(No Model.) 2 Sheets—Sheet 1.

J. W. PEACOCK.

STEP LADDER AND BENCH COMBINED.

No. 383,243. Patented May 22, 1888.

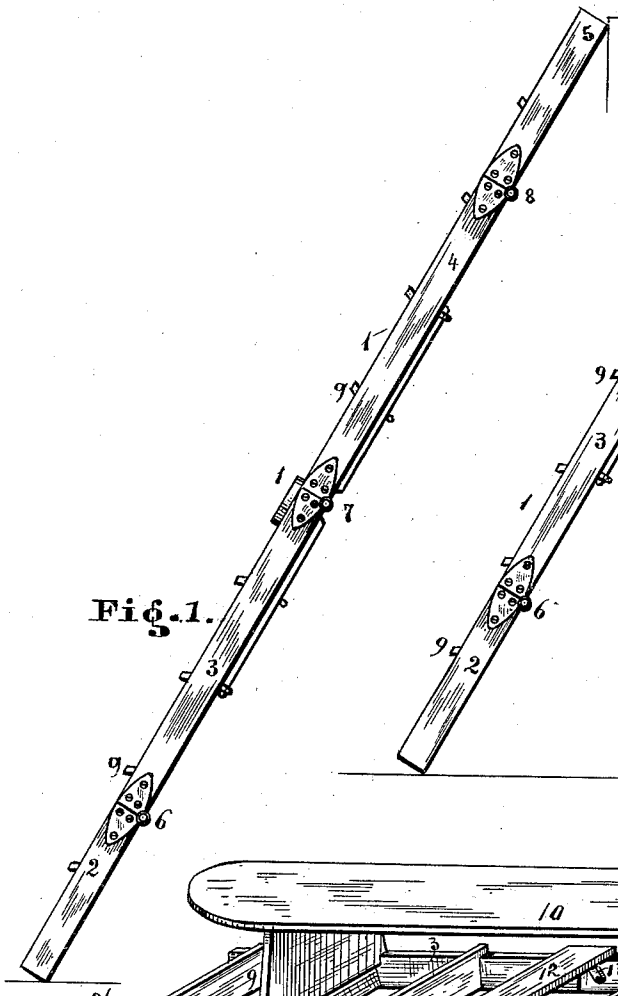


Fig. 1.

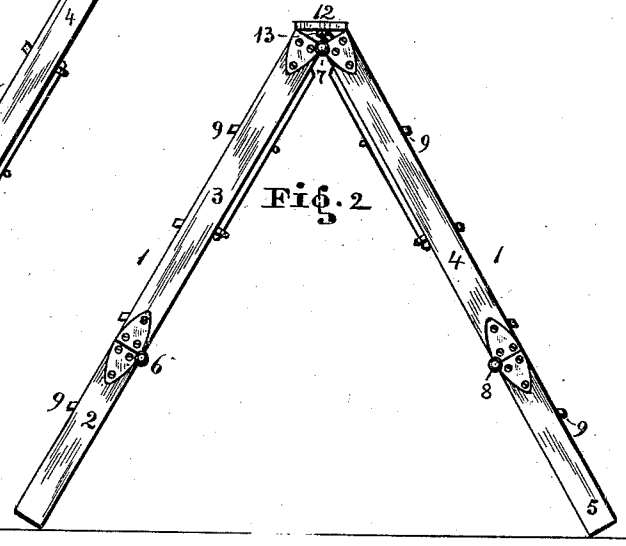


Fig. 2.

