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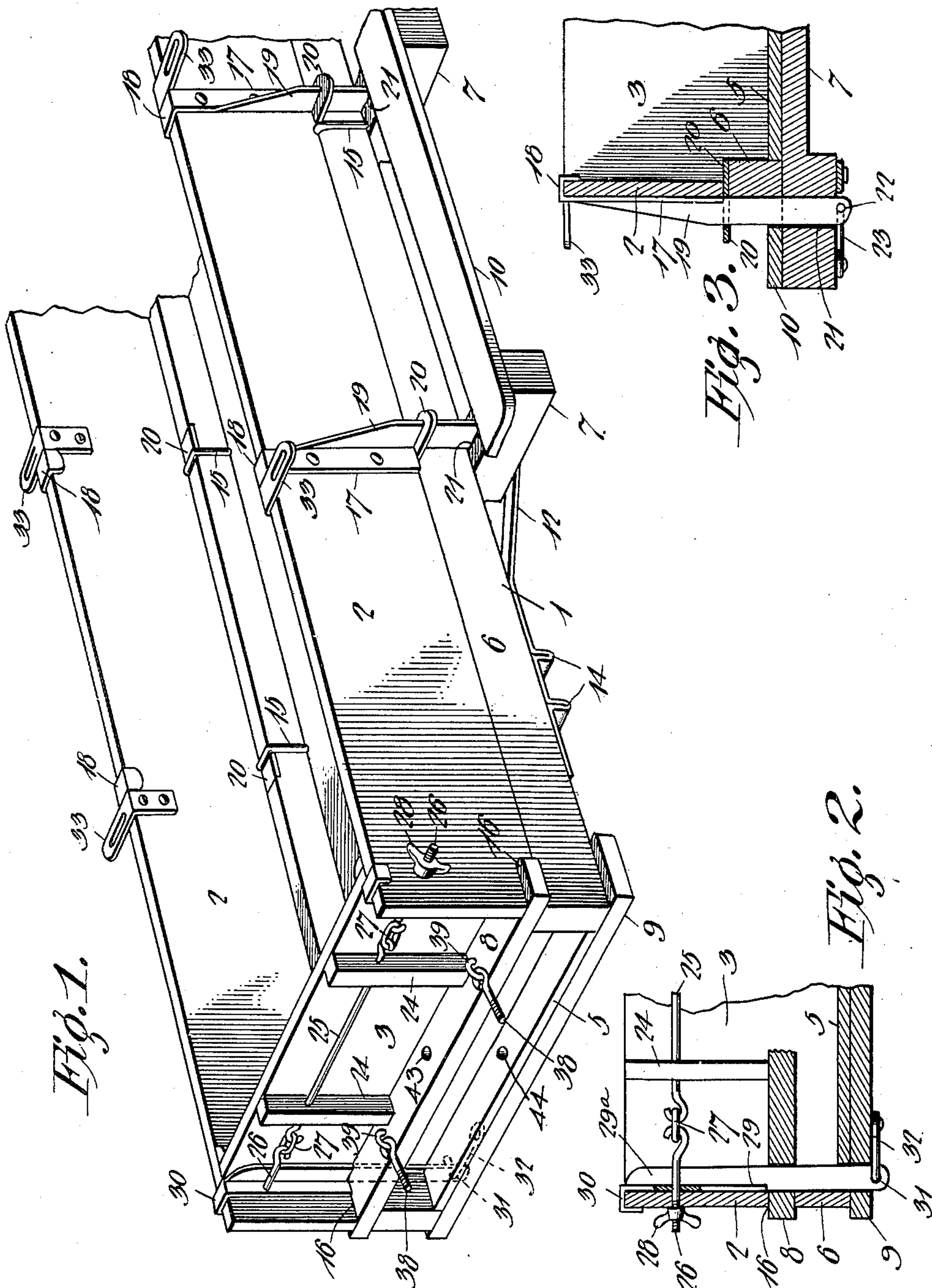
Patented Nov. 19, 1901.

E. R. MAINE.
KNOCKDOWN WAGON BOX AND HAY RACK.

(Application filed July 17, 1901.)

(No Model.)

