Oct. 29, 1963 T. ALBERS 3,108,574

COW WASHING DEVICE

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Fig. 1

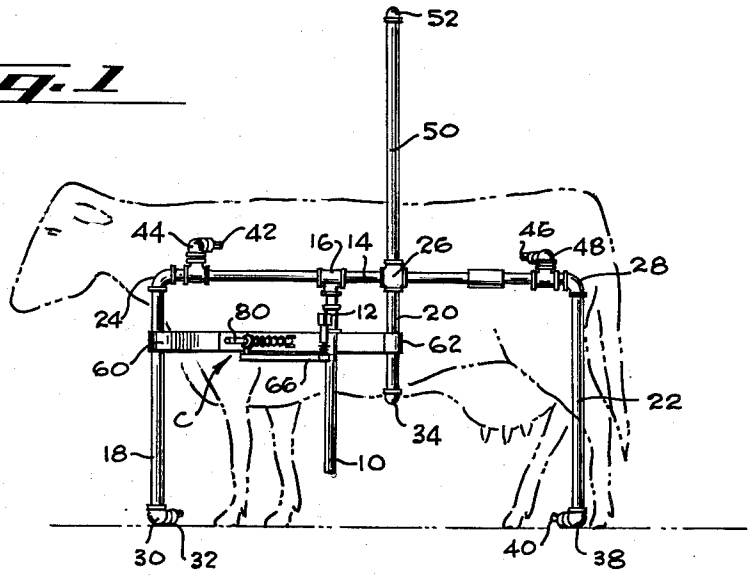


Fig. 5

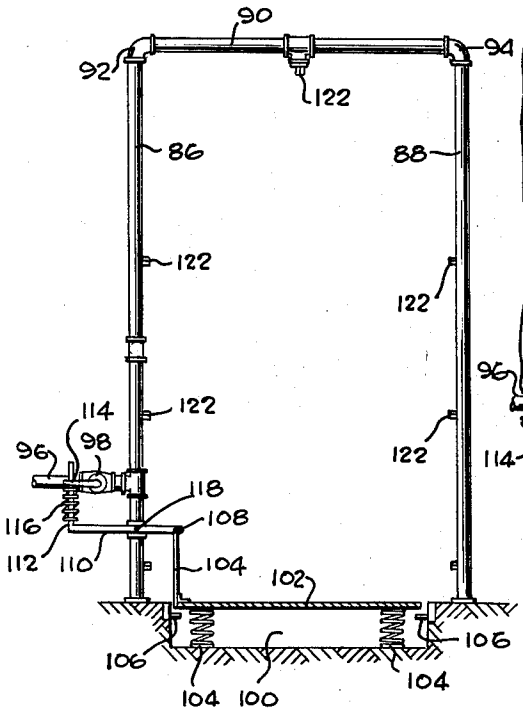
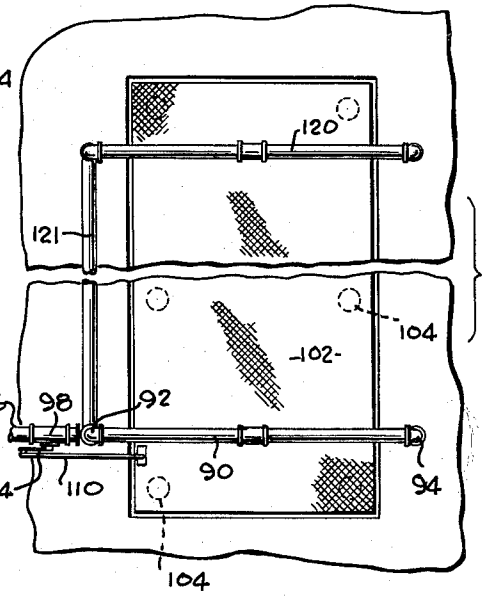


