

(No Model.)

M. LOGAN.
STABLE DRAIN.

No. 559,035.

Patented Apr. 28, 1896.

Fig. 1.

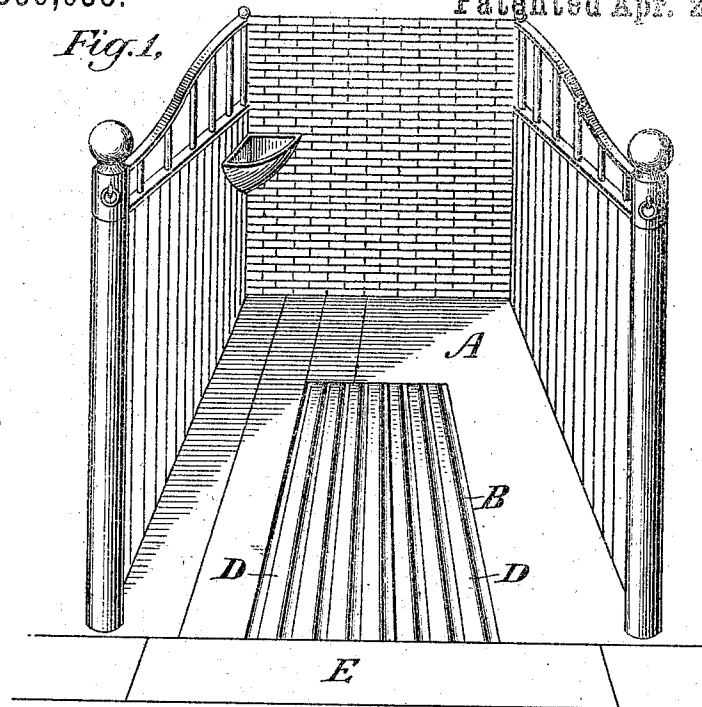


Fig. 2.

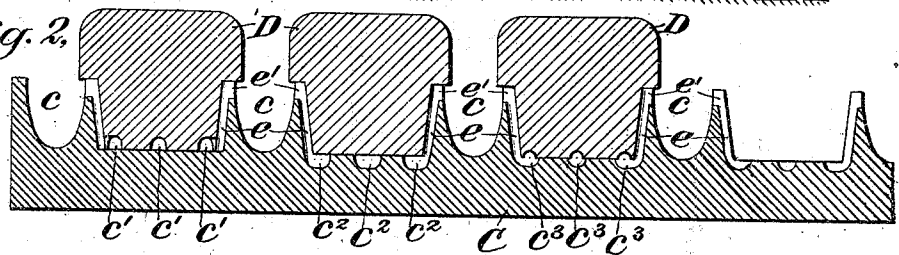
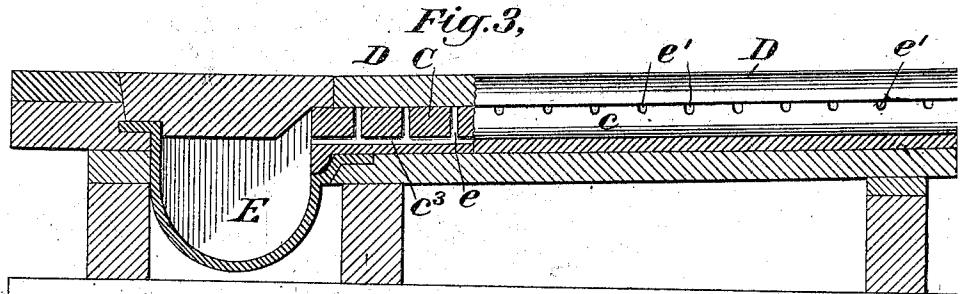


Fig. 3.



Witnesses:
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UNITED STATES PATENT OFFICE.

MARTIN LOGAN, OF NEW YORK, N. Y.

STABLE-DRAIN.

SPECIFICATION forming part of Letters Patent No. 559,035, dated April 28, 1896.

Application filed May 8, 1895. Serial No. 548,542. (No model.)

To all whom it may concern:

Be it known that I, MARTIN LOGAN, a citizen of the United States, and a resident of New York city, in the county of New York and State of New York, have invented a new and useful Improvement in Stable-Drains, of which the following is a specification.

This invention relates to drains for stables, and especially such as are adapted for use in stalls.

The object of the invention is to effectually carry off from the floor of a stall or other place whatever liquid may fall thereon, whether it be the liquid excrement of animals or other liquid, whereby the stable-floor may be kept dry and in a proper sanitary condition.

