

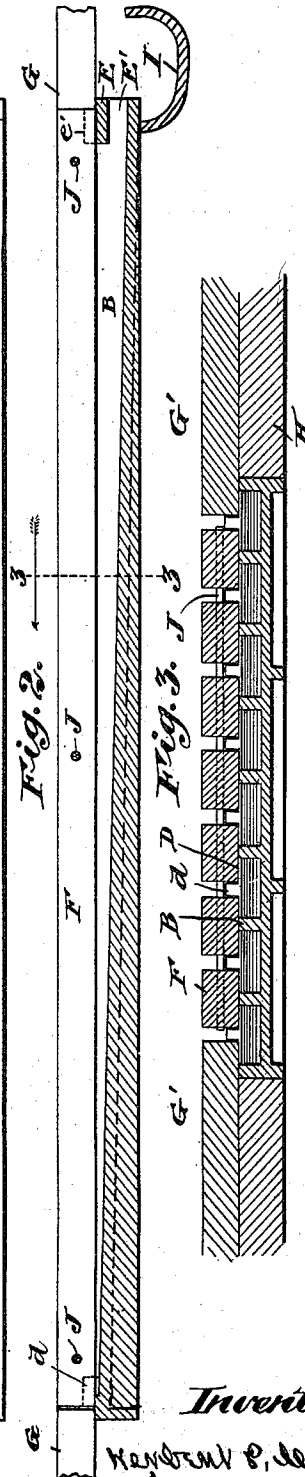
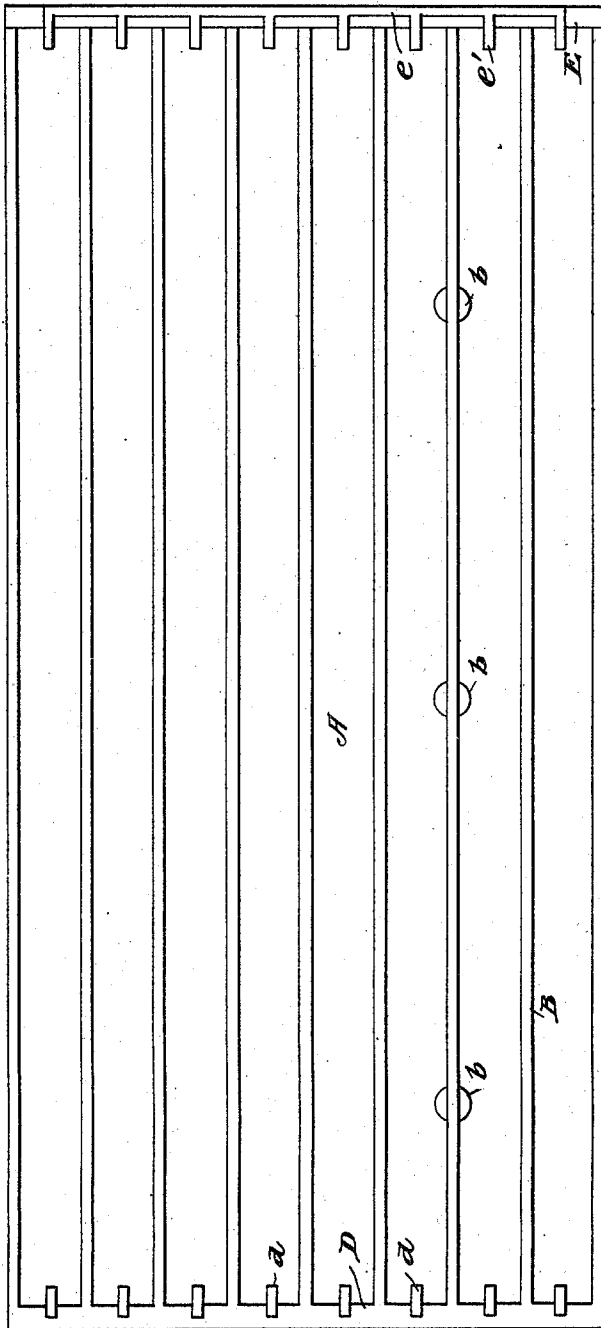
(No Model.)

H. P. CRANE.
FLOOR DRAIN.

No. 579,136.

Patented Mar. 23, 1897.

Fig. 1.



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UNITED STATES PATENT OFFICE.

HERBERT P. CRANE, OF CHICAGO, ILLINOIS.

FLOOR-DRAIN.

SPECIFICATION forming part of Letters Patent No. 579,136, dated March 23, 1897.

Application filed May 8, 1896. Serial No. 590,658. (No model.)

To all whom it may concern:

Be it known that I, HERBERT P. CRANE, a citizen of the United States, residing at Chicago, Illinois, have invented certain new and useful Improvements in Floor-Drains, of which the following is a specification.

