No. 792,064. PATENTED JUNE 13, 1905.

P. A. MYERS.

HAY RACK.

APPLICATION FILED SEPT. 28, 1904.

4 SHEETS—SHEET 1.

Fig. 1.

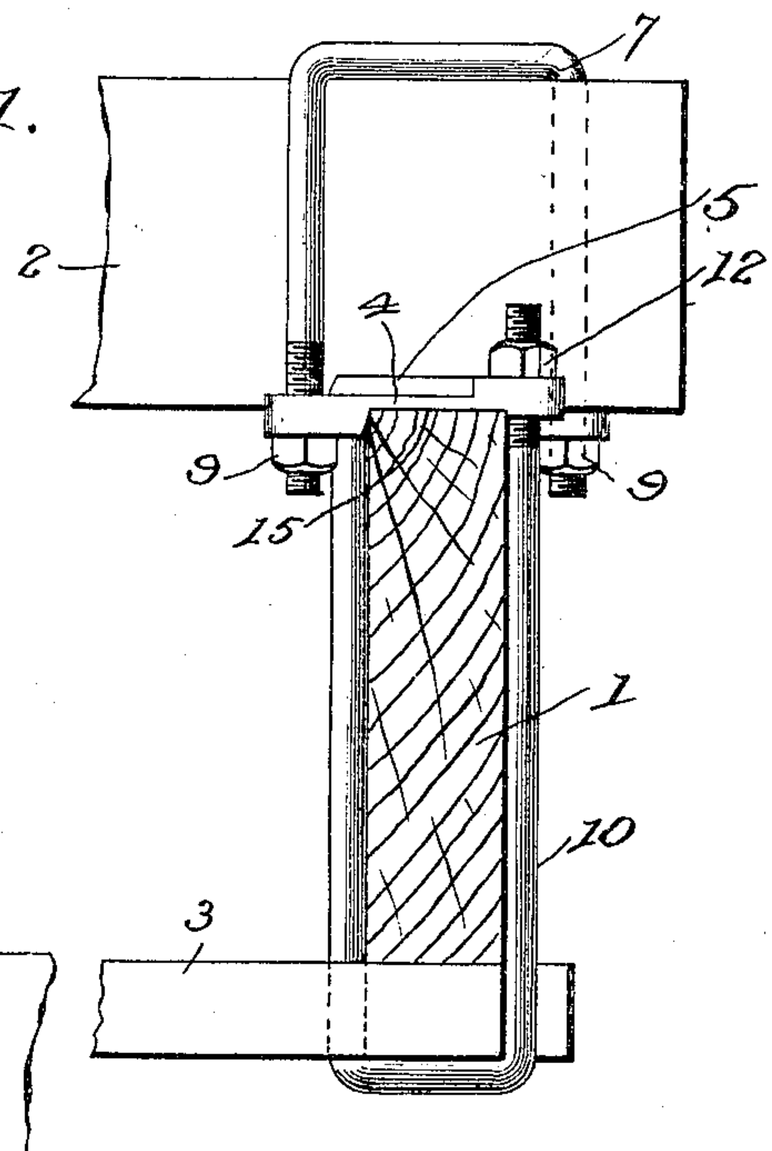


Fig. 2.

