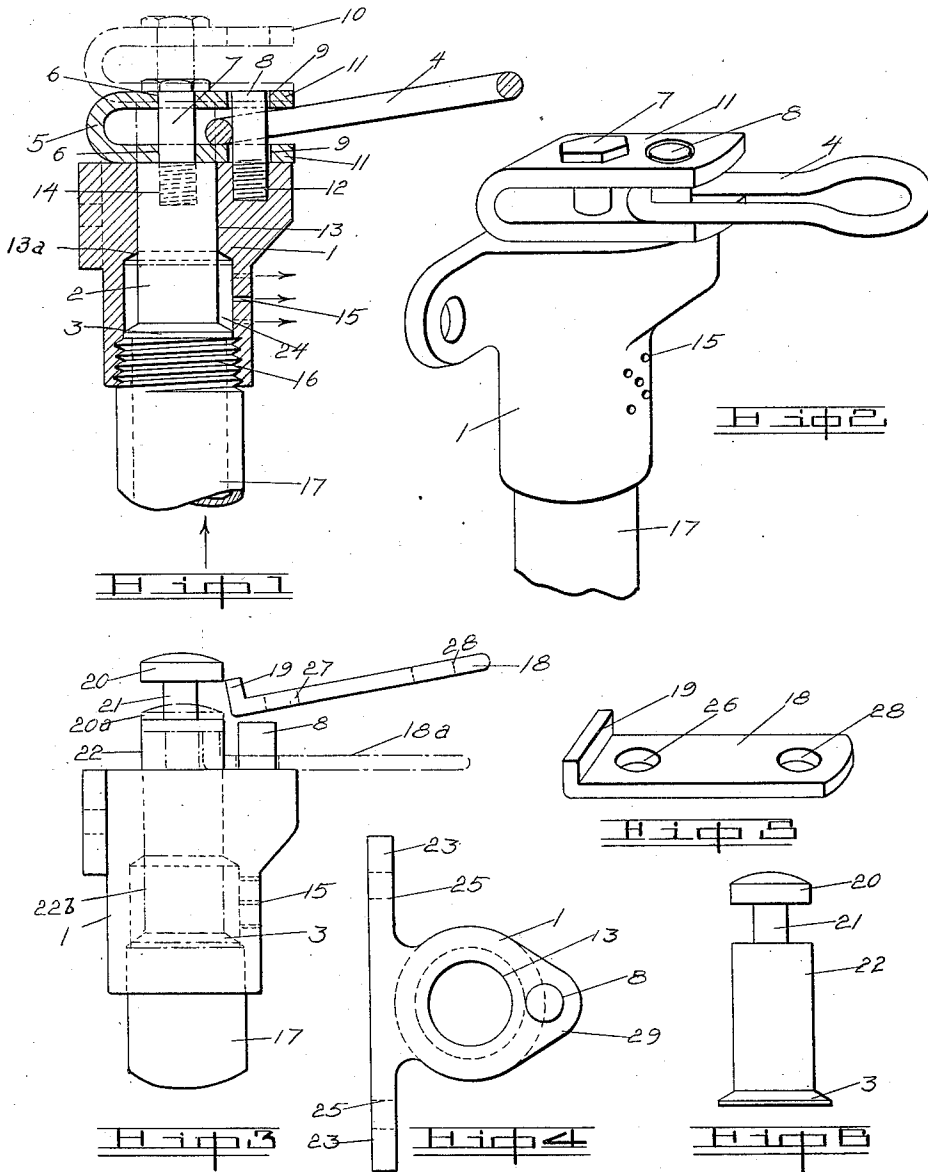


T. GENSMER.
HORSE RELEASING DEVICE.
APPLICATION FILED FEB. 19, 1912.

1,043,920.

Patented Nov. 12, 1912.

2 SHEETS—SHEET 1.

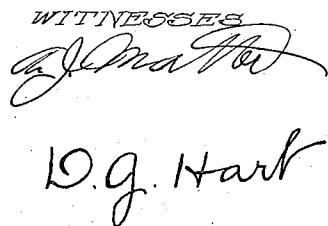


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2 SHEETS—SHEET 2.



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HORSE-RELEASING DEVICE.

1,043,920.

Specification of Letters Patent.

Patented Nov. 12, 1912.

Application filed February 19, 1912. Serial No. 678,590.