2 Sheets—Sheet I.



Witnesses

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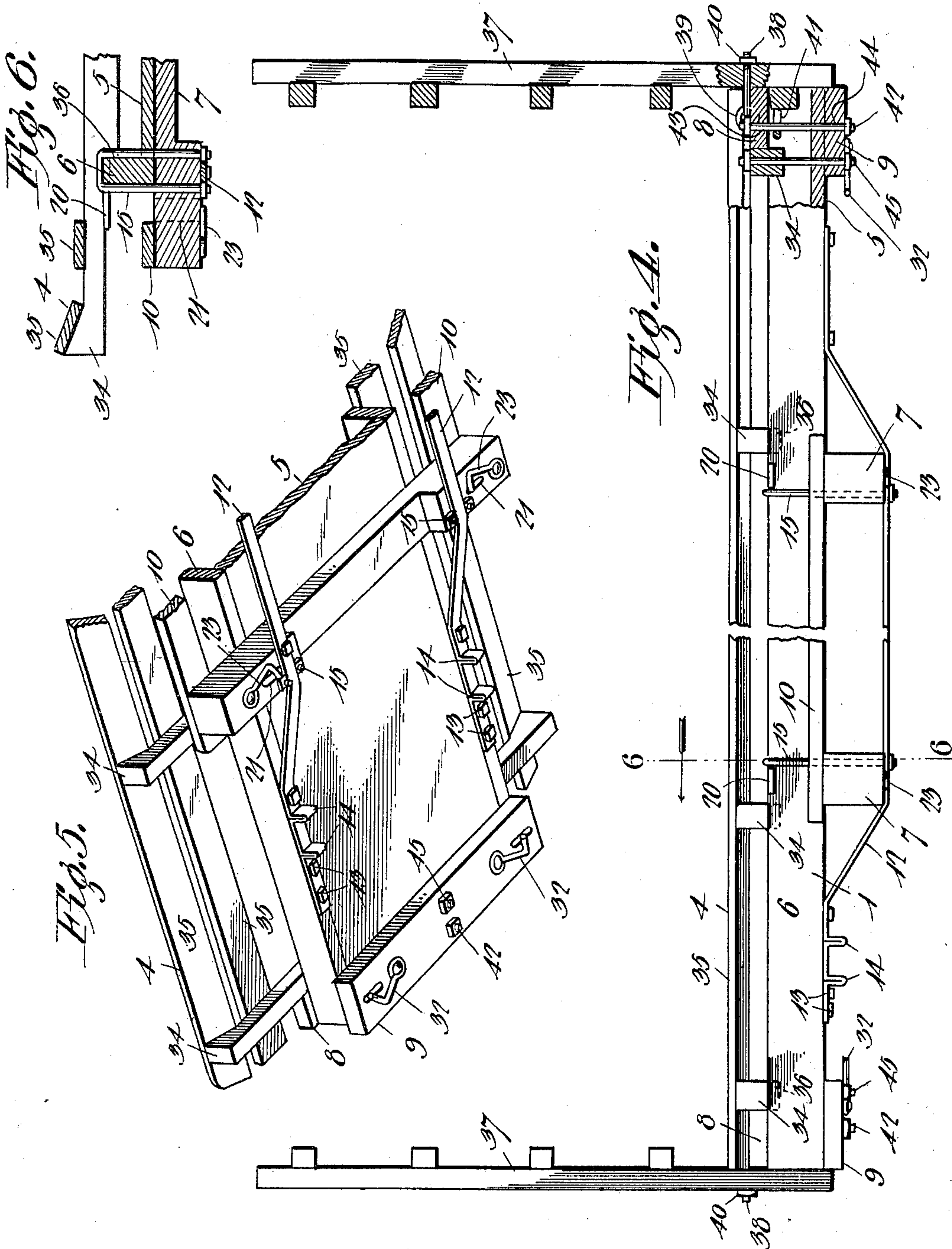
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UNITED STATES PATENT OFFICE.

EDWIN R. MAINE, OF MAINESBURG, PENNSYLVANIA.

KNOCKDOWN WAGON-BOX AND HAY-RACK.

SPECIFICATION forming part of Letters Patent No. 686,747, dated November 19, 1901.

Application filed July 17, 1901. Serial No. 68,639. (No model.)

To all whom it may concern:

Be it known that I, EDWIN R. MAINE, a citizen of the United States, residing at Mainesburg, in the county of Tioga and State of Pennsylvania, have invented a new and useful Knockdown or Separable Wagon-Box and Hay-Rack, of which the following is a specification.

The invention relates to improvements in combined wagon-boxes and hay-racks.