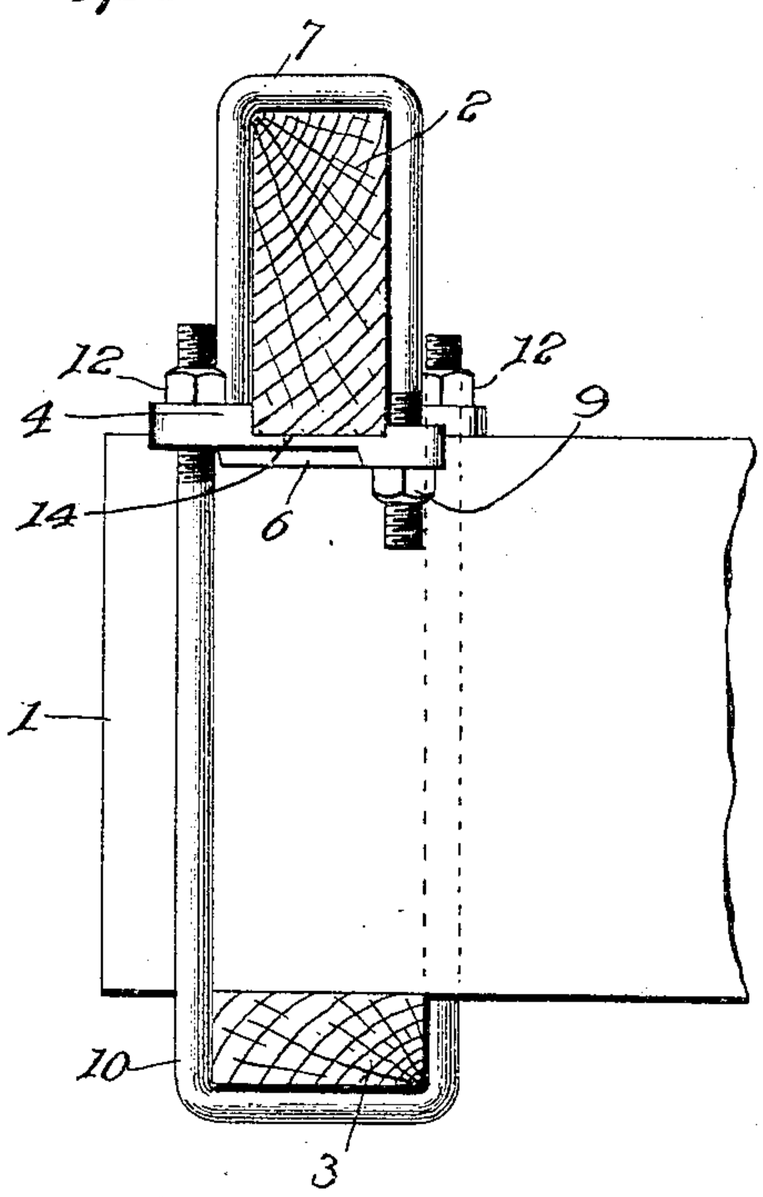
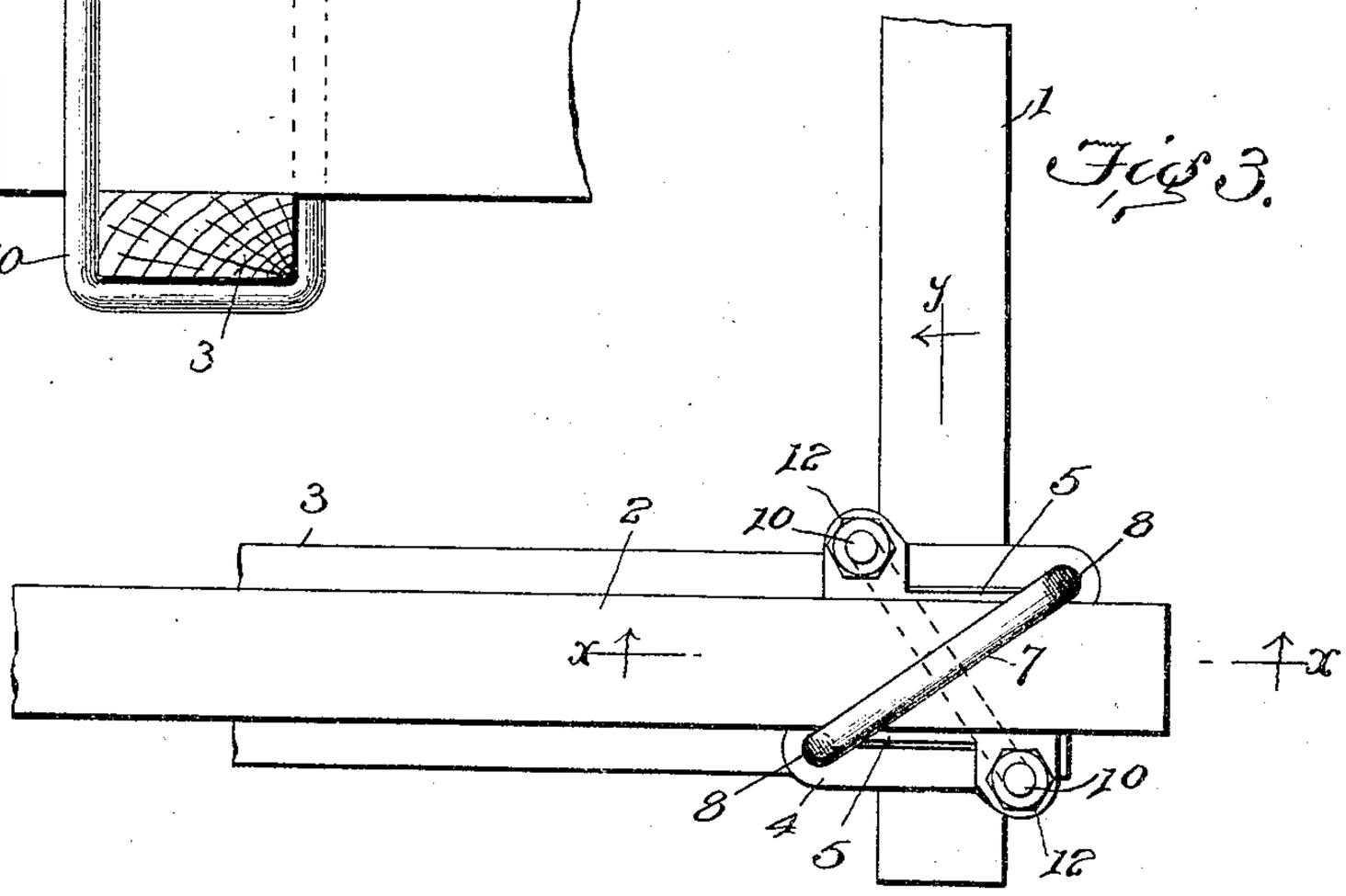


Fig. 3.



Witnesses

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4 SHEETS—SHEET 2.

Fig. 6.

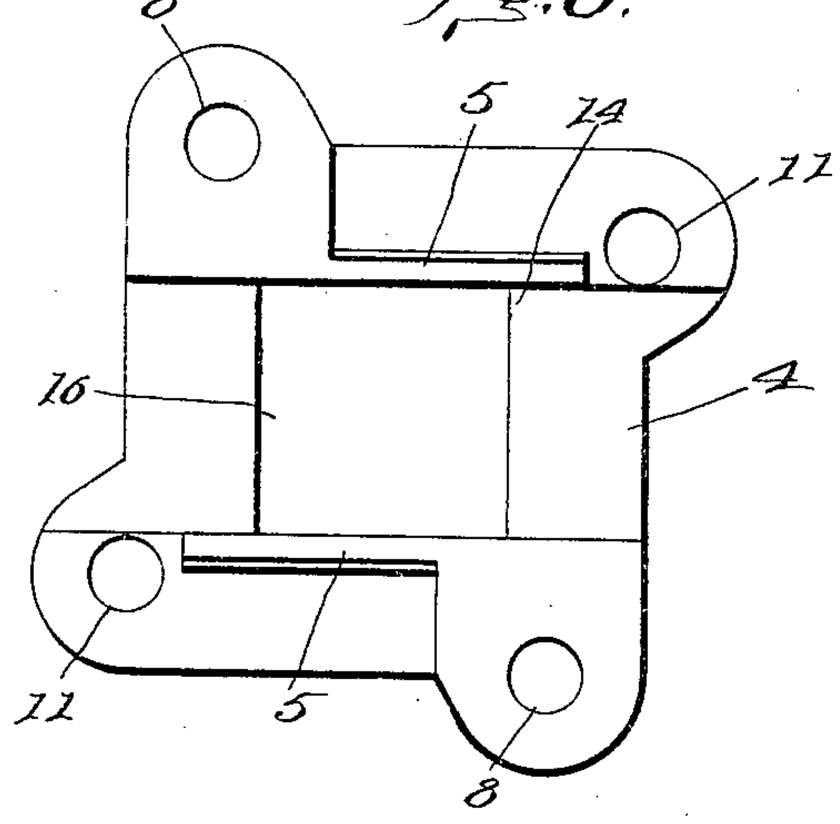


Fig. 4.