The object of this invention is to provide an improved construction of floor-drains applicable for use in animal-stalls, washrooms of carriage-houses, and for the floors of bottling establishments, and in all situations where it is desired to have a floor capable of draining liquids while leaving the upper or tread surface of the floor comparatively dry.

In carrying out my invention I employ a supporting-frame, preferably of cast-iron, which may be made in a single piece or section large enough for an animal-stall or in sections of any size, joined together where it is to be used to cover large areas. Said skeleton frame has its upper surface provided with longitudinal ribs which are comparatively thin, and between which are provided grooves or channels of gradually-increasing depth, all of the grooves or channels having an outlet at their deeper ends into a common drain or gutter. The ends of this cast-iron framework are elevated and are provided with spacing-lugs, between which are placed slats, said slats being arranged above and resting upon the ribs defining the gutters. One end of the cast-iron framework may also be provided with end stops to prevent the displacement of the slats.

In the accompanying drawings, Figure 1 is a plan view of the metallic framework. Fig. 2 is an elevation in longitudinal section through the metallic framework and showing the abutting floor-covering broken away. Fig. 3 is a transverse sectional elevation on the line 3-3, looking in the direction of the arrow.

In the drawings, A represents the body of a cast-iron framework or bed, which may be of any suitable form or size and as shown is rectangular in form and intended to be of such size as to adapt it for use in a horse-stall. Said body portion has its under surface hollowed out to reduce its weight and cost and its upper surface provided with a series of longitudinal ribs B. At the upper end the body portion is provided with the transverse ledge or rest D, having the pro-

jecting lugs *d* thereon. The opposite end of the body portion has the ledge E with horizontal slots or perforations E', the end strip *e*, and the spacing-lugs *e'*.

It will be observed that the lugs *d* and *e'* are arranged at equal distances from each other and intermediate the ribs B.

F represents the slats, which may be strips of wood of appropriate width and length, which are placed between the lugs and rest upon the upper edges of the ribs and upon the ledges D and E. By this means these slats are prevented from movement laterally or endwise in one direction, while to securely hold them from endwise movement in the opposite direction the flooring G may be made to abut against them. This framework, when placed in a stall, may be inset in the surface of a lower floor or sheathing or a bed of concrete H or notched into the upper edges of floor-joists, and the flooring G and G' will project over the framework, so as to hold it in place and provide a level surface slatted above the framework, and the latter providing parallel channels all discharging through the slots E' into a common gutter or drain I.

In order to prevent the slats from being displaced by use, a rod or rods J may be employed, extending through the series of slats and binding them together. For covering extended surfaces or floor areas a number of these slatted frames may be employed, and for a carriage-house a series of them may be arranged to discharge to a depressed drain occupying a central position in the floor. The arrangement of the sections is of course to be determined in each case by the use to which the invention is applied, by the extent of the surface to be covered, and by other conditions of use, none of which are essential features of my invention.

My invention will be found especially adapted for use in horse-stalls. The slats are removably placed and may be turned over when worn and also reversed or turned end for end, so that the same slat may be used in a number of different positions, thus prolonging its usefulness. By this means also the surface of the stall may be level. The slats are given an adequate support at their ends and throughout their length, but are kept supported above and out of contact with

the liquids beneath, so that they are preserved from decay.

It may be found expedient to alter the specific details of construction. For example, the ribs B might be provided with intermediate lugs *b*, affording a broader bearing for the middle portion of the slats, although I do not consider this essential. The end strip *e* may be omitted when the flooring projects over upon the ledge E, as shown in Fig. 2. The material of the frame may be other than that specified—for example, concrete, molded to form and provided with the end rests and longitudinal ribs. The frame should be of a material impervious to moisture.

Without, therefore, limiting my invention to precise details of construction, I claim—

1. A floor-drain comprising in combination a metal frame having longitudinal ribs on its upper surface providing channels between them and transverse ledges at its ends whose upper surfaces are in the plane of the bearing edges of the ribs, spacing-lugs on the ledges and slats resting at their ends upon

the ledges between the lugs the bodies of said slats being supported upon the upper edges of the longitudinal ribs, substantially as described.

2. A floor-drain comprising in combination a metal frame having an inclined upper surface and integral longitudinal parallel ribs upon said surface, providing channels of gradually-increasing depth from end to end, transverse ledges at its ends whose upper surfaces are in the plane of the bearing edges of the ribs, the said ribs affording at their deeper ends a seat for the lower ledge, and thereby forming, in combination with the ledge and bottom, openings for the escape of liquids, lugs on said ledges alternating in position with the ribs, and slats resting at their ends between said lugs and upon said ledges, and adapted to bear throughout their length upon the ribs, substantially as described.

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