The object of the present invention is to provide a combined wagon-box and hay-rack which will be simple, inexpensive, strong, and durable and which at the same time will be light and easily handled and adapted to be readily arranged to form either a wagon-box or a hay-rack.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is a perspective view, the parts being arranged to form a wagon-box. Fig. 2 is a detail transverse sectional view of one end of the same. Fig. 3 is a similar view, the section being taken at a point between the ends of the wagon. Fig. 4 is a side elevation, partly in section, the parts being arranged to form a hay-rack. Fig. 5 is a perspective view of one end of the same, showing the bottom of the base or supporting-frame. Fig. 6 is a detail sectional view on the line 6 6 of Fig. 4.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 designates a base or supporting-frame adapted to receive either sides and ends 2 and 3 of a wagon-body or a hay-rack frame 4 to form either a wagon-body or a hay-rack, as desired. The base or supporting-frame comprises a bottom 5, longitudinal side beams or bars 6, central transverse bars or beams 7, and end transverse bars 8 and 9. The longitudinal side bars of the base or supporting-frame are secured to the bottom 5 in any suitable manner, and they extend upward from the upper face of the same, as clearly illustrated in Fig. 5 of the accompanying drawings, and the end transverse bars 8 and 9 are arranged at the upper and lower edges

of the longitudinal bars, as clearly illustrated in Fig. 5 of the accompanying drawings.

The transverse bars or beams 7, which are located between the ends of the base or supporting-frame, extend laterally beyond the same to support a step 10 and are provided with enlarged ends, forming struts for longitudinal truss-bars 12, located beneath and secured at their ends to the side bars 6 of the base or supporting-frame. The truss-rods extend across the space between the intermediate transverse bars or beams 7, and they are provided in advance and in rear of the same with inclined portions extending from the lower faces of the enlarged ends of the bars or beams 7 to the lower edges of the longitudinal side bars 6. The ends of the truss rods or bars are perforated for the reception of suitable fastening devices 13, and these truss rods or bars stiffen and support the base or frame 1 and enable a light base or frame to be constructed of sufficient strength to withstand all the strains incident to its use. The truss rods or bars are provided at one end of the frame with depending lugs 14, formed by bending the metal, as illustrated in Fig. 5 of the accompanying drawings, and adapted to receive the adjacent bolster of a running-gear, whereby the base or frame is securely interlocked therewith. The other ends of the truss rods or bars are smooth, as shown, to permit the running-gear to be lengthened or shortened and to adapt the base or frame to running-gears varying in length. The transverse bars or beams 7 are secured to the longitudinal side bars by vertical clips 15, receiving the said longitudinal bars 6 and extending through the enlarged ends of the transverse bars or beams 7 and provided at the lower ends of their sides with nuts, which are arranged at opposite sides of the truss rods or bars, as clearly shown in Fig. 5. The truss rods or bars may also be bolted to the enlarged ends of the transverse bars or beams 7, or they may be secured to the same in any other suitable manner.

The sides and ends 2 and 3 of the wagon-body are adapted to be mounted upon the base or supporting-frame, as illustrated in Fig. 1 of the accompanying drawings, and the sides 2, which fit against the upper edges of the longitudinal bars 6, are recessed at their

ends at 16 to receive the upper transverse end bars. The sides are provided between their ends with vertical bars or wagon-standards 17, constructed of metal and provided at their upper ends with hooks 18, which engage over the upper edges of the sides of the wagon-body. These vertical bars or wagon-standards, which are suitably secured to the outer faces of the sides 2 of the wagon-body, are preferably constructed of flanged metal and are provided with depending portions 19, consisting of longitudinal flanges extending outward at right angles to the upper body portion of the bars or standards and passing through openings of horizontal keepers 20 and through slots 21 of the enlarged ends of the intermediate transverse bars or beams 7. The lower ends of the depending portions of the upright bars or standards 17 are provided with perforations 22 for the reception of locking devices 23, preferably consisting of hooks pivotally mounted on the lower faces of the enlarged ends of the transverse bars or beams 7 and adapted to be swung into and out of engagement with the wagon-standards. Any suitable means may be employed for holding the hooks in engagement with the wagon-standards or any other construction of locking device may be employed, if desired. The horizontal keepers 20 consist of metal arms or plates secured to the longitudinal bars 6 at the upper edges thereof, and the lower portions of the wagon-standards 17 are supported by the outer walls of the slots 21 and by the step 10 and by the said keepers 20, whereby the sides of the wagon-body are effectually prevented from spreading.