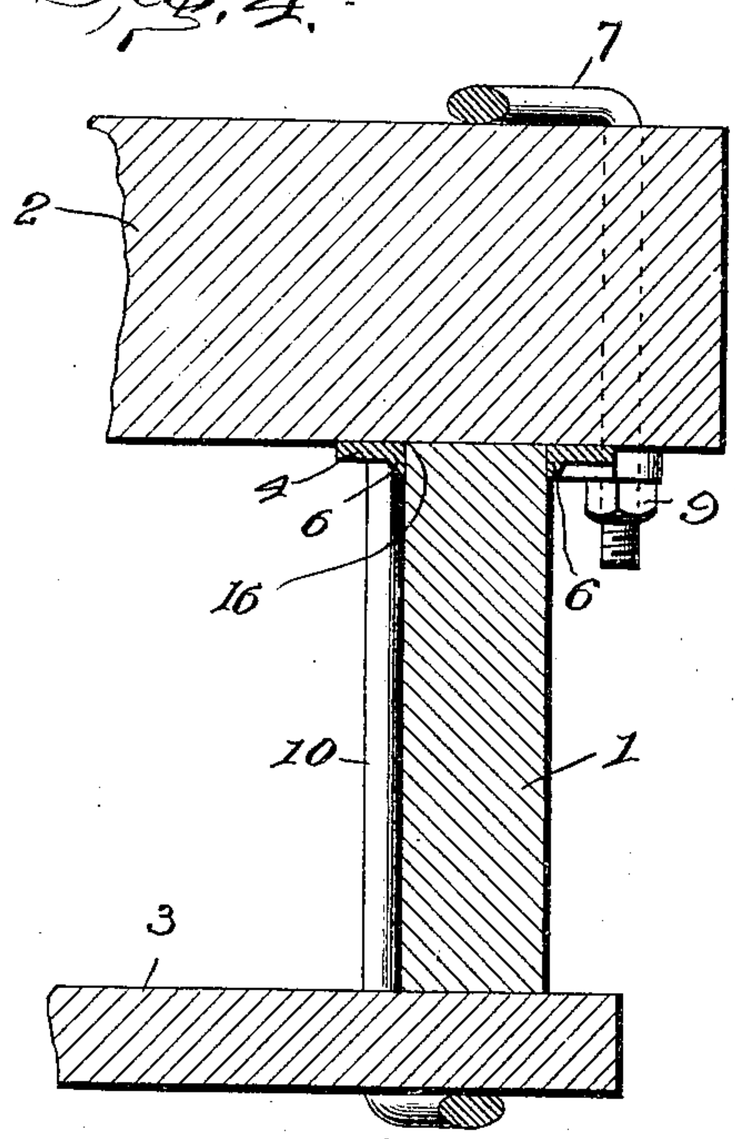


Fig. 5.

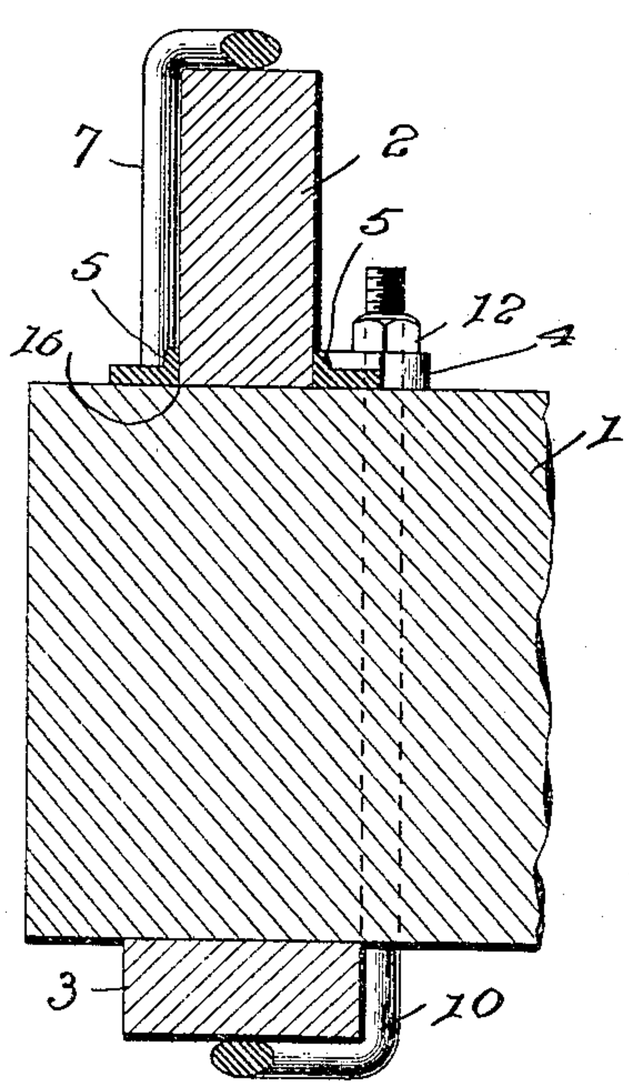
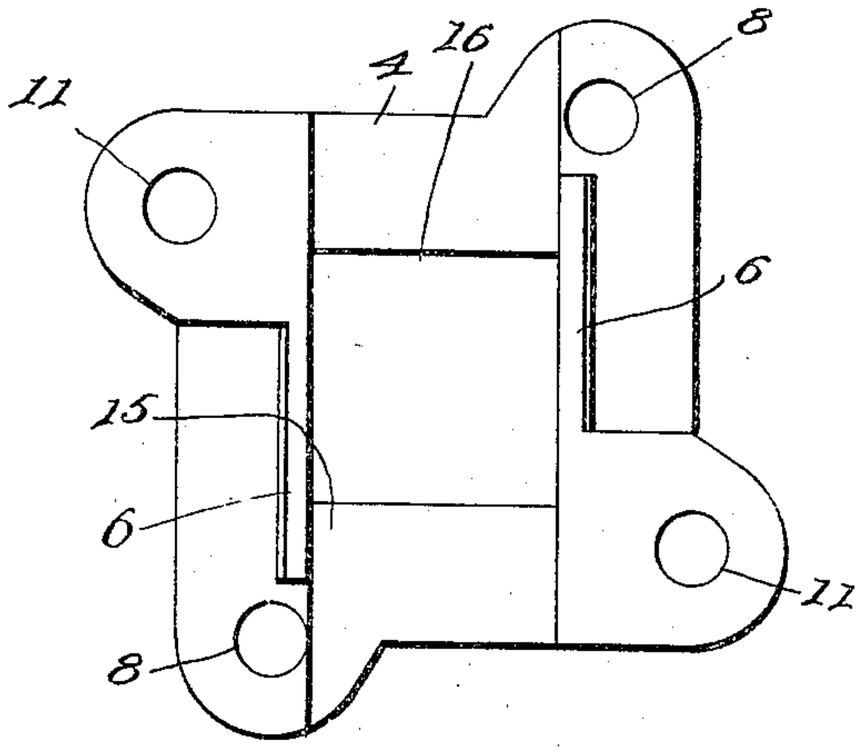


