

(No Model.)

W. W. SCHOULER.
STALL FOR HORSES.

No. 544,444.

Patented Aug. 13, 1895.

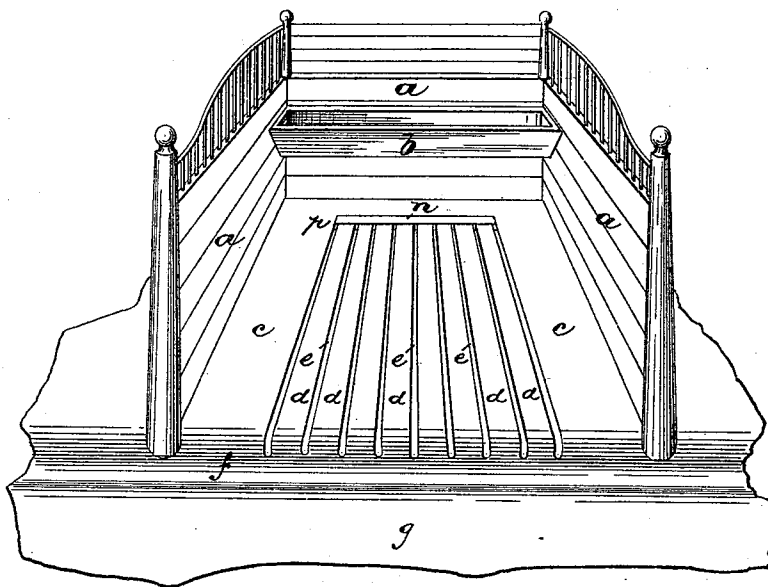


Fig. 1.

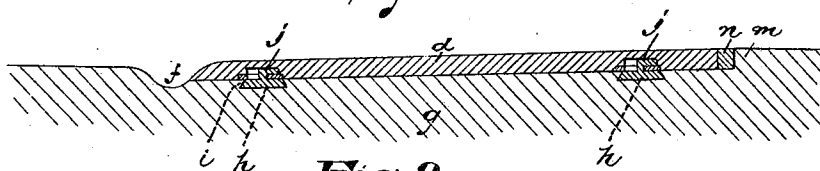


Fig. 2.



Fig. 3.

Fig. 4.

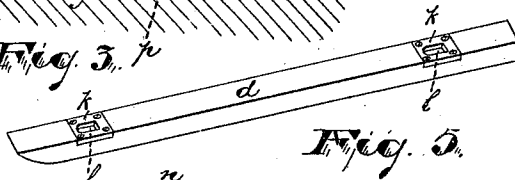
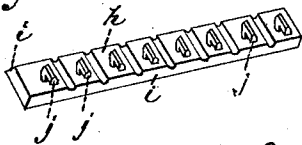


Fig. 5.



Fig. 6.

Witnesses

Inventor.

Robert Solberger
W. P. Garrabrano.

William Wallace Schouler,

By Drake & Co. Attys.

UNITED STATES PATENT OFFICE.

WILLIAM W. SCHOULER, OF BLOOMFIELD, NEW JERSEY.

STALL FOR HORSES.

SPECIFICATION forming part of Letters Patent No. 544,444, dated August 13, 1895.

Application filed November 22, 1893. Serial No. 491,637. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM WALLACE SCHOULER, a citizen of the United States, residing at Bloomfield, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Stalls for Horses; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention relates to that class of stalls for horses having on the floorings thereof removable slats between which the urine from the horse flows out to the gutter at the foot of the stall, the general objects of the slats being to keep the bedding more dry and clean, to keep the horse clean, and thus reduce the labor of cleaning, and to keep the animal in a more healthful condition.

The objects of the present improvements are to facilitate the operation of cleaning in the stalls, to reduce the cost of construction, to provide a more simple and durable structure, to prevent the slats forming the center of the floor when swollen by dampness from being unduly held within the flooring-recess, and to secure other advantages and results, some of which will be referred to in connection with the description of the working parts.

Referring to the accompanying drawings, in which like letters indicate corresponding parts in each of the views, Figure 1 is a perspective view of a stall having the improved construction. Fig. 2 is a vertical section of the same, taken longitudinally through one of the slats. Fig. 3 is a transverse section. Fig. 4 is a detail perspective of a transverse piece adapted to be embedded in the cement or concrete foundation and to serve as a slat-holder. Fig. 5 is a perspective detail showing the under side of one of the slats, and Fig. 6 is a detail of a key-strip adapted to lock the slats upon the slat-holders.

It has been a common practice to lay over the entire stable foundation or bottom a layer of concrete or cement, by which the formation of rat-holes is prevented and other advantages gained. Over and upon this bottom layer within the stalls a wooden flooring has been laid, consisting of planks secured upon

transverse sleepers or wooden strips. In some cases the planks have been open at the joints to allow a free passage of urine through to the cement, over which it has flowed to the transverse trough at the foot of the stall. In most cases these floorings have been permanent fixtures in the stall and only removable by tearing up the parts and thus doing damage to the partitions. The floorings thus constructed provided hiding places for vermin and formed receptacles for dirt which sifted through even fairly close joints, but when the joints were open, as above, the accumulation of dirt was rapid and, being damp, said dirt soon fermented and produced ammoniacal odors, tending to render the stable disagreeable and unhealthy.