The ends 3 of the wagon-body which have their lower edges supported upon the bottom 5 of the base or supporting-frame extend across the space between the sides 2 and are provided at their outer faces with intermediate vertical cleats 24, which rest upon the upper transverse end bar 8, as clearly shown in Fig. 1, and which are perforated for the reception of the central section 25 of a transverse rod, which connects the sides of the wagon-body. The rod is composed of the said central section 25 and end sections 26, and the adjacent ends of these sections are provided with hooks and are connected by links 27. The outer terminals of the end sections are threaded for the reception of thumb-nuts 28, arranged on the outer faces of the sides of the wagon-body. The sections of the transverse end rod may be readily separated, and this construction greatly facilitates mounting the sides and ends upon the base or supporting-frame and removing them therefrom. The ends are further supported by vertical cleats 29^a and standards 29, having flanged upper portions and provided with hooks 30, which engage over the upper edges of the sides of the wagon-body. The upper body portions of the wagon-standards 29 fit against the upper transverse end bar 8, and the depending portions extend downward through

slots of the bottom 5 and the lower end bar 9, the upper end bar 8 being recessed at its inner edge for this purpose. The lower ends of the standards 29 are provided with perforations 31, which are engaged by fastening devices 32, consisting of pivoted hooks, similar to those heretofore described; but any suitable fastening devices may be employed for locking the wagon-standards 29 to the base or supporting-frame 1. The standards 29 are arranged in the corners of the wagon-body on the exterior of the end-gates, as clearly shown in Fig. 1. The upper body portions of the wagon-standards 17 and 29, which fit against the sides 2 of the wagon-body, may be extended the entire length of the standards, if desired. The sides of the wagon-body are provided at their upper edges with horizontal keepers 33, located adjacent to the intermediate wagon-standards 17 and provided with slots adapted to receive stakes or bars of the sides of a top box or extension of the wagon-body. The sides and ends 2 and 3 may be quickly applied to the base or supporting-frame, and they may be readily removed therefrom when desired, and the said sides and ends may be compactly stored when not in use.

The hay-rack frame, which is detachably mounted on the base or supporting-frame, as illustrated in Figs. 4 and 5 of the drawings, comprises a series of transverse connecting-bars 34 and longitudinal slats or bars 35, secured to the upper faces of the transverse bars 34 and adapted to form the sides of the hay-rack. The transverse bars, which extend beyond the side bars 6 of the base or supporting-frame, have enlarged ends with inclined upper faces to set the outer longitudinal slats or bars at an angle, as clearly shown in Fig. 6. These transverse bars are also provided adjacent to their ends with shoulders 36, engaging the inner faces of the longitudinal bars of the base or supporting-frame and adapted to hold the hay-rack frame against lateral movement. These shoulders are formed by recessing the end portions of the transverse connecting-bars at the lower edges of the same, and the central portions of the connecting-bars 34 extend downward between the longitudinal side bars 6.

The end standards 37 are secured to the ends of the base or supporting-frame by eyebolts 38, linked into staples 39 of the upper transverse end bars 8 and detachably connected to the standards 37 by means of nuts 40, as clearly illustrated in Fig. 4 of the accompanying drawings. The eyebolts and the staples hinge the standards to the base or supporting-frame and are adapted to permit the same to swing downward, and they are located a short distance above the lower ends of the standards which abut against the lower transverse bars 9 and the ends of the bottom 5. The standards are provided below the eyebolts with loops or staples 41, extending horizontally, as clearly shown in Fig. 4, and

adapted to be engaged by central bolts or rods 42, which pass through central perforations 43 and 44 of the upper and lower bars 8 and 9 and the bottom 5 of the base or supporting-frame. The fastening device 42 locks the hay-rack standard rigidly in a vertical position. The hay-rack frame is also secured to the base or supporting-frame by fastening devices 45, passing through the end transverse bars 34 and through the bottom 5 and the lower transverse bars 9, as clearly shown in Fig. 4, and these fastening devices 42 and 45 may be provided with nuts having handles, or any other suitable fastening devices may be employed. The hay-rack is adapted to be readily mounted on and removed from the base or supporting-frame, and by withdrawing the fastening devices 42 the hay-rack standards may be folded inward upon the hay-rack frame.

It will be seen that the combined wagon-box and hay-rack is exceedingly simple and inexpensive in construction, that the parts may be readily arranged to form either a wagon-box or a hay-rack, and that when not in use the parts may be compactly arranged for storing. It will also be apparent that the sides of the wagon-body are firmly supported and prevented from spreading, that the base or supporting-frame is stiffened by the trusses formed by the rods 12 and the enlarged ends of the bars 7, and that the said trusses effectually prevent the base or supporting-frame from sagging.