Fig. 7.



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No. 792,064. PATENTED JUNE 13, 1905.

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4 SHEETS—SHEET 3.

Fig. 8.

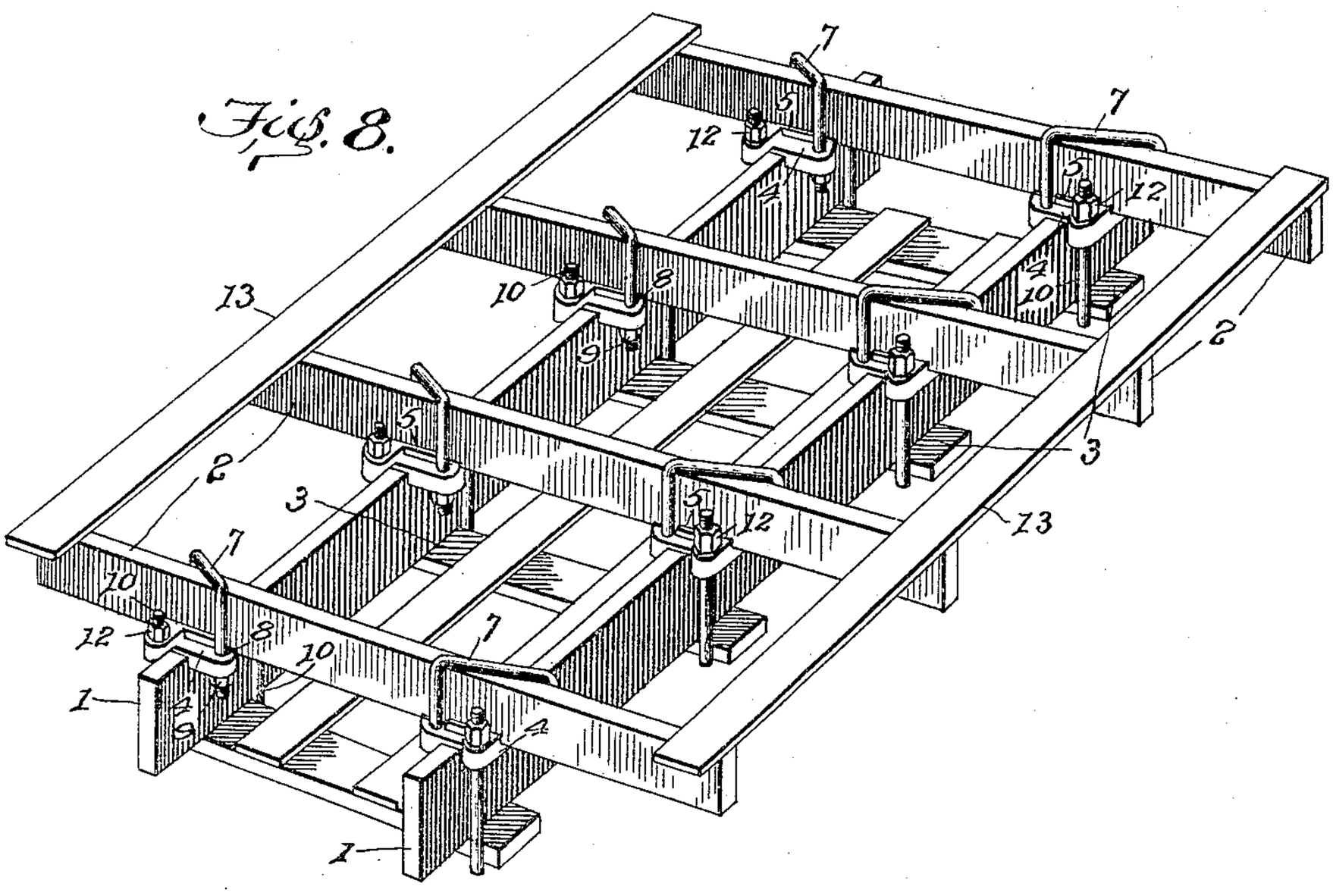
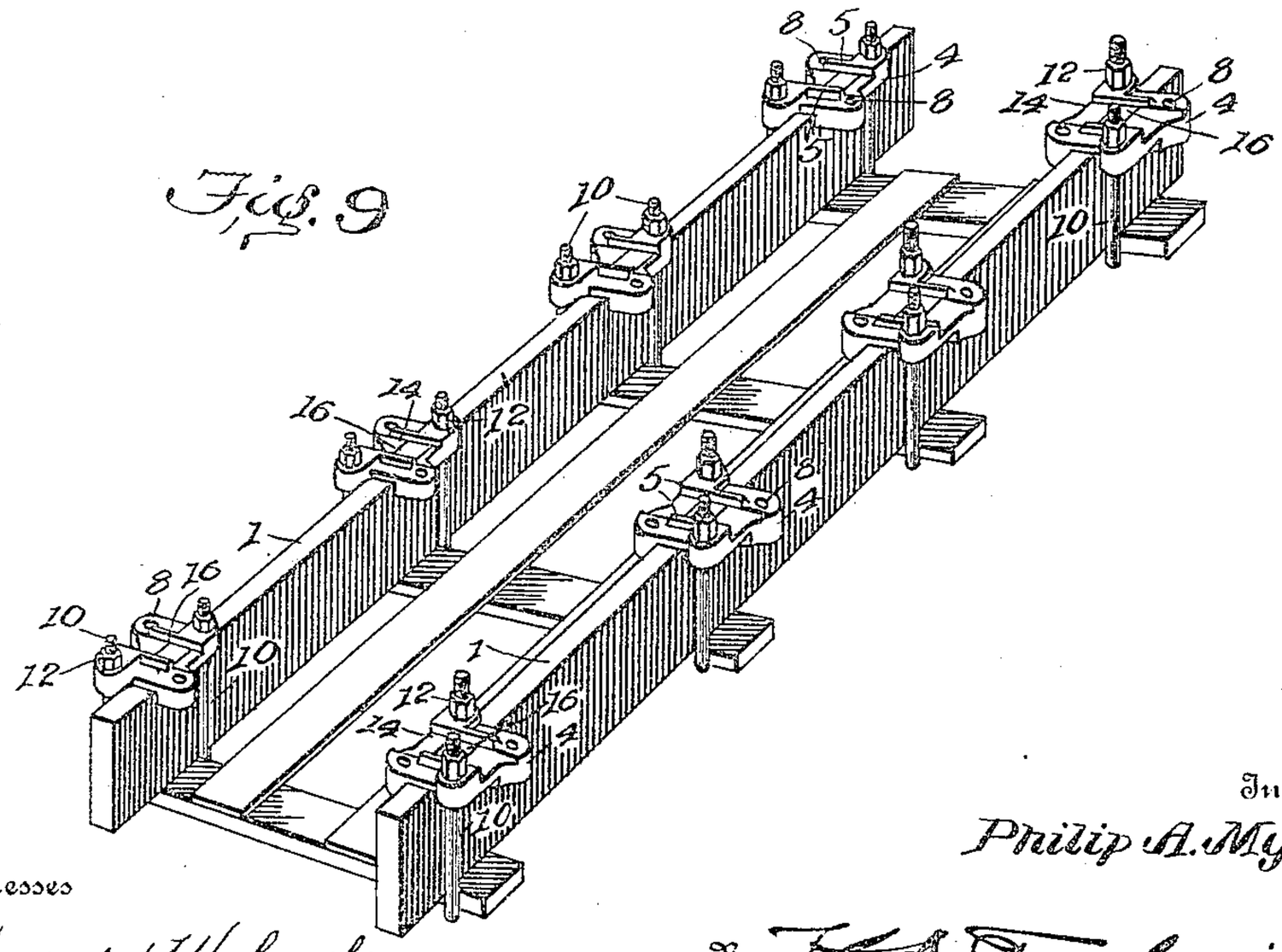


