June 16, 1925. 1,542,048

J. FORESTER

MECHANIC'S HORSE

Filed Aug. 6, 1923

Fig. 1.

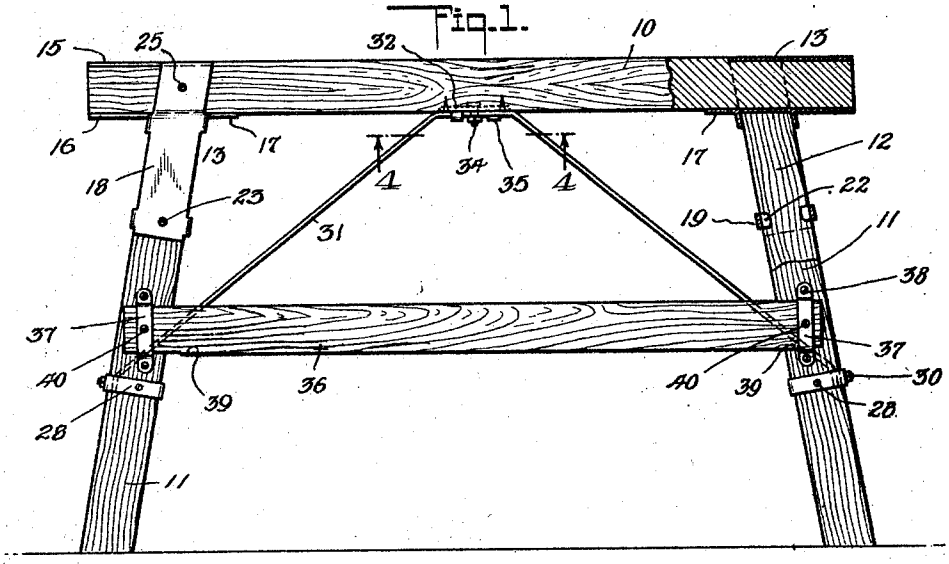


Fig. 2.

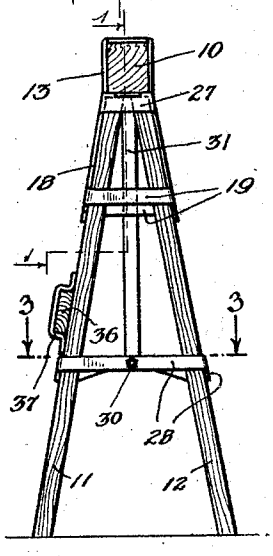


Fig. 4.

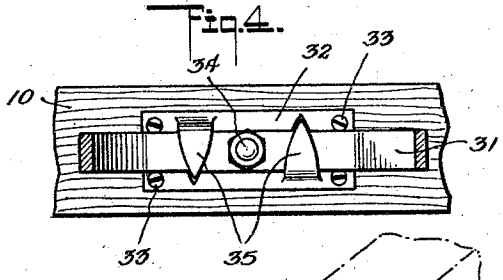


Fig. 5.

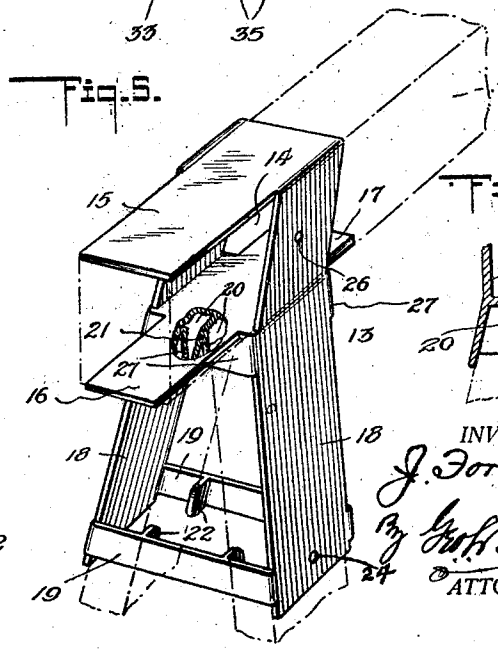


Fig. 6.