In some cases, as a partial remedy for the evils above cited, these overlying floorings, at the center of the stall where the horse usually stands, have been cut away to form rectangular recesses, and broad iron plates bottoming the whole recess have been inserted, being either supported by the cement bottoms or by timbers. In either case a perfect foundation for the plate was difficult to secure, air-spaces being frequently formed even in the cement, the more perfect of the foundations provided, and thus because of the fragility of the iron, the plates were easily broken. These iron plates, upon the upper faces thereof, have been provided with ribsex- tending lengthwise of the stall and between which removable flooring-strips of wood have been inserted. To enable these ribs to properly hold the said strips or slats, they have been of considerable vertical projection, and thus deep grooves have been formed on the plates from head to foot of the central recess. When the slats have been removed to allow a cleansing of the floor by hose and broom, these longitudinal ribs have presented material obstruction to the cleansing operations. Furthermore, the expansion and shrinkage of the wood because of absorption of water and drying made it difficult to maintain a proper fit of the strips or slats between the ribs, and so, at one time, said slats became unduly loose and at others they were bound so as to be difficult of removal. All of these devices being old I make no claim to them, and, indeed, my invention inheres in constructions largely independent of these matters.

In my invention, as illustrated in the draw-

ings, I dispense with all permanent wooden floorings and at the center of the stall form in the cement or concrete bottom a shallow recess which opens at the foot of the stall into a transverse drain, the concrete bottom at the sides and head ends of the stall being raised to form the flooring, so that the one body of concrete or cement provides the transverse trough or drain, the raised side and end flooring, the supports for the slats, a bond or holder for certain narrow slat-holding pieces embedded in said cement and bearings for a key floor-strip. By this construction all housings or protections for vermin and dirt are avoided, and I am enabled to save considerable time in removing the flooring-slats from the central recess in that by lifting the key flooring-strip from its bearings in the cement, all the others are loosened and may be gathered up quickly instead of being drawn longitudinally and individually.

In said drawings, *a* indicates the usual vertical partitions forming the sides and end of the stall, and *b* the ordinary receptacle at the head of the stall for oats, hay, &c.

c indicates the flooring, which may be concrete or wood, at the center of which and toward the foot of the stall are arranged the slats *d d d* having grooves *e e e* between, into which the urine flows and gravitates toward the trough *f f* in any suitable manner, the trough or gutter *f* being preferably formed in the cement or concrete bed *g* and extending transversely at the foot of the stall, as indicated in Figs. 1 and 2. The said slats rest upon the upper surface of the cement-bed, free from any lateral bearings, not being arranged in close grooves, as in certain devices heretofore employed, so that when swollen by dampness they are held firm against removal, but they are free to expand or contract and are unaffected by such expansion or contraction. They are held upon the foundation by means hereinafter referred to, extending up from said foundation into the recess formed in the bottom of said slats, and thus are not allowed, when in use, to work longitudinally backward down the incline by the action of the horse thereon even when the trough at the rear of the stall is uncovered. In fact, by the construction herein, the said trough may be and is normally uncovered, and thus can be more conveniently kept clean. When the slats are removed from the foundation, the latter presents a plain flat surface devoid of deep slat-holding grooves, and thus an ordinary hose and broom are sufficient to quickly cleanse the stall.

The foundation of the stall, having the shallow pocket for the slats, is devoid of joints from partition to partition, with the exception of where the transverse holders are embedded in the bottom of said pocket, and these joints are too close to allow the entrance of organic matter or dampness to any material degree. The slats are the only wood of the floor, and the iron work is reduced to two

small strips in the cement and the small plates on the underside of the flooring-slats.

Near the upper or head and the lower or foot ends of the slats *d d*, preferably embedded in the cement or concrete foundation, are transverse slat-holders *h*, the edges of which may be beveled, as at *i*, so as to be held into said foundation more securely, and the upper faces of which lie flush with the surface of the foundation, so that the urine, or water employed in cleansing the stall, may flow thereover toward the trough or gutter without obstruction and to lower the slats so that they lie flat on the said concrete. Said slat holders are preferably of cast-iron, and have on their upper faces hooks *j j*, which extend lengthwise with respect to the slats, so that said slats may move longitudinally thereon to and from holding engagement.

The undersides of the slats are mortised and over the mortises are slotted plates *k k*, held by screws or otherwise, the slots *l*, Fig. 5, coinciding with the upwardly-projecting hooks, so as to receive the same. The mortises extend under the plates, so that when the slats are moved longitudinally after the insertion of the hooks the latter engage the plates and hold the same and the slats attached thereto to the foundation. At the upper or head ends of the slats a shoulder *m* is formed, either in and of the cement or concrete or of boards forming the facing of the stall. The slats are of such a length and the hooks and holding-plates *k* are so related thereto as that when hooked, as above described, a key receptacle or slot is formed between the ends of the slats and said shoulder *m*, into which the key *n* is inserted, as shown in Figs. 1 and 2. Thus all said parts are securely and firmly locked in position.