Fig. 9



Witnesses

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4 SHEETS—SHEET 4.

Fig. 12.

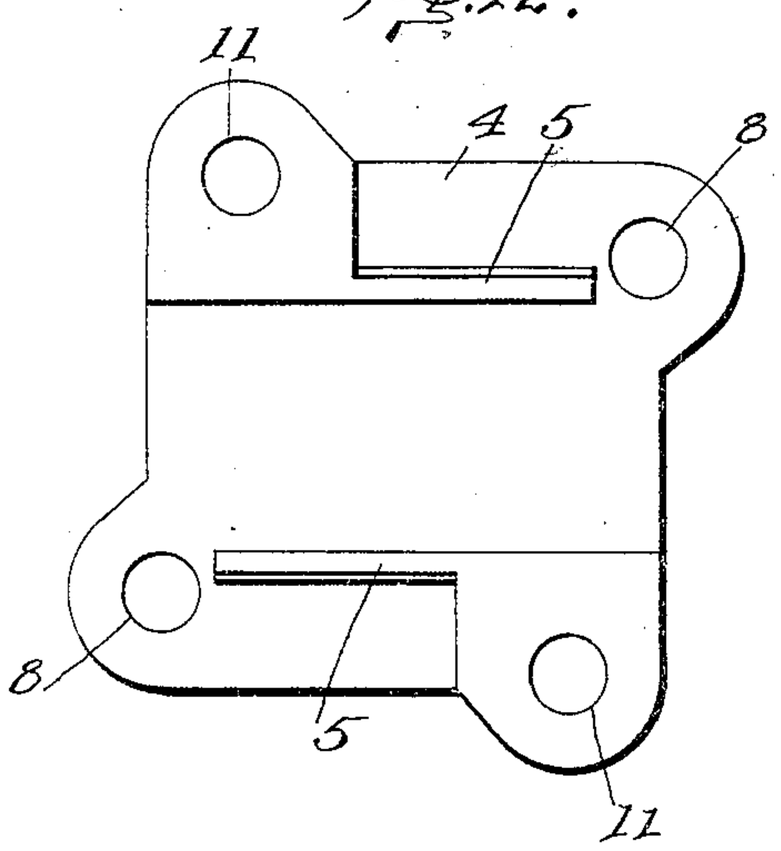


Fig. 10.