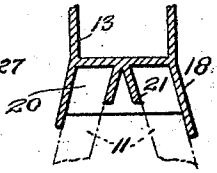
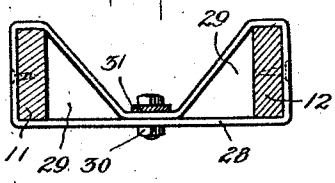


Fig. 3.



INVENTOR

J. Forester

By Geo. H. Beale

ATTORNEY

Patented June 16, 1925. 1,542,048

UNITED STATES PATENT OFFICE.

JAMES FORESTER, OF NEW YORK, N. Y.

MECHANIC'S HORSE.

Application filed August 6, 1923. Serial No. 655,902.

To all whom it may concern:

Be it known that I, JAMES FORESTER, a subject of the King of England, residing at New York city, borough of Manhattan, in the county of New York and State of New York, have invented certain new and useful Improvements in Mechanics' Horses, of which the following is a specification.

This invention relates to appliances or apparatus for use by mechanics such as masons, carpenters, or the like, and has particular reference to what are commonly called horses, a horse of this character being a device made up principally of certain pieces of wood assembled in such form as to make a support either for the workman himself or for the work upon which he is operating.

Among the objects of the invention is to provide a horse of the character suggested having peculiarly devised means and mechanism for assembling or attaching the body and leg portions of the horse for the purpose of rapidity and ease of assemblage, strength of the joints after assemblage, facility of knocking down the construction for transportation or storage purposes, and providing an intermediate step between the ground and the top of the device as well as other features of construction and advantage as will be pointed out hereinafter and more specifically claimed at the end of the description.

With the foregoing and other objects in view the invention consists in the arrangement and combination of parts hereinafter described and claimed, and while the invention is not restricted to the exact details of construction disclosed or suggested herein, still for the purpose of illustrating a practical embodiment thereof reference is had to the accompanying drawings, in which like reference characters designate the same parts in the several views, and in which—

Figure 1 is a side elevation partly in section on the line 1—1 of Fig. 2.

Fig. 2 is a right end elevation.

Fig. 3 is a transverse section on the line 3—3 of Fig. 2.

Fig. 4 is a bottom plan view of the brace connection with the top beam as seen from the line 4—4 of Fig. 1.

Fig. 5 is an enlarged perspective view of one of the main brackets, indicating also in dot and dash lines the relation of the top beam and the legs thereto.

Fig. 6 is a vertical cross sectional detail showing especially the socket structure for the upper ends of the legs.

Referring now more specifically to the drawings I show the horse as comprising a top rail or beam 10 of any suitable size, material, or cross sectional design according to the service to which the construction is designed to be put. Co-operating with each end portion of the beam are a pair of legs 11 and 12 usually arranged at an angle to each other and also at a slight oblique angle to the beam, the lower ends of each pair of legs being flared from each other and both pairs of legs being flared in a similar direction for the sake of maximum rigidity and stability of the construction.

One of the principal features of novelty of this device lies in the bracket mechanism for assembling or attaching the legs to the beam for the sake of maximum strength, facility of assemblage, and relative lightness of materials used.

In the form illustrated each bracket 13 is made as a single piece of metal and in any suitable manner as by casting, drop forging, or otherwise, and the same includes an upper portion constituting a socket or keeper 14 into or through which one end of the beam 10 is projected horizontally. The end of the beam may be reduced slightly either to lie flush with the sides of the socket member so as to give increased strength for the center portion of the beam, or if preferred the beam may be inserted without modifying the end portions thereof. In other words, the cross section of the beam may be the same as the cross sectional space in the socket. It is preferred, however, for the top surface of the socket member to lie flush with the top of the beam as clearly indicated in Fig. 1. The bracket is so constructed that preferably the top and bottom panels of the socket 14 are extended horizontally and parallel to each other at 15 and 16 flush with the vertical end of the beam. Also said bottom panel is extended inward toward the opposite end of the horse as shown at 17, thereby making a broader support for the end portion of the beam.

