No. 675,988. Patented June 11, 1901.

J. TUCKER.

STABLE DRAIN OR GUTTER.

(Application filed Apr. 3, 1901.)

(No Model.) 2 Sheets—Sheet 1.

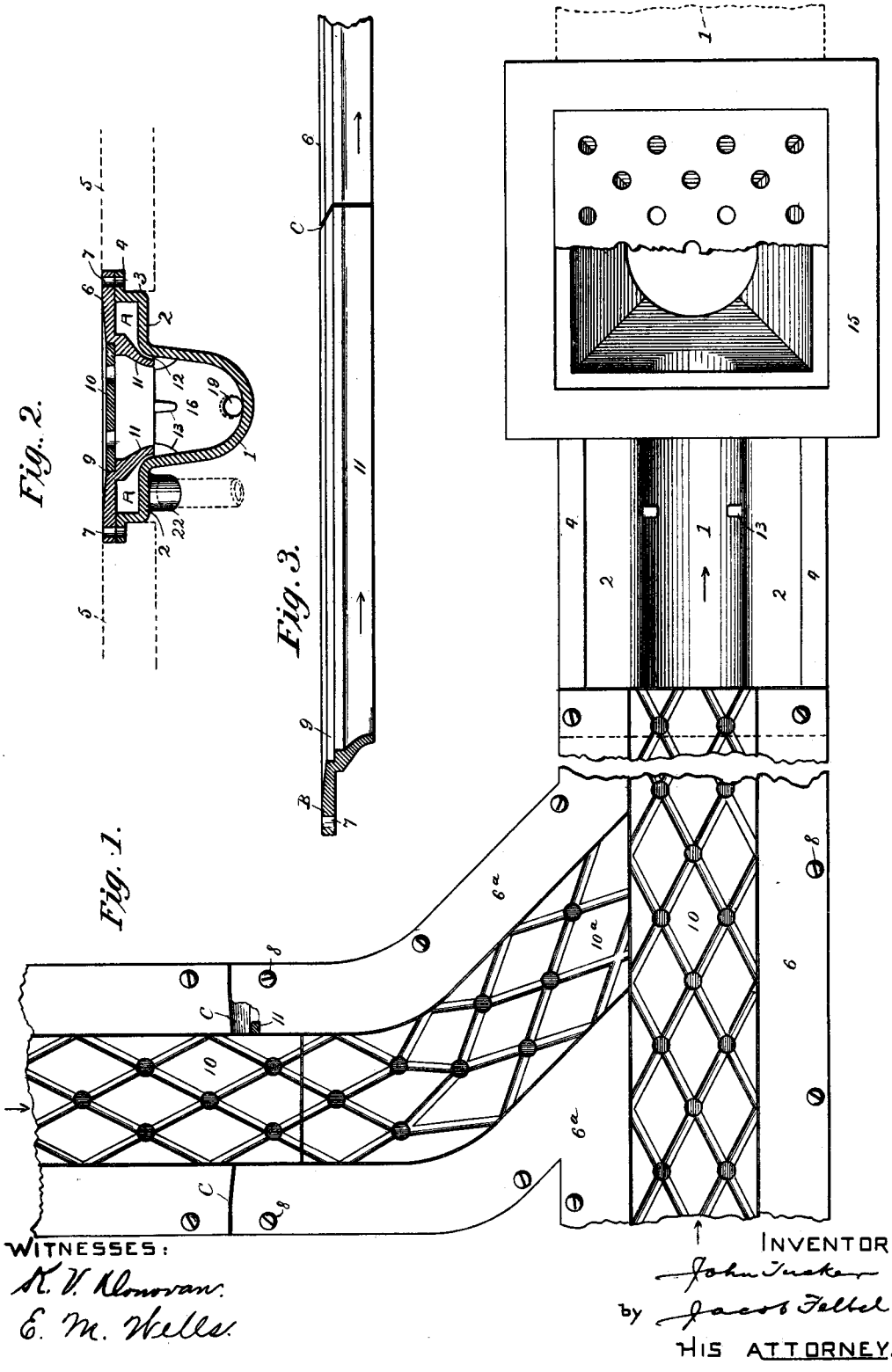


Fig. 2.

Fig. 3.

Fig. 1.