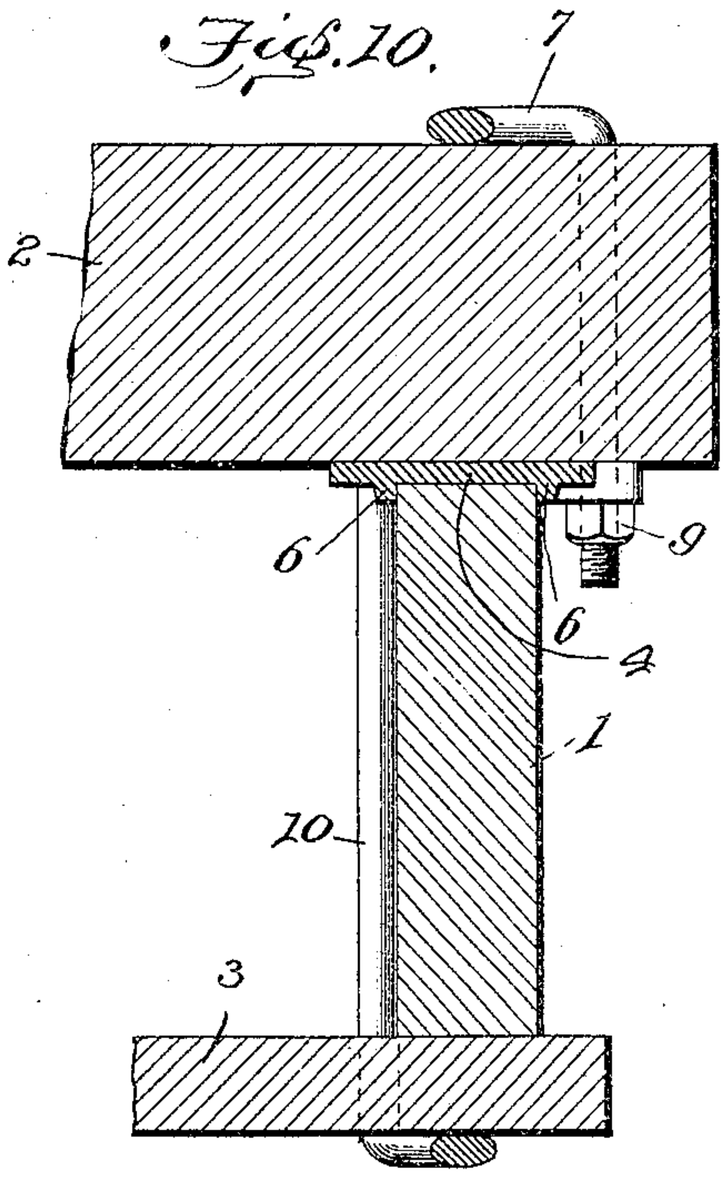


Fig. 11.

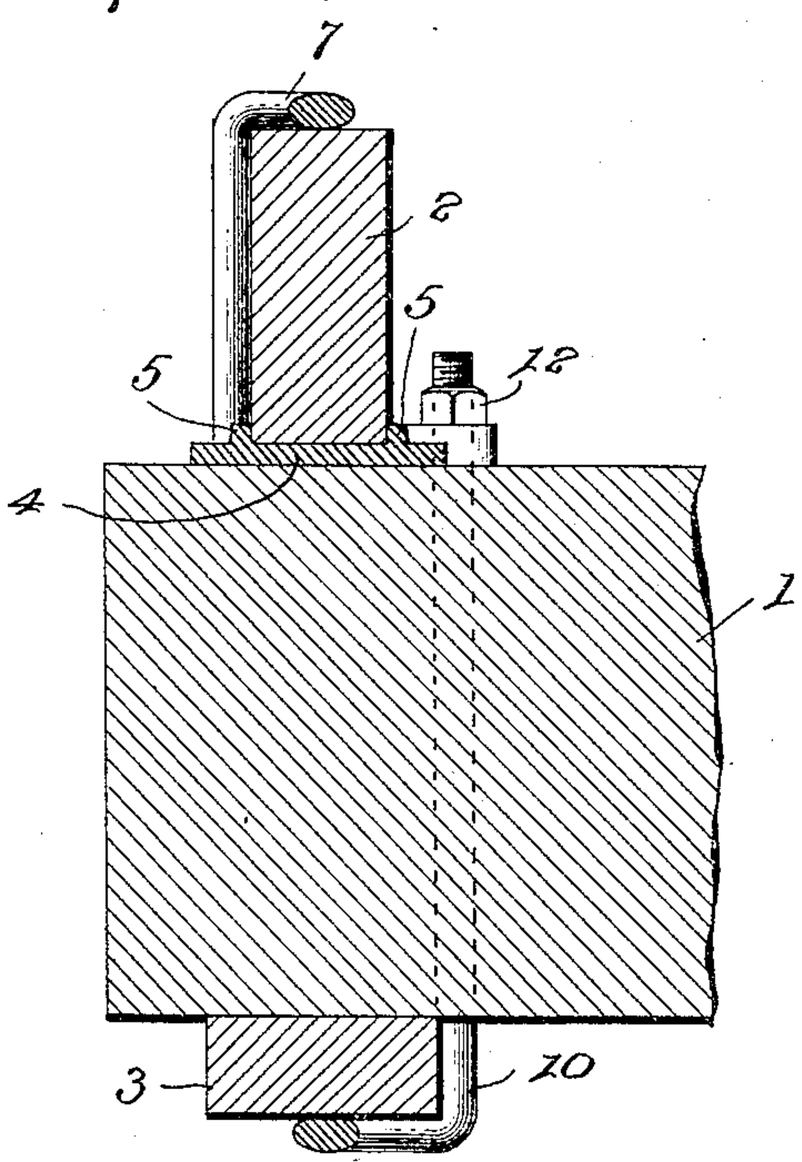
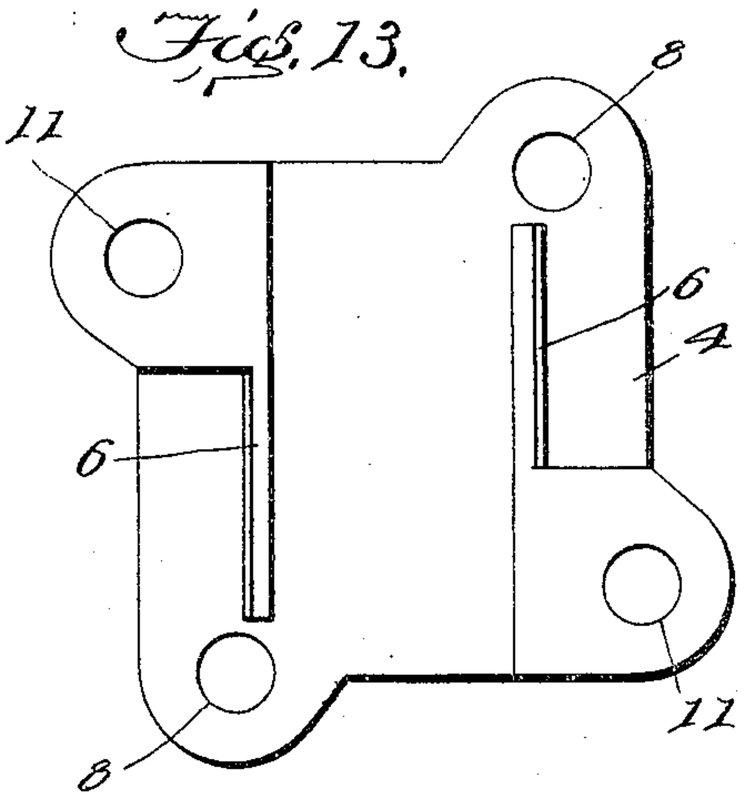


Fig. 13.