All that portion of the bracket beneath the panel 16 may be regarded as the anchorage shell for the upper ends of the legs. From the side view it will be observed that the general direction of the bracket is slightly offset from the vertical, correspond-

ing to the flare of each pair of legs from the other. The shell comprises two side panels 18, against and within which the upper ends of the legs are fitted, the tops of the legs coming directly against the bottom of the bottom socket panel 16. A pair of straps 19 are connected to the lower ends of the side panels 18 and extend across the space between them, making strong ties for these parts of the bracket and making additional keeper means for the legs. The parallel space between the straps 19 corresponds to the width of the legs. To hold each pair of legs at a proper angle with respect to each other and firmly in place within the shell portion of the bracket, I provide for the extreme upper end of each leg a socket 20 formed between the upper portion of the side panel 18 and a V-shaped rib 21 formed integral with the lower surface of the panel 16. Extending horizontally from each of the straps 19 are a pair of lugs 22 embracing the inner sides of the legs. The legs are put into place by slipping them directly upward endwise along the side panels 18 until their upper ends are received in the sockets 20. A screw 23 may be passed into each leg through the side panel 18 at the hole 24 if desired to make a positive interlock between the parts. Likewise a screw 25 may be passed laterally through the hole 26 in the socket portion of the bracket into the beam 10 for holding the beam in the socket 14. Each socket 20 includes also end members 27, making it impossible for the legs to tilt or move in any direction with respect to the bracket. The rib constitutes a partition in the upper part of the shell to form, in connection with the end members 27, the two sockets 20.

At any desired position below the brackets the legs are additionally strengthened and braced by cross braces 28. Each of these braces is made preferably as an endless double loop structure, through each loop 29 of which a leg is projected upward and closely embraced. Between the two legs the middle of the cross brace is so formed as to come together and a binding bolt 30 passes through the two parts thereof. Each cross brace is so designed as to conform to the flare between the legs and so is supported by the legs and prevented from moving downward.

In some instances it is desired to provide additional longitudinal bracing means for the horse, and to this end I prefer to employ a construction shown at 31, the same comprising a one piece brace attached in a peculiar manner at its center to the center of the bottom of the beam 10 and having its extreme remote ends bent downward and fitted directly against the contacting portions of the cross braces 28, each bolt 30 passing through such end of the brace 31 as well as through the cross brace. Thereby the main longitudinal brace 31 is firmly and strongly anchored to the leg braces at both ends.

The means for anchoring the center of the brace 31 to the beam includes a plate 32 secured to or countersunk within the bottom surface of the beam 10 and secured thereto as by means of screws 33. The center of this plate carries a bolt 34 projecting downward therethrough, and the end portions of the plate on opposite sides of the bolt 34 are struck downward forming two tongues 35, the bodies of which are spaced parallel to the plate and far enough below the same to receive the adjacent flat portion of the brace 31. The points of the tongues extend laterally in opposite directions, and so in assembling the construction the center of the brace is brought into place transverse to the beam 10 so that the threaded end of the bolt 34 will be received through a hole in the brace, the brace itself being at this time parallel to and midway between the two tongues 35. The nut is then put upon the bolt 34 and the brace is swung around so as to be brought parallel to the plate 32 and anchored between the tongues and the plate as shown in Fig. 4. The nut will then be tightened on the bolt 34 and the ends of the brace will be locked as above described by means of the bolts 30. Obviously the ends of the brace will spring sufficiently to pass the legs when brought into position, or the main brace and leg braces may be previously connected to each other and then attached at the bolt 34 prior to inserting the legs.

36 indicates an intermediate rail or step preferably midway between the ground and the beam 10, the same being attached to the legs 11 on one side of the horse. For the ends of the rail 36 I provide a pair of cleats or loops 37, the same being secured to the legs 11 by fasteners such as screws 38. The rail 36 is so formed as to have its ends fitted into the cleats or loops 37 and preferably so recessed as to be held from endwise movement except as soon to be stated. The lower edge of the rail is preferably shouldered at 39, one shoulder being farther from the one end than the other. The longer end is first inserted into its cleat far enough for the other end to be inserted until its shoulder strikes the cleat and then the rail will be properly positioned. Fasteners such as screws 40 may be passed through the cleats to hold the rail in place.