WITNESSES:

K. V. Donovan.

E. M. Wells.

INVENTOR

John Tucker

by Jacob Feltel

HIS ATTORNEY.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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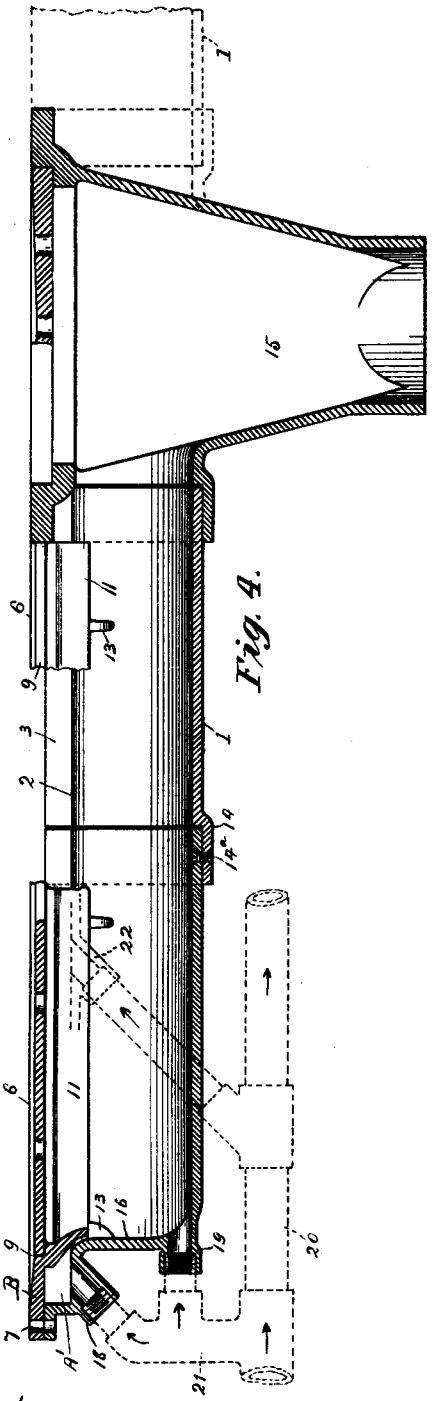


Fig. 4.

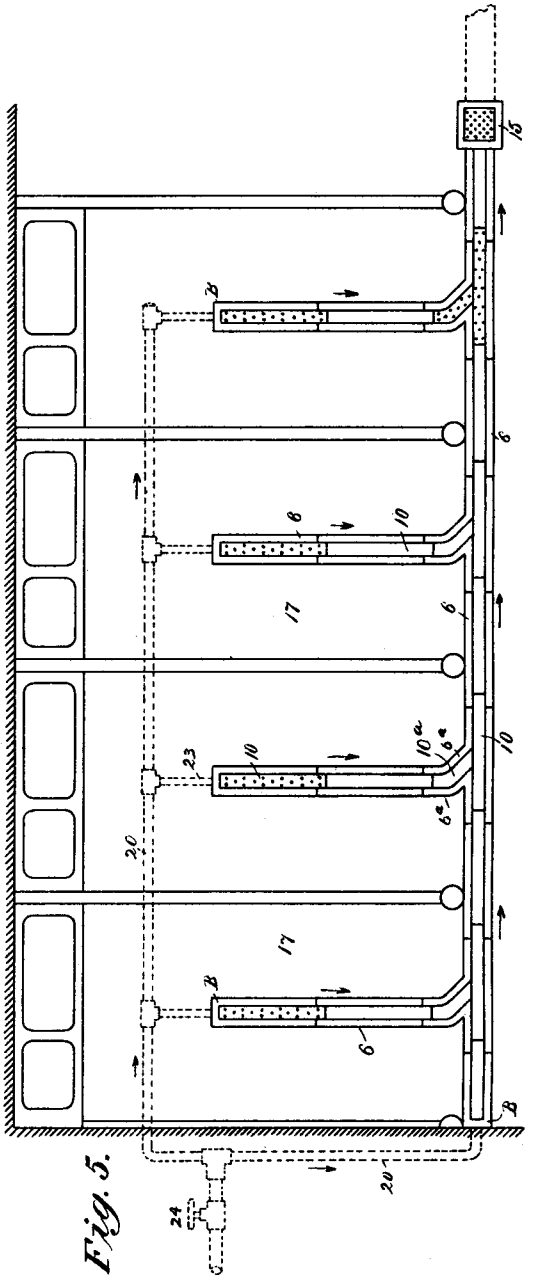


Fig. 5.

WITNESSES:

K. V. Kinnavan.

E. M. Wells.

INVENTOR

John Tucker

by Jacob Fellel

HIS ATTORNEY.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JOHN TUCKER, OF NEW YORK, N. Y.

STABLE DRAIN OR GUTTER.

SPECIFICATION forming part of Letters Patent No. 675,988, dated June 11, 1901.

Application filed April 3, 1901. Serial No. 54,129. (No model.)

To all whom it may concern:

Be it known that I, JOHN TUCKER, a citizen of the United States, and a resident of the borough of Manhattan, in the city of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Stable Drains or Gutters, of which the following is a specification.