Heretofore drains for stables have been constructed comprising a metallic bed-plate provided with longitudinal drain-channels alternating with longitudinal tread-bars fitted in suitable recesses. Such constructions are shown in United States patents granted to me, No. 386,997, July 31, 1888, and No. 502,004, July 25, 1893. It has been found in practice, however, that the drain-channels in the prior arrangements did not in all cases effectually carry off the liquid discharged in the drain. Sometimes the drain-channels would become overcharged at various points along their length, owing not infrequently to neglect on the part of the stableman to sweep out the drain-channels and entirely remove whatever matter tended to clog them, and part of the liquid therefore often worked its way underneath the tread-bars and there being no suitable way for it to escape became confined in the tread-bar recesses, giving off offensive odors and keeping the floor more or less damp. My present invention is designed to remedy these defects, and it does so in an efficient manner and by simple and inexpensive means.

Referring now to the drawings forming part of this specification, and in which like letters of reference designate corresponding parts—

Figure 1 is a rear perspective view of a stall provided with a drain embodying my invention. Fig. 2 is a cross-sectional view of such a drain; and Fig. 3 is a longitudinal elevation, partly in section, of such a drain.

The stall A is provided with the drain B. This drain has a bed-plate C, preferably made of iron and provided with longitudinal drain-

channels *c*, alternating with tread-bar recesses *d*. Tread-bars D fit snugly in the recesses *d*, rising above the tops of the recesses and channels, so as to make a corrugated top surface for the drain. Beneath the tread-bars are arranged drain-ducts, which may be one, two, three, or more beneath each tread-bar, as desired. In Fig. 2 there are three such ducts beneath each tread-bar. These ducts may be made entirely in the bed-plate C, within the recesses *d*, as at *c'*, or they may be made entirely in the bottoms of the tread-bars themselves, as at *c''*, or they may be made partly in the bed-plate and partly in the tread-bars, as at *c'''*. These drain-ducts in whatever form made communicate with the drain-channels *c*, so as to receive the overflow liquid from the channels *c*. The means of communication between the drain-ducts and drain-channels preferably consist of a series of upright ducts *e* and cross-ducts *e'*, formed in the sides of the recesses *d*, as shown in the drawings. Of course, if desired, these ducts *e* and *e'* may both be formed in the tread-bars, or the ducts *e* may be formed in the recesses and the ducts *e'* be formed in the tread-bars, or vice versa, as will be readily understood.

The channels *c* and ducts *c'* *c''* *c'''* lead on a gentle decline to a trough E, arranged across the foot of the drain, and this trough is closed by a cover E', made flush with the top surface of the drain and floor. When now the drain-channels *c* become overcharged with liquid and the liquid rises to the level of the ducts *e'*, it may escape through the ducts *e* and *c'* *c''* *c'''* into the trough E. Heretofore when the liquid in the channels reached the edge of the tread-bars some of it worked its way beneath the tread-bars and remained there because there was no way for it to escape. It not only then emitted offensive odors, keeping the air impure, but was squeezed out more or less when the horse or other animal stepped upon the tread-bars, and operated to keep the drain and the bedding on the floor damp.

It will be readily appreciated that the defects noted are effectually overcome by this invention.

Of course various changes, which will readily suggest themselves to any one skilled in the art, may be made without departing from the spirit of my invention. For example, sepa-

rate channels and separate tread-bar recesses, not formed in a distinct bed-plate so as to be a part thereof, might be used.

Having now described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a stable-drain, the combination of a bed-plate provided with drain-channels and tread-bar recesses, tread-bars fitted in said recesses, a suitable receptacle at the foot of the drain, and one or more longitudinal drain-ducts, located beneath the tread-bars and communicating with said drain-channels and with the receptacle at the foot of the drain, substantially as set forth.

2. In a stable-drain, the combination of a metallic bed-plate provided with drain-channels and tread-bar recesses, wooden tread-bars fitted in said recesses, a suitable receptacle at the foot of the drain, and one or more longitudinal drain-ducts located beneath the tread-bars and communicating with said drain-channels and with the receptacle at the foot of the drain, substantially as set forth.

3. In a stable-drain, the combination of a bed-plate provided with drain-channels and tread-bar recesses, tread-bars fitted in said recesses, a suitable receptacle at the foot of the drain, and one or more longitudinal drain-ducts located beneath the tread-bars and communicating with the receptacle at the foot of the drain and with said drain-channels

through a series of upright drain-ducts located along the sides of the tread-bars, substantially as set forth.

4. In a stable-drain, the combination of a metallic bed-plate provided with drain-channels and tread-bar recesses, wooden tread-bars fitted in said recesses, a suitable receptacle at the foot of the drain, and one or more longitudinal drain-ducts located beneath the tread-bars and communicating with the receptacle at the foot of the drain and with said drain-channels through a series of upright drain-ducts located along the sides of the tread-bars, substantially as set forth.

5. In a stable-drain, the combination with a bed-plate provided with a series of drain-channels and a series of tread-bar recesses and a suitable receptacle at the foot of the drain, of a series of tread-bars fitted in the said recesses, the tread-bar recesses being provided in their bottoms with longitudinal drain-ducts communicating with the receptacle at the foot of the drain and in their sides with upright drain-ducts communicating with the drain-channels, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

MARTIN LOGAN.

Witnesses:

GEO. W. MILLS, Jr.,
EDWIN SEGER.