

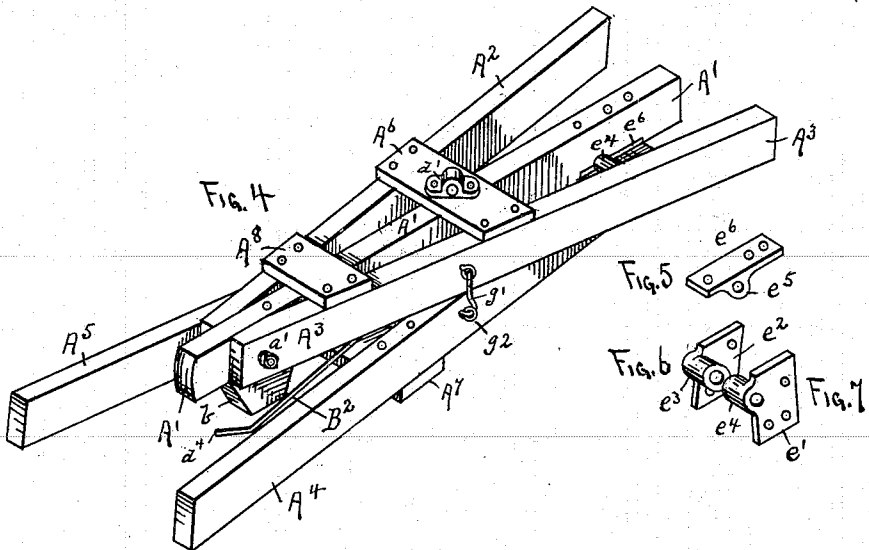
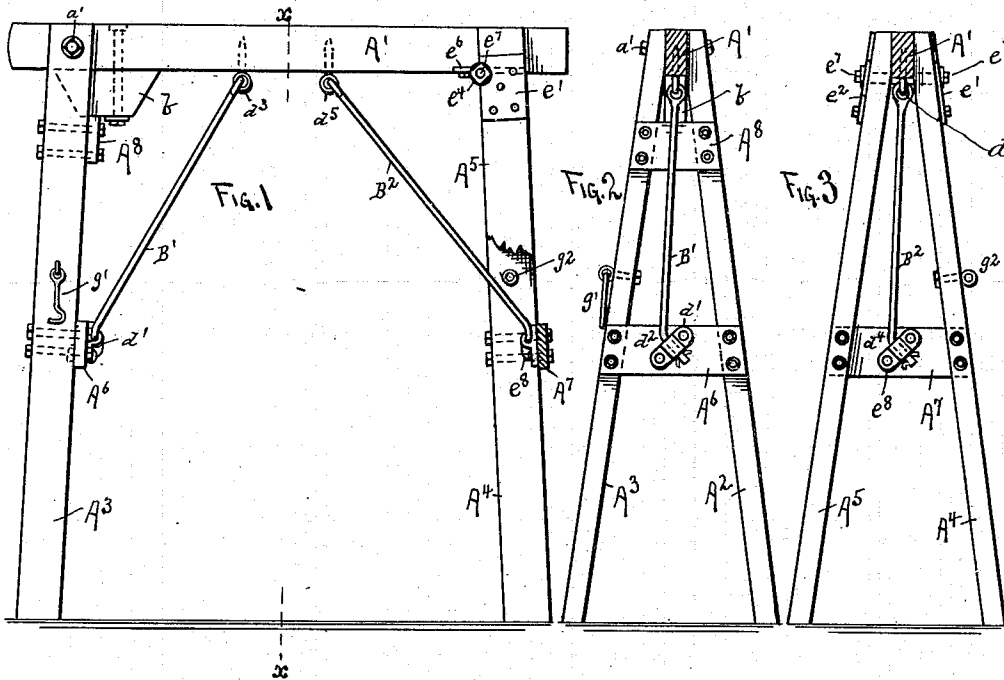
No. 615,364.

Patented Dec. 6, 1898.

W. PORTEN.
STAGING HORSE.

(Application filed Jan. 18, 1898.)

(No Model.)



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UNITED STATES PATENT OFFICE.

WILLIAM PORTEN, OF ST. PAUL, MINNESOTA.

STAGING-HORSE.

SPECIFICATION forming part of Letters Patent No. 615,364, dated December 6, 1898.

Application filed January 18, 1898. Serial No. 667,046. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM PORTEN, a citizen of the United States, residing at St. Paul, in the county of Ramsey and State of Minnesota, have invented certain new and useful Improvements in Staging-Horses, of which the following is a specification.

This invention relates to the staging-horses used by builders and contractors; and it consists in the construction, combination, and arrangement of parts, as hereinafter shown and described, and specifically pointed out in the claims.

In the drawings, Figure 1 is a side elevation of the "horse" complete. Fig. 2 is a cross-sectional elevation on the line xx of Fig. 1 looking toward one end of the horse, and Fig. 3 is a cross-sectional elevation on the line xx of Fig. 1 looking toward the other end of the horse. Fig. 4 is a perspective view of the horse folded together. Figs. 5, 6, and 7 are perspective views of the socket hinge-plates detached.

The invention consists in a "head" or body timber supported on four legs, the legs coupled in pairs and adapted to be folded together with the head or body when not in use or when they are to be moved from place to place or which may be removed entirely from the head or body to enable the parts to be packed into a smaller space.