This invention relates to drains or gutters for the floors of stables; and its object is to increase their efficiency and secure thorough cleansing thereof.

My invention consists in certain combinations of devices, features of construction, and arrangements of parts, all as will be hereinafter more fully set forth, and particularly pointed out in the concluding claims.

In the accompanying drawings, Figure 1 is a partial plan view of a system of gutters, showing the junction of a stall-gutter with the main gutter and also a cesspool or outlet into which the latter discharges. Fig. 2 is a cross-section of the main gutter looking toward the left-hand end thereof. Fig. 3 is an elevation showing two abutting floor-plates, one of which has a closed end, and illustrating the overlapping joints between the plates. Fig. 4 is a vertical central section of the main gutter shown at Fig. 1. Fig. 5 is a top plan of a series of stalls and showing my improved gutter.

In the several views similar parts are designated by similar characters of reference.

The gutter comprises a main trough or channel and a flushing-rim. The channel, which is designated as 1, is preferably U-shaped in cross-section, Fig. 2, and is formed with exterior horizontal flanges 2, having vertical rims 3, which are provided with narrow horizontal flanges or seats 4, whereby the channel may be supported upon the flooring 5. Narrow plates 6, flush with the flooring, rest upon the flanges 4 and are provided at intervals with perforations 7 for receiving screws 8, which may extend through the flanges 4 and into the flooring, if the latter is of wood, clamping the plates to the flanges 4 and also securing the latter to the floor. If the flooring is of cement, the screws 8 may engage tapped holes in the flanges 4. Along their inner edges the floor-plates are provided with seats 9 for perforated covers 10 and also with downwardly-converging flanges 11, which dip slightly into the channel 1 and lie close to the walls thereof, thus forming a constricted longitudinal opening or crevice 12. The flanges 11 rest and are supported upon lugs 13, cast at intervals upon the inner walls of the channel.

The flange 2 and plate 6 form, respectively, the floor and top, and the rim 3 and flange 11 the sides, of a flushing-rim or chamber A, which discharges through the crevice or passage-way into the channel or drain.

The channel is made up of plain sections having overlapping ends, as illustrated at 14, Fig. 4, secured together by screws 14^a. Any number of plain sections may be placed end to end, the extreme right-hand section being connected to a cesspool or outlet 15 and the extreme left-hand one to a section having a closed end 16, Fig. 4, around which the flushing-rim extends, as indicated at A'. The top and inner side of the closed end of the flushing-rim are cast in one piece with a pair of opposite floor-plates, as indicated at B, Figs. 3, 4, and 5. The floor-plates are also made in sections having overlapping ends, the end of one plate shelving or dipping down obliquely beneath the overhanging end of the next, the direction of the slope being upwardly and backwardly opposite to the flow of the water, as indicated at C, Figs. 1 and 3, so as to prevent the water from backing up through the joint. The covers 10 are also made in sections and placed end to end, as at Fig. 5.

At Fig. 5 is illustrated a series of stalls 17, each having a gutter such as described and also a main gutter, into which all of the stall-gutters discharge. It will be perceived that each stall-gutter joins the main gutter at an obtuse angle with floor-plates 6^a and covers 10^a to match, the flushing-rim being made continuous from the stall-gutter into the main gutter. As indicated in dotted lines at Fig. 4, the cesspool may be open at both ends and receive the discharge from gutters extending in opposite directions therefrom. It may also be provided with a trap.

The closed end A' of the flushing-rim of the main gutter is provided with an inlet 18, and the closed end 16 of the channel is also provided with an inlet 19, both inlets being connected to a water-supply pipe 20 by means of

an elbow or connection 21, Fig. 4. At points opposite the stall-gutters the flushing-rim of the main gutter may also be provided with supplemental inlets 22, Fig. 4, connected to the supply-pipe 20 and so as to provide an ample supply of flushing-water. At the closed end of each stall-gutter is provided a flushing-rim inlet 18 and a channel-inlet 19, both of which are connected by a short pipe 23 to the supply-pipe 20.

When the supply of water is turned on at a valve 24, Fig. 5, it flows through the main pipe 20 and all of the branch pipes 23 into the inlets 18 and 19 at the closed ends of the stall-gutters, thus supplying two independent streams to each gutter, one stream being directed longitudinally along the floor of the gutter, thus carrying along the accumulations, and the other flowing through the flushing-rims and discharging through the crevice 12 down the walls of the gutter, thus cleansing the walls of the latter and swelling the channel-current. At the same time the water rushes from the main supply-pipe 20 into the head of the main gutter and into the flushing-rims of the latter. Thus all of the gutters are thoroughly sluiced out and all of the walls thoroughly washed down. When necessary, any cover-section 10 may be removed in order to afford access to the channel beneath.