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No. 792,064. Patented June 13, 1905.

UNITED STATES PATENT OFFICE.

PHILIP A. MYERS, OF ASHLAND, OHIO, ASSIGNOR TO F. E. MYERS AND BRO., OF ASHLAND, OHIO, A COPARTNERSHIP.

HAY-RACK.

SPECIFICATION forming part of Letters Patent No. 792,064, dated June 13, 1905.

Application filed September 28, 1904. Serial No. 226,318.

To all whom it may concern:

Be it known that I, PHILIP A. MYERS, a citizen of the United States, residing at Ashland, in the county of Ashland and State of Ohio, have invented certain new and useful Improvements in Hay-Racks, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to hay-racks, and more particularly to the fittings or clamping-brackets whereby the longitudinal and transverse members of which the bed of the rack is composed are united.

My present invention has for its objects, first, to provide a fitting structure of a character such that the upper one of the three members which it unites may be disconnected from the remaining two members without affecting the connection between said remaining members; second, to provide a structure such that the several members may be readily united without the necessity of boring or otherwise forming any apertures for the connecting-bolts through the wooden frame members to be united, thus enabling the farmer to readily assemble the frame members without requiring the use of special tools or skill, requiring only an ordinary wrench, and, third, to provide a construction in which no bolt ends project beyond the bed either above or below, thus protecting said bolt ends and avoiding the objectionable projections above or below the body of the bed.

To these and other ends my invention consists in certain novel features, which I shall now proceed to describe and will then particularly point out in the claims.

In the accompanying drawings, Figure 1 is a rear elevation of one corner of a hay-rack having my improvements applied thereto in one form. Fig. 2 is a side elevation of the same. Fig. 3 is a plan view. Fig. 4 is a vertical sectional view taken on the line *x x* of Fig. 3 and looking in the direction of the arrows. Fig. 5 is a vertical sectional view taken on the line *y y* of Fig. 3 and looking in the direction of the arrows. Fig. 6 is a top plan view of the bed-plate. Fig. 7 is a bottom or inverted plan view of the same. Fig. 8 is a perspective view of a hay-rack having my invention applied thereto. Fig. 9 is a similar view with the top members removed; and Figs. 10, 11, 12, and 13 are views similar to Figs. 4, 5, 6, and 7, showing another form of bed-plate.

Hay-rack beds are usually constructed, as shown in Fig. 8, so as to comprise two longitudinal sills 1, a plurality of upper cross-beams 2, and a corresponding plurality of lower cross-beams or cross-ties 3, these members being of wood; and my invention relates to a set of fittings, one of which sets is employed to connect said three members at each of their meeting-points in the frame. To this end I employ a metal bed-plate, preferably in the form of a saddle, located at the junction of the upper cross-beam 2 and longitudinal sill 1, being provided on its upper side with ribs or flanges 5, which extend along and fit against the vertical sides of the top cross-beam 2, the under side of the plate being provided with two flanges or ribs 6, which extend along and fit against the vertical sides of the sill 1, and are therefore usually arranged at right angles to the flanges 5 on the upper side of said plate. It will be seen that the sill and cross-beam are thus bedded in the plate, so as to be firmly held at the proper angle to each other by the seats formed by the ribs or flanges of the bed-plate. The top cross-beam 2 is held in position relatively to the plate 4 by means of a clamping-bolt 7, preferably U-shaped, the cross or connecting piece of which bears against the top of the beam, while its parallel arms extend downward on opposite sides of the cross-beam, with which sides they are preferably, but not necessarily, in contact. The bed-plate 4 is provided with apertures 8, located at diagonally opposite corners of the plate and on opposite sides of the top cross-beam 2, said apertures being located immediately adjacent to the planes of the vertical walls of the member 2 and substantially tangent to the faces of the corresponding ribs 5, which abut against the vertical walls of said member 2. Said apertures are, however, so located as to lie some distance outward from the ribs 6 on the under

side of the plate 4. The threaded lower ends of the parallel arms of the clamping bolt or clip 7 pass downward through these apertures and their projecting ends receive nuts 9, by means of which the plate 4 may be clamped against the under side of the top cross-beam 2. It will be seen from an inspection of Fig. 1 that the location of the apertures 8 is such as to bring the nuts 9 a considerable distance away from the sides of the sill 1, so as to permit the ready application to said nuts of the wrench, by means of which they are operated.

The plate 4 is clamped to the sill 1 by means of a U-shaped clamping-bolt 10, which also serves to clamp the bottom cross-piece or cross-tie 3 to the under side of the sill 1. The connecting-piece of said clamping-bolt bears against the under side of the member 3, while the parallel straight portions of said bolt extend upward along each vertical side of the member 3 and also along each vertical side of the sill 1, as clearly shown in Figs. 1 and 2. The plate 4 is provided at diagonally opposite corners with apertures 11, which lie close to the vertical faces of the sill 1, being practically tangent to the inner faces of the respective ribs 6; but these apertures are located some distance outward from the ribs 5 on the upper side of the plate 4, and consequently some distance outward from the vertical sides of the top cross-beam 2, as clearly shown in Fig. 3. This permits the wrench to be readily applied to the nuts 12, which are mounted on the projecting upper ends of the parallel arms of the U-shaped bolt or clip 10, which pass upward through the apertures 11, so that when said nuts 12 are tightened the lower cross-tie 3 and sill 1 are firmly clamped to the plate 4.