To all whom it may concern:

Be it known that I, THEODORE GENSMER, a citizen of the United States, residing at Portland, in the county of Multnomah and State of Oregon, have invented certain new and useful Improvements in Horse-Releasing Devices, of which the following is a specification.

This invention relates to improvements in horse releasing devices, and has for its object to provide a fluid pressure operated means for automatically releasing horses or other animals secured in their stalls.

A further object is to provide an attachment for water pressure systems, whereby the force of the water may be employed to disengage elements normally connected with the pipes thereof.

A further object is to provide a fixed stud upon which to secure attaching means for horses and for similar purposes, and to provide automatic means for removing the attaching means therefrom.

A still further object is to provide a plunger valve which will automatically seat itself in its casing under the water pressure and prevent leakage around it.

I accomplish these and other objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a longitudinal sectional view of the releasing mechanism. Fig. 2 is a perspective elevation of the device. Fig. 3 shows the releasing mechanism open. Fig. 4 is a plan view of the valve casing. Fig. 5 is a detail of a releasable link to which the animal is to be attached. Fig. 6 is a detail of a gravity plunger. Fig. 7 shows the usual stable stall with an adjacent door having releasing devices installed. Fig. 8, shows a row of stalls each supplied with a releasing device, installed in a water system. Fig. 9 is a detailed view of a binding link showing the manner in which it is carried upwardly to be released.

Referring to the drawings in detail, 1 represents a valve casing adapted to be fixed upon the end of an upright pipe 17 by means of screw threads 16, connected with any ordinary water system. Leading from the cavity 24 of the casing is a large opening 13 in which the plunger 2 loosely operates. The shoulder 13^a, formed by enlarging the bore 13 to form the cavity 24, serves as a

seat to receive the flanged head 3 on the lower end of the plunger. In the upper end of the plunger (Fig. 1) is secured a bolt 7 in the aperture 14, upon which is mounted the U-shaped bracket or yoke 5, by means of opposing apertures 6 through the arms 11. The length of the plunger is such that when the lower end rests upon the top of pipe 17, or is at its lower limit, the upper end will stand flush with the top of the casing. In the forward side of the casing, at the upper end, is a projection 29 having an aperture 12 formed parallel with aperture 13, to receive the stud 8. This stud is made strong and is rigidly secured, the upper end of which is made to fit loosely in the forward registering apertures 9 of the yoke 5. Upon this stud is engaged the hitching link 4 to which the animal is secured, the length of the stud being a trifle less than the space between the flange 3 in its down position and the seat 13^a therefor. The arms 11 of the yoke receive the link loosely between them and embracing a portion thereof carry the link upwardly when raised by force applied upon the head of the plunger, carrying the yoke to the position shown dotted at 10. Here the upper face of the lower arm of the yoke will rise slightly above the top of the stud, thus insuring the release of the link.

In Fig. 3 is shown a modification in which the plunger is made to project above the casing 1 and an annular groove is cut in the upper portion flush with the casing leaving the projecting neck 21, surmounted by the cap 20. In this case a modified form of link is used, consisting of a bar 18 having the inner end bent to form a flange 19, which is just long enough to fit neatly in the groove against the neck 21. Adjacent the inner end of the bar is formed an aperture 27, adapted to receive loosely the stud 8, and in the outer end of the bar is an aperture 28 within which to secure the snap of the hitching strap.

When the plunger 22 is in down position as shown at 20^a and 22^b, it will be supported by the pipe 17 and the hitching bar will lie upon the casing engaged on the stud 8, as seen at 18^a; but when force is applied upon the head of the plunger carrying it upward to the position shown in Fig. 3, the flanged end 19 of the bar will bind between the

shoulders of said groove, and it also will be carried upwardly in a horizontal position, the horizontal position being necessary to prevent it from binding on the stud. Since the plunger rises a little higher than the length of the stud the link will come forward and cannot fail to be disengaged.

In Fig. 9 is a detail view illustrating the lines of force applied upon the parts. Here the inner end 50 of the bar 18, rests upon the shoulder 22^a, which acts as a fulcrum when force is applied upwardly on the plunger as indicated by arrow 49, or downwardly on the bar, as indicated by arrow 52. In this case the flange of the bar will tend to move in a circle as indicated by arrow 48; but as the end 47 thereof, fits neatly against the shoulder 46, it will be held from such movement and will be carried upwardly in a horizontal position, until disengaged from the stud 8, as seen in Fig. 3. It will be free to swing upwardly, on the line of arrow 51, except for the stud 8, which preserves its horizontal position.

