction, a container, a valve therefor, a valve-arm for said valve, a connection between said extension and valve-arm, posts and a cross-bar therefor,

said cross-bar and gate-support having a series of apertures therebetween and bolt connections through said apertures for permitting adjustment up and down of said gate, substantially as described.

7. In an automatic spraying device for stock, the combination of a gate-support, a primary gate pivoted thereto having an extension above its pivot, a subgate pivoted at the lower end of said primary gate, a lug between said gates for causing common movement of said gates when said subgate is pushed in one direction and permitting independent movement of said subgate when pushed in the other direction, a container, a valve therefor, a valve-arm for said valve, a connection between said extension and valve-arm, posts and a cross-bar therefor, said cross-bar and gate-support having a series of apertures therebetween and bolt connections through said apertures for permitting adjustment up and down of said gate, and a pump on said support movable with said support, substantially as described.

8. In an automatic spraying device for stock, the combination of a gate-support, a primary gate pivoted thereto having an extension above its pivot, a subgate pivoted at the lower end of said primary gate, a lug between said gates for causing common movement of said gates when said subgate is pushed in one direction and permitting independent movement of said subgate when pushed in the other direction, a container, a valve therefor, a valve-arm for said valve, and a link between said valve-arm and extension, said valve-arm having a slot therein and said link having a plurality of apertures, and a pin selectively passing through said apertures and slot, substantially as described.

9. In an automatic spraying device for stock, the combination of a gate-support, a primary gate pivoted thereto having an extension above its pivot, a subgate pivoted at the lower end of said primary gate, a lug between said gates for causing common movement of said gates when said subgate is pushed in one direction and permitting independent movement of said subgate when pushed in the other direction, a container, a valve therefor, a valve-arm for said valve, and a link between said valve-arm and extension, said valve-arm having a slot therein and said link having a plurality of apertures, a pin selectively passing through said apertures and slot, and an adjustable stop for limiting retraction of said valve-arm, substantially as described.

10. In an automatic spraying device for stock, the combination of a gate-support, a primary gate pivoted thereto having an extension above its pivot, a subgate pivoted at the lower end of said primary gate, a lug

between said gates for causing common movement of said gates when said subgate is pushed in one direction and permitting independent movement of said subgate when
5 pushed in the other direction, a container, a valve therefor, a valve-arm for said valve, and a link between said valve-arm and extension, said gate swinging upon its pivot for permitting said subgate to be swung into

a position above said pivot of said primary 10 gate, substantially as described.

In testimony whereof I have subscribed my name hereto in the presence of two subscribing witnesses.

HENDERSON HOLLOWELL

Witnesses:

MAX B. MAY,

W. K. HUGHES.