Fig. 6



INVENTOR.
TEUNIS ALBERS
BY
FULWIDER, MATTINGLY & HUNTLEY
ATTORNEYS

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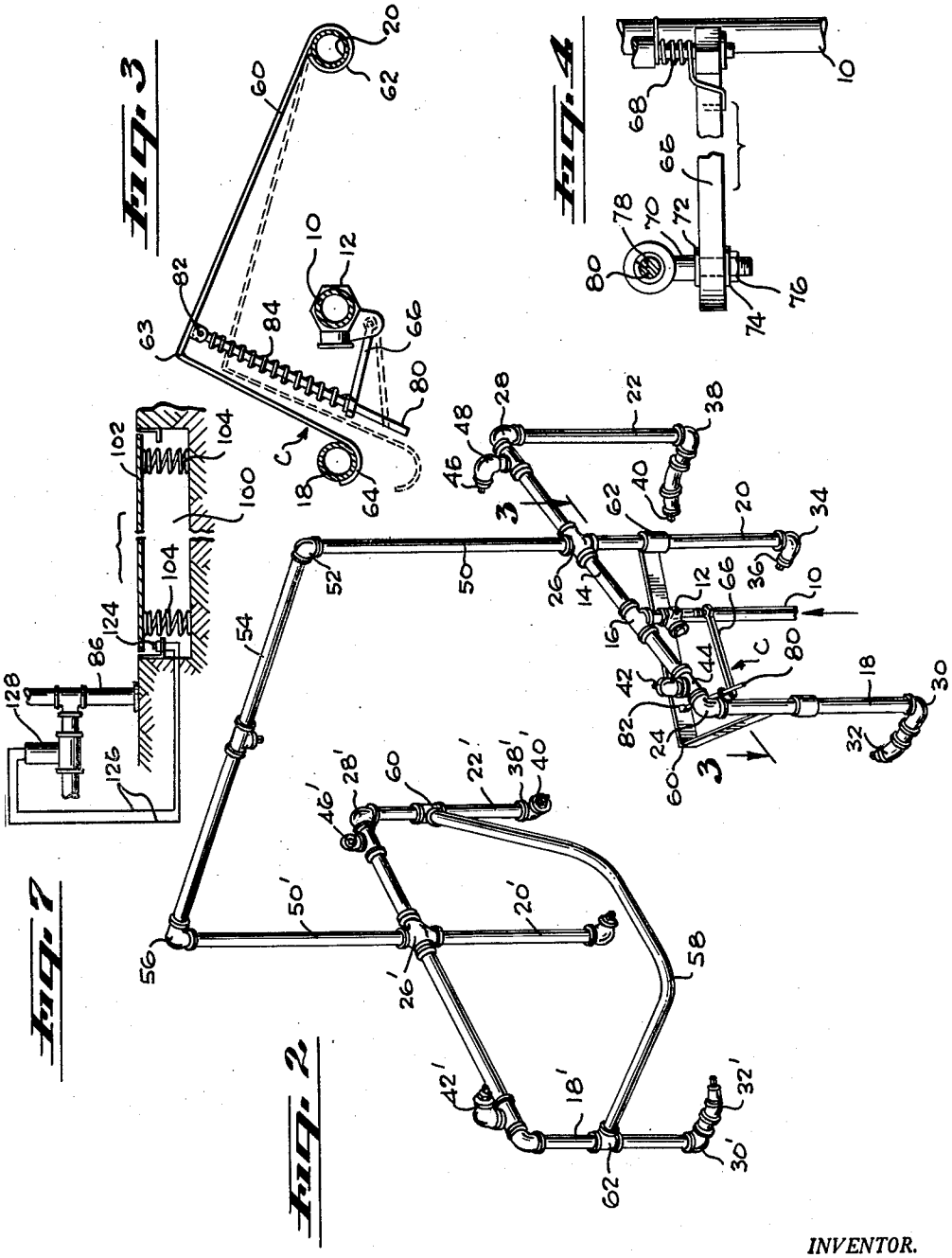


Fig. 2

Fig. 3

Fig. 4

INVENTOR.
TEUNIS ALBERS
BY
FULWIDER, MATTINGLY & HUNTLEY
ATTORNEYS

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COW WASHING DEVICE

Teunis Albers, 21205 Norwalk Blvd., Artesia, Calif.

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This invention relates generally to cow washing devices and particularly to a new and novel cow washing device actuated by the physical movement of the cow.

One of the main objects of the invention is to provide a surrounding tubular water jet spray device and controlling valve mechanism therefor that is actuated by the physical movement of the cow.

Another object of the invention is in the provision of valve control mechanism for the spray device that opens the valve substantially immediately upon initial physical impact of the cow and is then permitted further movement without affecting the valve operation.

Yet another object of the invention is to provide valve control mechanism for the water spray that is operated by physical impact of the cow's body.

Still another object of the invention is to provide valve control mechanism for the cow washing spray that is actuated by the stepping of the cow upon a movable platform.

A further object of the invention is to provide a surrounding tubular multiple jet water spray device having means for guiding the cow against a valve control arm that moves initially to open the valve and then moves further under physical impact without affecting valve operation.

A still further object of the invention is in the provision of a slip friction valve control mechanism for the water spray that returns automatically to closed position as the cow walks through the spray.