It will be seen that the gutter is simple in construction and not liable to get out of order or become foul and that from a small assortment of inexpensive parts any desired system of gutters may be built up and readily connected to a water-supply pipe. It will be understood, also, that when used in a box-stall the cesspool may, if desired, be open upon all four sides and receive the discharges from four gutters radiating therefrom.

What I claim as new, and desire to secure by Letters Patent, is—

1. A stable-gutter comprising a channel and a flushing-rim, the top of the flushing-rim constituting a floor-plate.

2. A stable-gutter comprising a channel and a flushing-rim, the floor and outer side of the flushing-rim being cast upon the channel, the top of the flushing-rim being attached thereto and constituting a floor-plate, and the inner side of the flushing-rim being formed integrally with said floor-plate.

3. A stable-gutter comprising a channel, flange 2 and rim 3 formed integrally upon each side thereof, and overlying floor-plates 6 having flanges 11, said flanges resting upon lugs 13 provided upon the inner walls of the channel.

4. A stable-gutter comprising a channel, flange 2 and rim 3 formed integrally upon each side thereof, and overlying floor-plates 6 having flanges 11, and cover-seats 9, the latter being formed upon the inner edges of the floor-plates.

5. A stable-gutter comprising a U-section channel, opposite flanges 2 extending outwardly therefrom, upwardly-directed rims 3 upon said flanges, flanges 4 upon said rims, floor-plates 6 laid upon the flanges 4, and flanges 11 extending downwardly from the inner sides of said floor-plates and dipping into the channel and lying close to the walls thereof.

6. A stable-gutter comprising a U-section channel, opposite flanges 2 extending outwardly therefrom, upwardly-directed rims 3 upon said flanges, flanges 4 upon said rims, plates 6 laid upon flanges 4, flanges 11 extending downwardly from the inner sides of said floor-plates and dipping into the channel and lying close to the walls thereof, lugs 13 for supporting said flanges 11, seats 9 formed in said floor-plates, and a cover 10 resting upon said seats.

7. A sectional floor-plate for a stable-gutter, having a downwardly-extending flange 11, and a cover-seat 9.

8. A sectional stable-gutter having a closed end, and a flushing-rim extending along the sides of the gutter and around said closed end.

9. A sectional stable-gutter, consisting of a channel having a closed end, flanges 2 and rims 3, extending along the sides of said channel and around the said closed end, and a flanged plate overlying the sides and end of said channel-section, and coöperating with said flanges 2 and rims 3 to form a flushing-rim.

10. In a stable-gutter, the combination of a channel, a flushing-rim, an inlet for the channel, and an inlet for the flushing-rim.

11. In a stable-gutter, a sectional channel having a closed end, a flushing-rim extending along the sides of the channel and around said closed end, an inlet formed in the channel, and an inlet formed in the flushing-rim.

12. A sectional stable-gutter, consisting of a channel having a closed end, flanges 2 and rims 3 extending along the upper sides of said channel and around the said closed end, a flanged plate placed over the sides and end of said channel-section and coöperating with said flanges 2 and rims 3 to form a flushing-rim, an inlet for the gutter, and an inlet for the flushing-rim.

13. In combination with a stable-gutter, a longitudinally-directed water-supply therefor, a flushing-rim for said gutter, and a separate water-supply inlet for said flushing-rim.

14. In combination with a stable-gutter, a water-supply directed longitudinally thereinto, a flushing rim or chamber on each side of said gutter and at the top thereof, and means for supplying water to said flushing rims or chambers.

15. In combination with a stable-gutter, means for directing a supply of water longitudinally thereinto, a flushing rim or chamber overhanging said gutter on each side thereof, and means for supplying water to said flushing rims or chambers.

16. The combination of a stable-gutter having outwardly-extending horizontal flanges 2

and vertical rims 3 on opposite sides of said gutter, floor-plates 6 overhanging said flanges 2 and provided with downwardly-extending walls 11 means for directing a supply of water longitudinally into said gutter, and means for supplying water to the chambers formed between the flanges 2 and the floor-plates.

17. The combination of a stable-gutter having lateral flanges 2, vertical rims 3 and lateral flanges 4, the floor-plates 6 secured to said flanges 4 and overhanging the flanges 2 and provided with the downwardly-extending walls 11 having seats 9, a cover-plate fitted to said seats, a water-supply for the gutter, and a water-supply for the flushing-chambers formed between the floor-plates 6 and the flanges 2.

Signed at the borough of Manhattan, in the city of New York, in the county of New York and State of New York, this 2d day of April, A. D. 1901.

JOHN TUCKER.

Witnesses:
K. V. DONOVAN,
E. M. WELLS.