The clips 15, which receive the side bars 6, obviate the necessity of perforating the same, and the intermediate transverse bars 34 are not perforated for fastening devices for securing the hay-rack frame to the base or supporting-frame, and by this construction these parts may be made much lighter and stronger.

Changes in the form, proportion, size, and the minor details of construction within the scope of the appended claims may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

What I claim is—

1. In a device of the class described, a base or supporting-frame designed to receive either a hay-rack frame or the sides and ends of a wagon-body and comprising the bottom, the longitudinal side bars, the transverse end bars arranged in pairs at the ends of the base or supporting-frame and located one above the other, the intermediate transverse beam 7 arranged beneath the longitudinal side bars and provided with enlarged ends, and the truss-rods connecting the enlarged ends of the intermediate transverse beams and secured to the longitudinal side bars, substantially as described.

2. In a device of the class described, the combination of the base or supporting-frame having side bars and provided with intermediate transverse bars or beams having enlarged ends forming struts, said side bars be-

ing adapted to receive either the sides or ends of a wagon-body, or a hay-rack frame, and the longitudinal truss rods or bars located at opposite sides of the base or frame and extending across the space between the transverse bars or beams and secured at their ends to the side bars, substantially as described.

3. In a device of the class described, the combination of the base or supporting-frame designed to receive either the sides and ends of a wagon-body or a hay-rack frame, and provided with laterally-extending intermediate transverse bars or beams having enlarged ends forming struts, and the longitudinal truss rods or bars extending across the space between the enlarged ends of the transverse bars or beams and secured at their terminals to the base or supporting-frame and provided with depending lugs formed by folding the metal of the bars or rods and arranged in pairs to engage a wagon-bolster, substantially as described.

4. In a device of the class described, the combination of the base or supporting-frame adapted to receive the wagon-body sides and ends or a hay-rack frame and comprising the bottom, the longitudinal side bars, the intermediate transverse bars or beams having enlarged ends, and the upper and lower transverse end bars arranged at the upper and lower edges of the longitudinal side bars, and the longitudinal truss rods or bars located at opposite sides of the base or frame and connecting the intermediate transverse bars or beams and extending from the enlarged ends thereof to the longitudinal side bars and secured to the lower faces of the latter at points between the ends of the same, substantially as described.

5. In a device of the class described, the combination of the base or supporting-frame comprising the bottom, the longitudinal side bars, the intermediate transverse bars having enlarged ends, and the upper and lower transverse end bars arranged at the upper and lower edges of the longitudinal bars, the clips embracing the longitudinal bars and extending through the intermediate transverse bars or beams and provided at the lower faces of the latter with nuts, and the longitudinal truss rods or bars extending between the nuts and secured to the longitudinal bars and having their central portions offset from the same by the enlarged ends of the transverse bars or beams, substantially as described.

6. In a device of the class described, the combination of the base or supporting-frame provided with transverse bars or beams having slots, the exterior keepers extending from the frame and located above the said slots, the step 10 connecting the transverse bars or beams and arranged at the outer walls of the slots, the side 2 provided with wagon-standards extending through the keepers and through the said slots and supported by the said step, and fastening devices mounted on

the transverse bars or beams and detachably engaging the wagon-standards, substantially as described.

7. In a device of the class described, the combination of the base or supporting-frame comprising the bottom, the longitudinal side bars, the transverse end bars arranged in pairs at the ends of the side bars and located above and below the same, and the transverse beams located beneath the side bars and extending beyond the same and provided with slots, the horizontal keepers 20 extending from the upper edges of the side bars and located above the said slots, the wagon sides 2 having standards extending through the keepers and through the said slots, fastening devices engaging the lower ends of the standards, and the steps secured to the transverse beams at the outer edges of the standards and supporting the same, substantially as described.

8. In a device of the class described, the combination of the base or supporting-frame provided with longitudinal side bars and having intermediate transverse bars or beams provided with slots, the horizontal keepers secured to the base or frame at the upper edges of the longitudinal side bars and located above the said slots, and the wagon-standards secured to the outer face of the wagon side and abutting against the said keepers and provided with flanges forming depending portions extending through the keepers and the slots of the transverse bars or beams, substantially as described.

9. In a device of the class described, the combination of the base or supporting-frame having longitudinal side bars and provided with transverse bars or beams having slots, the horizontal keepers extending from the upper edges of the longitudinal side bars, the wagon sides, and the wagon-standards secured to the exterior of the sides and provided at their upper ends with hooks for engaging the same, and extending through the keepers and through the slots of the transverse bars or beams, substantially as described.