With the foregoing objects in view, and such other objects and advantages as will become apparent to those skilled in the art to which this invention relates as this specification proceeds, the invention consists essentially in the arrangement and construction of parts all as hereinafter more particularly described, reference being had to the accompanying drawing in which:

FIGURE 1 is an elevational view of a cow washing device that constitutes a preferred embodiment of the present invention;

FIGURE 2 is a perspective view in enlarged scale of said device disclosed in FIGURE 1;

FIGURE 3 is a horizontal sectional view in enlarged scale taken on line 3—3 of FIGURE 2;

FIGURE 4 is a fragmentary enlarged view of a detail in FIGURE 2;

FIGURE 5 is a front elevational view of a modification of the spray device and physically controlled valve mechanism therefor;

FIGURE 6 is a plan view of the device of FIGURE 5; and

FIGURE 7 is an elevational view of an alternate type of valve control mechanism.

Referring to the drawings, a preferred embodiment of the invention is shown in FIGURES 1 through 4.

The cow washing device of the present invention provides for initiation of a multiple jet water spray against and upon the cow as she passes through the device and physically, either by body or feet, actuates the water control valve.

The preferred form of spray device comprises tubular water spray elements on either side of the cow and above. On the valve side of the cow a main water pipe **10** is connected to the main water supply. A water control valve **12** of conventional construction is located in the pipe **10**. A horizontally disposed pipe or tube **14** coupled at **16** to the main supply pipe **10** has three depending legs **18**, **20** and **22**. An elbow **24** connects the pipe **14** to the leg **18**. A four way coupling **26** connects the shorter leg **20** to the pipe **14**. An elbow **28** connects the leg **22** to the pipe **14**. An elbow **30** forms a foot for the leg or tube **18** and connects a lower inwardly projecting water jet or spray **32** thereto. A similar elbow **34** connects a spray nozzle or jet **36** to the short leg **20**. A third elbow **38** also forms a foot for the leg **22** and connects a differently directed spray nozzle **40** thereto.

A spray nozzle **42** is coupled at **44** to the pipe **14**. A water jet or nozzle **46** is coupled at **48** to the other end of the pipe **14**. A vertical pipe **40** rises from the four way coupling **26** and is connected at **52** to an overhead pipe **54** which in turn is connected at **56** to another similar vertical pipe **50'** connected at its lower end to another four way coupling **26'**. The three legged piping and spray nozzle structure on the opposite side of the device is identical with the structure heretofore described. For this reason identical parts have been given the same primed numerals to save repetition of description. One element has been added to the opposite tubular structure in that guide rail **58** is connected at **60** to leg **22'** and at **62** to leg **18'**. The guide rail **58** obviously forces the cow into physical contact with the valve control mechanism generally referred to as C.

A flat bar **60** is wrapped at **62** for pivotal movement on the leg **20**. The bar **60** slants inwardly in the path of the cow as she walks through the device in the direction of the arrow. The bar **60** is then bent sharply at **63** toward the leg **18**. The outer end of the bar **60** is then cupped at **64** to engage and partially surround the leg **18**. The arm structure described controls the degree of inner movement of the bar **60** into the path of the cow guided thereagainst by the rail **58**. The conventional water control valve **12** is actuated by a lever **66** spring connected thereto at **63** in a manner to normally hold the valve closed and to return the valve to a closed position. On the outer end of the lever **66**, a stub shaft **70** is pivotally connected thereto by means of the dual washers **72** and **74** and the threaded nut **76**. The upper end of the stub shaft **70** is enlarged and bored at **78** in a manner to slidably receive the outer end of a rod **80** pivotally connected at **82** to the arm or bar **60**. A coil spring **84** surrounds the rod **80** between the bar **60** and the enlarged bore **78** in stub shaft **70**. The valve control mechanism normally assumes the full line position shown in FIGURE 3. This is the closed position for the water control valve **12**.

When physically impacted by the cow, the arm **60**, rod **80** and valve control lever **66** will move to the phantom line position of FIGURE 3. The spring suspension of the bar **60**, rod **80** and lever **66** operates to substantially immediately move the lever **66** to open position against the spring **68** when the cow physically impacts the arm **60**. Further inner movement of the bar **60** induced by the belly of the cow will not further affect valve operation, but merely slip the rod **80** through the bore **78** under increased compression of the coil spring **84**. In this manner the rod **80**, spring **84** and lever **66** cooperate to provide a lost motion means for the bar **60** permitting continued travel of the bar after the valve **12** has been opened. When the cow is drenched and cleansed by the water blast from the spray nozzles and passes through the device, the spring **68** automatically returns the lever **66** to closed position to shut off the valve mechanism **12**. The bar **60**, rod **80** and coil spring are automatically returned to inactive valve closed position. The valve control mechanism is in effect a slip friction device to take up the great physical impact of the heavy cow and still operate the water control valve in a simple and easy manner.