The key *n* may be beveled, as at *o*, Fig. 6, so as to enter beneath a corresponding abutment *p*, Fig. 1, so that the key will not be rolled out by the foot of the horse when pawing should the parts be loosely fitted together.

I prefer to form in the cement or concrete foundation a series of grooves *p p p*, which coincide with the grooves *e e e* between the slats, so that the liquid will flow therein and not tend to flow between the slats and foundation, the slats thus being kept more dry and clean. When these grooves *p p* are employed, the transverse strips *h* are correspondingly grooved to allow a free flow thereover.

It may be observed that in my construction the removable slats lie directly upon the cement or concrete foundation, thus dispensing almost entirely with the use of iron and the defects and disadvantages arising from its use. Furthermore I am enabled at a small cost to provide a larger surface of slats at the central parts of the stall where the horse is in the habit of standing and all around the same to have a concrete bordering raised to the level of the slats, the said cement or concrete having a shallow receptacle therein, in which the slats are seated. By this construc-

tion all permanently-seated wood in the flooring, forming joints in which moisture and organic solid matter may collect and emit noxious gases detrimental to the health of the animal, is dispensed with and the stall from a sanitary standpoint is rendered more perfect.

I am aware that modifications of construction within the scope of the claims may be made without departing from the essentials of the invention.

While it is evident that the castings and the other operating parts may be employed in connection with a foundation of wood, I prefer and I wish to lay specific claim to the construction in which the said parts are employed with concrete or cement as a foundation. The said concrete being a non-absorbent is more quick to dry, and is therefore more easily and effectively kept in a healthful and cleanly condition.

Having thus described the invention, what I claim as new is—

1. The improved horse stall, comprising partitions forming the sides of the stall, a homogeneous non-absorbent foundation extending from partition to partition and providing the main portion of the standing surface, a shallow recess being formed in the central part of said foundation toward the foot of the stall, hooks embedded in said foundation and extending into said recess, and flooring slats removably secured upon said hooks, within said recess, the upper surfaces of which slats lie substantially flush with the standing surface of the foundation, substantially as set forth.

2. The improved horse stall, in which is combined with partitions, a foundation providing standing surfaces for the horse and a central slat receiving depression, series of hooks arranged in said depression, one series lying near the head and the other near the foot thereof, and flooring slats providing surfaces which complete the standing surfaces of the stall, and removably held, at or toward their opposite ends, upon said hooks, and a key strip engaging the ends of the flooring strips and holding them fast within the recess, substantially as set forth.

3. The improved horse stall consisting of side partitions and a foundation recessed at the center and provided with series of slat holders, one series stationed at or toward one end of the recess and the other toward the opposite end and fastening the slats toward the head and foot of the stall respectively, the main or intermediate portion of the bottom of the recess being devoid of fastening means and thus free and open to admit of brooming, said parts being arranged and combined substantially as set forth.

4. The improved stall for horses herein described, in which is combined a homogeneous foundation providing a partial flooring or standing surface having a depression for slats

and raised sides, vertical partitions stationed back from said recess, slat holders consisting of castings having hooks on their upper sides embedded in said foundation, the upper faces lying flush with the face of said foundation and the hooks thereon extending above said face, and slats having on the under sides means to receive said hooks, and a key strip also arranged within said depression and holding said slats into said hooks, substantially as set forth.

5. In a stall for horses, the slat-holders having beveled lateral edges adapted to fasten the said holders into the foundation when embedded into the concrete, and having, on the upper side thereof, a series of hooks adapted to enter recesses on the under side of the flooring strips, substantially as set forth.

6. The improved stall for horses, herein described, in which is combined with the vertical partitions, a concrete foundation covering, in one homogeneous body, the floor of the stall, the said foundation having formed in its upper face a transverse trough at the foot of the stall and, between said partitions, opening into said trough, a shallow slat-receiving depression, a shoulder being formed in the foundation at the sides of the said depression, slat holders embedded in said foundation within said depression and extending up therefrom into holding engagement with the under sides of the slats, a series of said slats seated on the floor of said recess, and a key strip seated in said depression one longitudinal side engaging one of said shoulders and the opposite side the ends of the series of flooring slats, substantially as set forth.

7. A stall for horses in which is combined with partitions and a flooring having a shallow slat recess, a shoulder being formed at the end of said recess, the bottom of the recess having hooks, a series of slats held in said recess by said hooks and separable therefrom by a longitudinal movement and a key strip seated in said recess, and serving as a part of the flooring, at one side bearing against said shoulder and on the opposite side engaging the ends of the series of slats, substantially as set forth.

8. A horse stall comprising side partitions and a series of flooring slats fastened removably upon a foundation, said foundation and slats having hooks and slotted plates, and a key strip engaging the slats of the series and holding said hooks and slotted plates in engagement and the flooring slats down upon said foundation, said parts being arranged and combined substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 13th day of November, 1893.

WILLIAM W. SCHOULER.

Witnesses:

CHARLES H. PELL,
ROBERT SOLLBERGER.