The head or body is represented at A' and the legs at $A^2 A^3 A^4 A^5$, the legs $A^2 A^3$ coupled by cross-plate A^6 and the legs $A^4 A^5$ coupled by cross-plate A^7 . The upper ends of the legs $A^2 A^3$ converge and embrace the sides of the head A' , to which they are pivotally connected by a bolt a' , so as to be folded outward and over the top of the head and lie alongside of it, as shown in Fig. 4.

b is a "chock" or block attached to the under side of the head A' and resting in contact with a cross-plate A^8 , secured across the legs $A^2 A^3$ to support the head A' and relieve the bolt a' from the downward strain of the load which will be placed upon the horses. This is an important feature of my invention and prevents the tendency of the head to split through the hole for the bolt a' .

Attached to the inside of the cross-plate A^6 is a casting d' , having a diagonal socket in which the lower diagonally-hooked end d^2 of

a brace-rod B' engages, the upper end of the rod being pivotally connected at d^3 to the under side of the head A' , near the center, as shown. By this means the coupled legs $A^2 A^3$ may be held firmly in place, as in Figs. 1 and 2, while at the same time they can be readily released and folded over above the head, as in Fig. 4, by simply disconnecting the brace-rod B' .

The upper ends of the legs $A^4 A^5$ converge and embrace the head A' and are provided on their sides near their tops with plates $e' e^2$, each plate having a socket $e^3 e^4$, corresponding to a socket e^5 on a plate e^6 , embedded in the lower side of the head A' , as shown. The three sockets are adapted to receive a bolt e^7 , the three plates and the bolt forming a hinge-joint between the legs $A^4 A^5$ and the head A' , so that the legs may be folded up beneath the head, as in Fig. 4.

The legs $A^4 A^5$ are provided with a socket-plate e^8 and brace-rod B^2 , with its lower end pivoted at d^4 in the socket-plate and its upper end pivoted at d^5 in the lower surface of the head A' , similar to the brace-rod B' for the legs $A^2 A^3$ and for a similar purpose. By this arrangement the coupled legs $A^4 A^5$ will be firmly held in the position shown in Fig. 1 when in use, while at the same time they can be readily released and folded up beneath the head, as in Fig. 4, by simply detaching the brace-rod B^2 .

When the legs are folded together as in Fig. 4, the brace-rods $B' B^2$ will be held between the cross-plates $A^6 A^7$ and the legs and head and will not hang down loosely or be in the way. The center of the socket e^5 on the plate e^6 will come in line with the lower line of the head A' , and the center line of the sockets $e^3 e^4$ will come in line with the inner line of the legs $A^4 A^5$, as shown, so that the legs will fold up close to the lower surface of the head. When folded together, one or more hooks and staples $g' g^2$, arranged upon the sides of the legs at their nearest crossing-points, as shown in Fig. 4, will firmly unite them and retain them in their folded position. When thus folded, the horses can be readily and conveniently shipped or moved from place to place or moved from one piece of work to the other.

These folding horses enable the builder to

erect a staging for the use of the bricklayers or masons in laying up walls in a very rapid and convenient manner and in quicker time and in a more substantial and secure manner than by the ordinary horses or with other forms of staging. They can be readily set up or taken down by any common laborer and do not require skilled workmen to handle them.

The material employed in the folding horses can be lighter than that used in the ordinary horses. Hence a staging in which this kind of horses are employed can be erected in much quicker time and can be transported at much less expense.

All the joints are bolted together, there not being a single nail used in the whole construction. Hence the horses will last longer and can be repaired at a much less expense. If at any time the joints become loosened, they can be readily tightened by "setting up" upon the nuts of the bolts. There being no obstructions beneath the heads and between the legs, the wall which is being erected is more accessible for measurements or leveling than where the ordinary horses are used.

These folding horses will also be found very convenient for use in repair-work, where the staging-horses are often required to be taken through small openings, such as doors or windows, and frequently through still smaller openings, such as scuttle-holes in roofs or between joists from floor to floor. The folded horse may be taken through a space of less than six inches in width, if required. By merely removing the two bolts a' e' the legs can be disconnected from the head A' if for any reason it is required to still further reduce the bulk in shipping or for any other purpose.

The parts will be carefully constructed, so that they are interchangeable, to simplify the work of erection.

The folding horses when "knocked down" will occupy so much less room that the expense of storing during non-use will be greatly reduced.

The folding horses can be shipped long dis-

tances by railroad or steamboat. As they occupy so much less room, they can be shipped cheaper than new horses can be manufactured, whereas with the ordinary bulky horses they cannot be shipped by railroad except at so great an expense as to render it practically prohibitory.

The angularly-bent ends d^2 d^4 of the brace-rods B' B^2 may be extended beyond the sockets d' d^4 and provided with perforations below the sockets for the reception of pins or "collets," if found necessary; but ordinarily the angular form of the lower ends of the brace-rods will be sufficient to hold them in place.

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

1. In a folding "staging-horse," a head-timber, a pair of diverging legs pivoted at one end to the head and connected by a cross-plate beneath said head and adapted to be folded over above the head and lie parallel thereto, a brace-rod to hold said legs in position with relation to said head, a chock or block attached to the under side of said "head" and resting in contact with said cross-plate to support said head and relieve the pivot-bolt from downward strains, substantially as and for the purpose set forth.

2. In a folding "staging-horse," a "head-timber," a pair of coupled diverging legs pivoted at one end to the "head" and adapted to be folded beneath said "head" and lie parallel thereto, a socket-plate upon the under side of said "head," socket-plates upon said diverging legs adjacent to said "head" socket-plate, a bolt connecting said socket-plates, and a brace-rod connecting said "head" and diverging legs, substantially as set forth.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

WILLIAM PORTEN.

In presence of—

C. N. WOODWARD,
W. B. STOUT.