In FIGURES 5 and 6, a modification of the spray

device and valve control mechanism is disclosed. In this form, the spray device and valve mechanism is actuated by a platform upon which the cow steps as she passes through the device. The spray device of FIGURES 5 and 6 comprises vertical spaced water pipes **86** and **88** having an overhead cross member **90** connected thereto by means of the elbows **92** and **94**. A plurality of spray jets or nozzles direct the water blast at the usual filth-encrusted parts of the cow as she passes therethrough. A water inlet pipe **96** has a conventional valve **98** connected thereto in the usual manner. The floor beneath the spray device is excavated in the shallow manner designated **100**. However, the platform need not cover an excavation, but be either suspended from or substantially flush with the floor. A platform **102** covers the excavation and is mounted therein in a tensioned manner by means of the plural coil springs **104**. A plurality of stops **106** limit the downward movement of the platform **102**. The platform **102** is connected to the valve **98** by means of a rod **104** attached to the platform **102** at **106**. The rod **104** is pivotally connected at **108** with a crank arm **110**, the outer end **112** thereof sliding through a bore in the outer end of a conventional valve lever **114** controlling the conventional water control valve **98**. A spring **116** forces the lever **114** to a closed position in the manner heretofore described. The crank arm **110** is pivoted at **118** to the pipe **86**. A coil spring **118** on the outer end **112** of the crank arm **110** substantially immediately actuates the lever **114** when the cow steps on the platform **102**. Once the valve **98** is opened the outer crank arm **112** continues to slip through the bore in the lever **114** under increased pressure of the coil spring **118** without further affecting valve operation. The spring **116** returns the lever **114** and valve control mechanism to valve closed position just as soon as the cow steps off the platform **102**.

The tubular water spray above described may have one or more extensions **120** similar in design and connected by a pipe **121**. Multiple water nozzles or spray jets **122** are secured in the cow surrounding tubular pipes.

An alternate type of valve control mechanism is shown in FIGURE 7. A microswitch **124** is disposed in the path of the platform **102** as it is lowered by the weight of the cow. The switch **124** is electrically connected at **126** to a conventional type of solenoid controlled water valve mechanism **128**.

The operation of the microswitch and solenoid controlled valve mechanism is simple. The cow steps on the platform **102** which lowers upon the microswitch **124**. The solenoid controlled valve mechanism is electrically operated to open the main water valve and energize the spray nozzles.

Since various modifications can be made in my invention as hereinabove described, and many apparently

widely different embodiments of same made within the spirit and scope of the claims without departing from such spirit and scope, it is intended that all matter contained in the accompanying specification shall be interpreted as illustrative only and not in a limiting sense.

I claim:

1. A cow washing device, comprising: a frame including horizontal and vertical pipe elements in spaced relation and connected by an overhead tube; multiple spray nozzles in said pipe elements directed at various parts of a cow passing therethrough; a main water inlet pipe connected to said frame; a valve in said inlet pipe; a bar normally extending inwardly into the path of said cow; and means operatively interconnecting said bar and valve whereby physical impact on said bar will actuate said valve and energize said spray nozzles, said means including lost motion means permitting continued travel of said bar after said valve is actuated.

2. A cow washing device, comprising: a tubular frame forming a passageway for cows; multiple spray elements in said frame directed at normally filth-encrusted parts of said cows; a main water inlet pipe; a valve in said inlet pipe; a pivotally mounted arm on said frame extending into said passageway adapted to be impacted by said cows; and connecting means between said arm and said valve whereby said valve will be opened upon physical impact with said arm and closed upon release thereof, said connecting means including lost motion means for permitting continued opening movement of said arm after said valve reaches its open position.

3. A cow washing device, comprising: a tubular frame forming a passageway for cows; multiple spray elements in said frame directed at normally filth-encrusted parts of said cow; a main water inlet pipe; a valve in said inlet pipe; an arm pivotally mounted on said frame extending at an angle into said passageway to be impacted by said cow; and a compression spring interposed between said arm and said valve for transmitting initial pivotal movement of said arm to said valve to effect opening thereof and to thereafter permit continued movement of said arm without further operation of said valve, whereby water is caused to be sprayed on said cow in response to initial movement of said arm.

4. A cow washing device according to claim 3 wherein said arm is initially disposed at an acute angle to the direction of movement of said cows through said passageway.

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