It will be seen that the upper cross-beams which carry the side boards 13 may be readily removed from the sills by removing the nuts 9, and thereby disconnecting the U bolts or clips 7, thus permitting the top cross-beams and the upper part of the bed to be removed without affecting the connection between the sills and the bottom cross-ties which connect them, thus leaving these parts of the frame ready for use for other purposes than handling hay. It will further be noted that the loosening of either one of the U-bolts does not affect the connections depending on the other U-bolt, so that a loosening of one part does not effect a loosening of all the parts, as in the construction usually employed. Furthermore, it will be seen that there are no projecting bolt ends extending either below or above the body or bed of the rack, so that the rack may be placed upon the floor and readily moved around thereon, resting upon the smooth connecting portions of the bolts 10, a result which cannot be obtained where the threaded ends of the bolts project below the bottom of the rack, as in the ordinary construction. Neither are there any projecting ends above the top of the rack, which is obviously advantageous. The members of the rack require no boring of holes in order to properly unite them, so that the farmer can assemble the wooden parts without employing a carpenter or skilled laborer or without employing any special tools, a wrench being all that is necessary. It will be further noted that while the U bolts or clips are so arranged as to lie alongside of and firmly hold the frame members which they clamp to the plate 4 they are so offset from the member on the opposite side of said plate as to make them readily accessible with the wrench, while at the same time the bolt ends and nuts are so placed that they are out of the way and well protected against accident, injury, or displacement.

I prefer to construct the bed-plate 4 in the form of a saddle, as shown in Figs. 1 to 7, inclusive, in which construction the bed-plate is grooved or recessed upon each of its sides, the groove on the upper side being indicated at 14 and the groove on the under side at 15. These grooves cross each other at the same angle as that at which the beam and sill cross each other and are sufficiently deep to meet at their intersecting area, thus forming an aperture 16 through the center of the bed-plate. It arises from this construction that the two wooden members which are seated in the plate rest upon and are in contact with each other where they cross, so that a bearing of wood upon wood is obtained, while at the same time the plate extends outward beyond the area of these contact-surfaces of the wooden members and forms an additional extended support for them. In this construction it will be observed that no part of the plate lies between the crossed beams, and the structure is therefore rendered more compact; but although I prefer the saddle form of plate, which straddles both beams without lying between them, my invention is also applicable to the form of bed-plate shown in Figs. 10 to 13, inclusive, in which an intermediate plate is shown identical in all respects with the saddle-plate shown in Figs. 1 to 7, excepting for the fact that the grooves 14 and 15 are omitted, there being consequently no central aperture 16, so that a central web of metal, forming a part of the body of the bed-plate, lies between the wooden members, and these latter are not in contact with each other.

Although I prefer the saddle form of plate hereinbefore described, which permits the crossing frame members to contact with each other, I make no claim in the present application to this feature broadly, as the same forms the subject-matter of another application, filed by me the 28th day of September, 1904, Serial No. 226,319.

I do not wish to be understood as limiting myself to the precise details of construction

hereinbefore described, and shown in the accompanying drawings, as it is obvious that these details may be modified without departing from the principle of my invention.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a hay-rack, the combination, with beams crossing each other, of a plate located at the crossing of said beams, and separate bolts or clips, extending in opposite directions from said plate outside of the beams and independently clamping said beams, each bolt or clip being separably connected at its inner end with the plate and presenting a smooth exterior surface at its outer end, substantially as described.

2. In a hay-rack, the combination, with beams crossing each other, of a plate located at the crossing of said beams, and separate U-bolts extending in opposite directions from said plate, embracing the respective beams, and independently clamping said beams, each U-bolt having its points of connection with the plate located on opposite sides of the coincident surfaces of the beams, substantially as described.

3. In a hay-rack, the combination, with longitudinal sills, and upper and lower cross-beams crossing said sills, of a plate located at the crossing of the upper beam and sill, a clip for independently clamping said upper cross-beam to the upper side of said plate, and a second clip clamping the lower cross-beam and sill to the under side of said plate independently of the upper cross-beam, said clips passing outside of and being wholly external with relation to the frame members which they embrace, substantially as described.

4. In a hay-rack, the combination, with beams crossing each other, of a bed-plate located at the crossing of the beams, said bed-plate having seats in its opposite faces to receive the beams and hold them in proper angular relations, and separate bolts or clips for independently holding said beams in said seats, each bolt or clip being separably connected with the plate at its inner end and presenting a smooth exterior surface at its outer end, substantially as described.

5. In a hay-rack, the combination, with beams crossing each other, of a bed-plate located at the crossing of the beams, having seats on its opposite sides to receive the beams and hold them in proper angular relations, and openings in the four corners of said plate, a U-bolt embracing one of said beams, extending through two diagonally opposite openings of the plate, and provided with nuts on the side of the plate opposite its beam, and a second U-bolt embracing the other beam, passing through the two other plate-openings, and provided with nuts on the other side of said plate, substantially as described.

6. In a hay-rack, the combination, with beams crossing each other, of a bed-plate located at the crossing of the beams, having seats on its opposite sides to receive the beams and hold them in proper angular relations, and openings in the four corners of said plate, a U-bolt embracing one of said beams, extending through two diagonally opposite openings of the plate, and provided with nuts on the side of the plate opposite its beam, and a second U-bolt embracing the other beam, passing through the two other plate-openings, and provided with nuts on the other side of said plate, the apertures for the bolt clamping each beam being offset from the side of the other beam, substantially as described.

7. In a hay-rack, the combination, with beams crossing each other, of a saddle located at the crossing of the beams and provided with seats in its opposite faces to receive said beams and hold them in proper angular relations, said seats intersecting to form a central opening coincident with the crossing surfaces of the beams, and separate bolts or clips, extending in opposite directions from said saddle and independently holding said beams in position in the seats thereof, said bolts or clips passing outside of and being external with relation to the beams which they embrace, substantially as described.

8. In a hay-rack, the combination, with beams crossing each other, of a saddle located at the crossing of said beams, provided with seats in its opposite faces to receive said beams and hold them in proper angular relations, said seats intersecting to form a central opening coincident with the crossing surfaces of the beams, said saddle being provided with openings in its four corners, a U-bolt embracing one of said beams, extending through two diagonally opposite openings of the saddle, and provided with nuts on the opposite side thereof, and a second U-bolt embracing the other beam, passing through the two other saddle-openings, and provided with nuts on the other side of said saddle, substantially as described.

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

PHILIP A. MYERS.

Witnesses:
MILTON G. MILLER,
F. O. HAMILTON.