In Fig. 7 is shown the usual stall, having a manger 30, along the wall of which is fixed a water pipe 31, having the valve casing 1 with the other described elements, installed therein, the casing being secured to the wall by means of screws or bolts through apertures 25 in the wings 23. A branch 31^a leads from the pipe 31 to the door casing of the stable, and upon its end is fixed a valve casing 1^a containing simply a plunger over which the catch bar 38 mounted upon the pin 41, and limited in its movement by studs 39 and 40, is engaged. When the plunger is raised, it disengages the catch and the door 43 is drawn open in the direction indicated by arrow 35 upon hangers 33 moving on the track 36, by means of a weight suspended from cable 37 secured in the eye 34.

Fig. 8 shows a row of stalls 32 upon the floor 45, along which is extended the water pipe, and a releasing device is installed in each one, as well as for the door 43.

At a convenient point, which may be outside the building, is arranged a cut-off 44. In the event of fire or whenever it may be desirable to disengage or release the animals, water is turned on at the cut-off, which under the pressure afforded by any ordinary system will quickly fill the pipes and carry the plungers upwardly to their respective seats in their casings, thereby releasing each animal and opening the door of the stable. The water being entirely cut off by the tight fit of the plunger in its seat, can escape from the cavity 24, only through the apertures 15 in the front of the casing through which it issues in a sudden spray which at once serves to drive the animals from the stall, as well as to quench any fire that may be within reach. It is obvious that other fluid,

as air may be employed in this system. It is also apparent that when the fluid is cut off the plunger will automatically return to its down position, when it will be free to be raised at will for restoring the link; though it will be impossible for the animal to raise the plunger or disengage the link.

Having now described my invention, what I claim is:—

1. A fluid pressure releasing device comprising a casing, a retaining element fixed therein, a link engaged upon said retaining element, a plunger operating in said casing, and means connecting the plunger with said link causing the two to move longitudinally in unison, whereby, by the application of a fluid pressure upon the plunger the link will be carried from its engaging means.

2. A fluid pressure releasing device, comprising a valve casing, a gravity plunger reciprocating vertically therein, a stud fixed in the upper edge of the casing parallel with said plunger, a link mounted loosely upon said stud, and means mounted upon the plunger in engagement with said link whereby the latter is preserved in a horizontal position as it moves with the plunger.

3. A fluid pressure releasing device comprising a valve casing, a gravity plunger reciprocating vertically therein, a stud fixed in the upper edge of the casing parallel with said plunger, a link loosely engaged upon the stud, and a clamp fixed upon the upper end of the plunger adapted to engage the link and preserve it in horizontal position, whereby, when said plunger is carried upwardly the link will be disengaged from the stud.

4. The combination with the pipe in a fluid pressure system of a vertical supplemental pipe interposed therein, a valve casing provided with a plurality of apertures in its front side mounted thereon, a valve seat in the casing, a gravity plunger reciprocating therethrough, a flange about the inner end of the plunger fitting in said valve seat, a vertical stud fixed in the upper edge of the casing, a link loosely engaged upon the stud, and a clamp fixed upon the plunger in engagement with the link, whereby, when fluid is applied under pressure in the pipe, it will carry the plunger upwardly to its seat, disengaging the link from its supporting stud and cutting off the upward flow of the fluid which then issues in jets through said apertures.

5. The combination with the pipe in a fluid pressure system of a plurality of vertical pipes interposed therein, valve casings mounted at the ends thereof, a valve seat in each casing, a gravity plunger reciprocating therethrough, a flange about the inner end of each plunger fitting in its respective valve seat, and a link engaging the upper side of each casing in line with the plunger, where-

by, when each plunger is raised to its seat by the fluid pressure, the respective links will be lifted from engagement with the casing.

6. A fluid pressure device, comprising a casing, a gravity plunger having an annular groove in its upper end, operating therein, a stud fixed in the upper face of the casing, and an angle plate mounted upon said stud with the angle end engaged in

said groove, whereby, by the elevation of said plunger said angle plate will be disengaged from said stud. 10

In testimony whereof I affix my signature in presence of two witnesses.

THEODORE GENSMER.

Witnesses:

Mrs. J. DUNCAN,

W. D. ORDWAY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