It will be understood that the horse as now shown and described is exceedingly strong and rigid, relatively light in weight, economical in the amount of material required in its construction, and easily demounted for storage or transportation or for the replacement of worn or damaged parts. Simple

tools such as a screw driver and wrench are sufficient for assembling and disassembling the device.

I claim:

1. The herein described bracket for connecting the legs to the beam of a mechanic's horse, said bracket comprising a keeper and a shell portion integral therewith, said keeper constituting a loop for surrounding the beam and having a horizontal opening for receiving the beam and comprising top and bottom members extending parallel to each other outward beyond the side portions of the loop, said bottom member extending also inward beyond the side portions, and said shell portion extending downward from said side portions of the loop and comprising two divergent flat side panels and bracing means for stiffening them and assisting in holding the legs within the shell.

2. The herein described bracket member for connecting the legs to the beam of a mechanic's horse, said bracket comprising a socket portion for receiving horizontally therethrough and therebeyond the end of the beam and a downwardly projected and laterally flared integral shell portion for receiving and holding the upper ends of two of the legs, said shell portion of the bracket comprising two flat side panels diverging downward from each other and against the inner faces of which the legs are adapted to be received, said shell including also integral rigid straight strap members extending transversely and horizontally between the lower ends of the side panels and having inwardly projecting lugs on their inner faces co-operating with the edge portions of the legs to confine said legs from movement laterally in any direction, and a V-shaped rib constituting a partition in the upper end of the shell to form sockets for the ends of the legs.

3. In a mechanic's horse, the combination with a top beam, supporting legs for the end portions of the beam, and means to secure the legs to the beam, of longitudinal bracing means between the beam and the legs, said bracing means comprising a one-piece brace member having at its center a flat horizontal portion, means including a fixed flat plate to anchor the central flat portion of the member to the bottom portion of the beam, the end portions of the member being extended from said flat portion in inclined directions between the legs, and means to connect the ends of the brace to the legs.

4. In a mechanic's horse, the combination with a top beam, supporting legs for the end portions of the beam, and means to secure the legs to the beam, of longitudinal bracing means between the beam and the legs, said bracing means comprising a member, means to anchor the central portion of the member to the bottom portion of the beam, the end portions of the member being extended in inclined directions between the legs, and means to connect the ends of the brace to the legs, said anchor means for the central portion of the brace including a plate having a pair of spaced tongues between which and the plate the brace is adapted to be received by a swinging movement.

5. In a mechanic's horse, the combination with a top beam, supporting legs for the end portions of the beam, and means to secure the legs to the beam, of longitudinal bracing means between the beam and the legs, said bracing means comprising a member, means to anchor the central portion of the member to the bottom portion of the beam, the end portions of the member being extended in inclined directions between the legs, and means to connect the ends of the brace to the legs, the means to anchor the members including a plate counter sunk flush within the bottom of the beam and having a center bolt, the plate on opposite sides of the bolt being provided with a pair of tongues parallel to and spaced below the plate according to the thickness of the brace, the brace having a hole to receive the bolt and around the axis of which bolt the brace is adapted to be swung into locking position between the tongues and the plate.

6. In a mechanic's horse, the combination with a top beam, a pair of divergent legs for each end of the beam, and means to secure the pairs of legs to the beam, of longitudinal bracing means between the legs and the beam, said bracing means including two inclined end members, each end member extending between one pair of the legs, cross brace means between each pair of legs, and a separable fastener securing the end of the brace to the cross brace, the cross brace for each pair of legs comprising a double loop structure embracing the legs and having one straight side portion between the legs and the opposite side portion obliquely deflected so as to lie against the straight side and against which meeting sides the inclined brace end is secured.

In testimony whereof I affix my signature.

JAMES FORESTER.