10. In a device of the class described, the combination of a base or supporting-frame having longitudinal side bars and provided at its ends with upper and lower transverse bars, the wagon sides mounted upon the longitudinal bars, the ends arranged upon the base or supporting-frame and interposed between the sides and provided with cleats arranged upon the upper transverse end bars, and means for connecting the sides, substantially as described.

11. In a device of the class described, the combination of a base or supporting-frame having transverse end bars, sides mounted upon the base or supporting-frame, ends arranged between the sides and having cleats fitting against the end bars, standards secured to the ends and provided at their upper terminals with hooks engaging the sides of the wagon-body, said standards being also

secured to the base or supporting-frame, and means for connecting the wagon-body sides, substantially as described.

12. In a device of the class described, the combination of a base or supporting-frame, the wagon sides mounted thereon, the end 3 interposed between the sides, the corner-standards arranged in the angles formed by the sides and end and secured to the former, said standards being extended through the base or supporting-frame, cleats mounted on the wagon sides and arranged at the inner face of the end 3, and fastening devices detachably engaging the standards, substantially as described.

13. In a device of the class described, the combination of a base or supporting-frame, the wagon sides secured to the base or supporting-frame and provided with corner-standards 29 having hooks at their upper ends and provided with depending portions extending through the frame or base, fastening devices mounted on the latter and engaging the standards, the end 3 arranged between the corner-standards and cleats of the sides and provided at its outer face with cleats, and the transverse rod connecting the sides and passing through the cleats of the end, substantially as described.

14. In a device of the class described, the combination of a base or supporting-frame provided with longitudinal side bars and having upper and lower transverse end bars, the sides mounted upon the longitudinal side bars, the end 3 arranged between the sides and provided with cleats arranged upon the upper end bar, the corner-standards mounted upon the sides and provided at their upper ends with hooks and having flanges forming depending portions extending through the base or supporting-frame, and fastening devices mounted on the latter and engaging the ends of the standards, substantially as described.

15. In a device of the class described, the combination of a base or supporting-frame provided with longitudinal side bars and having upper and lower transverse end bars, said base or supporting-frame being adapted to receive either a hay-rack frame or wagon-body sides and ends, a hay-rack standard provided at a point above its lower end with an eyebolt hinged to the upper face of the adjacent upper end bar and detachably connecting the standard to the same, said eyebolt being also adapted to permit the standard to fold down upon the frame, and means for connecting the standard with the base or supporting-frame at a point below the eyebolt, whereby the standard is rigidly secured in an upright position, substantially as described.

16. In a device of the class described, the combination of a base or supporting-frame provided with upper and lower transverse end bars, a hay-rack standard provided with a loop extending between the end bars, means for hinging the hay-rack standard detachably

to the upper end bar, and a fastening device passing through the end bars and engaging the loop of the standard, substantially as described.

5 17. In a device of the class described, the combination of a base or supporting-frame provided with longitudinal side bars and having upper and lower end bars, a hay-rack frame mounted upon the base or supporting-
10 frame, the hay-rack standards detachably hinged to the upper transverse end bars and provided with loops or eyes extending between the end bars, and fastening devices for securing the hay-rack frame to the base or
15 supporting-frame and for engaging the loops or eyes of the standards, substantially as described.

18. In a device of the class described, the combination of a base or supporting-frame
20 having longitudinal side bars and provided with upper and lower end bars, sides 2 mounted upon the longitudinal bars and provided at their inner faces with cleats, the corner-standards spaced from the cleats and mounted
25 on the sides 2, the end 3 arranged in the ways formed by the cleats and the corner-stand-

ards and provided with cleats 24 arranged upon the upper transverse end bar, and the transverse rod comprising the end sections secured to the sides 2 and provided with hooks, 30 the central section mounted on the cleats 24 and having hooks, and links engaging the hooks, substantially as described.

19. In a device of the class described, the combination of a base or supporting-frame 35 having a bottom and provided with longitudinal side bars and upper and lower transverse end bars, a hay-rack frame mounted upon the base or supporting-frame and provided with transverse bars, and the bolts 45 40 passing through the end bars and the bottom of the hay-rack frame and through the lower end bars of the base or supporting-frame, substantially as described.

In testimony that I claim the foregoing as 45 my own I have hereto affixed my signature in the presence of two witnesses.

EDWIN R. MAINE.

Witnesses:

LULA B. AUSTIN,

CHARLES T. BALDWIN.