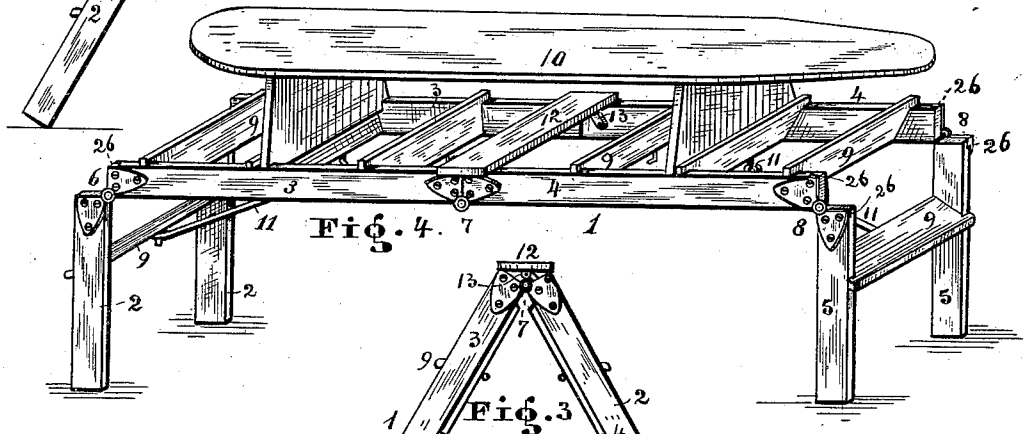


Fig. 4.

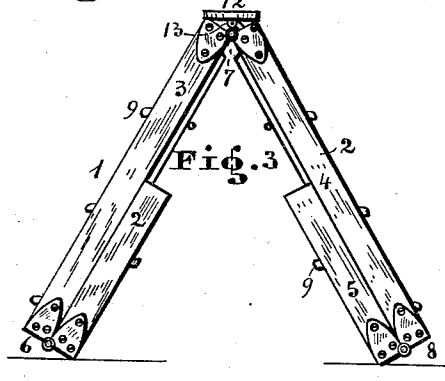


Fig. 3.

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(No Model.) 2 Sheets—Sheet 2.

J. W. PEACOCK.

STEP LADDER AND BENCH COMBINED.

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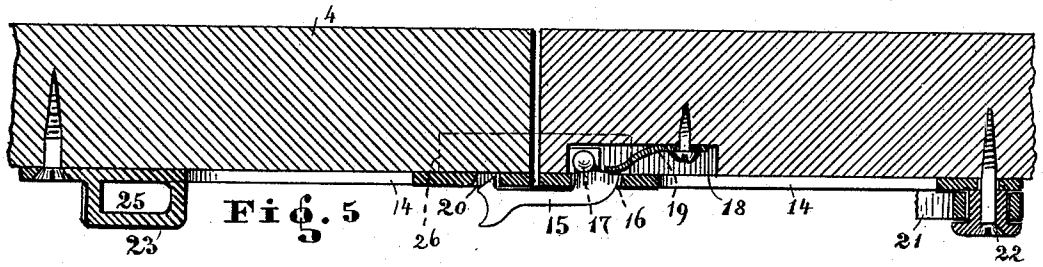


Fig. 5

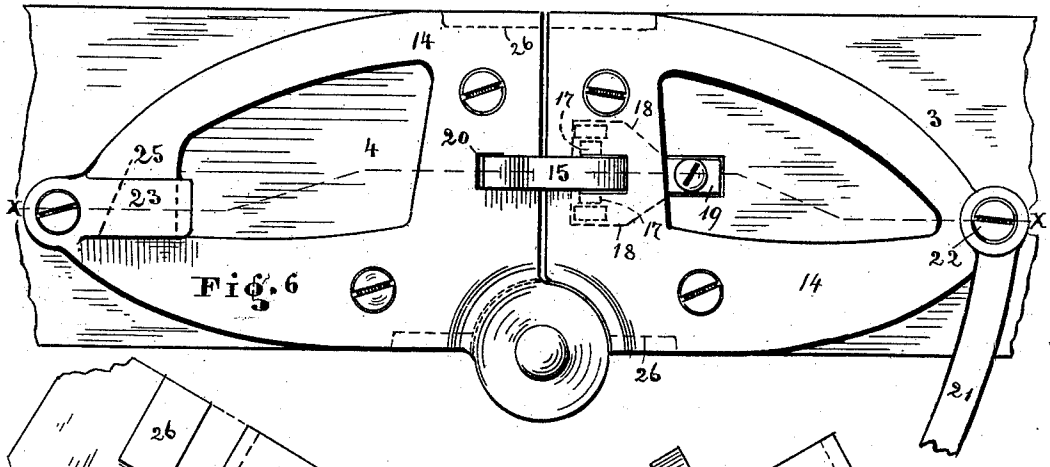


Fig. 6

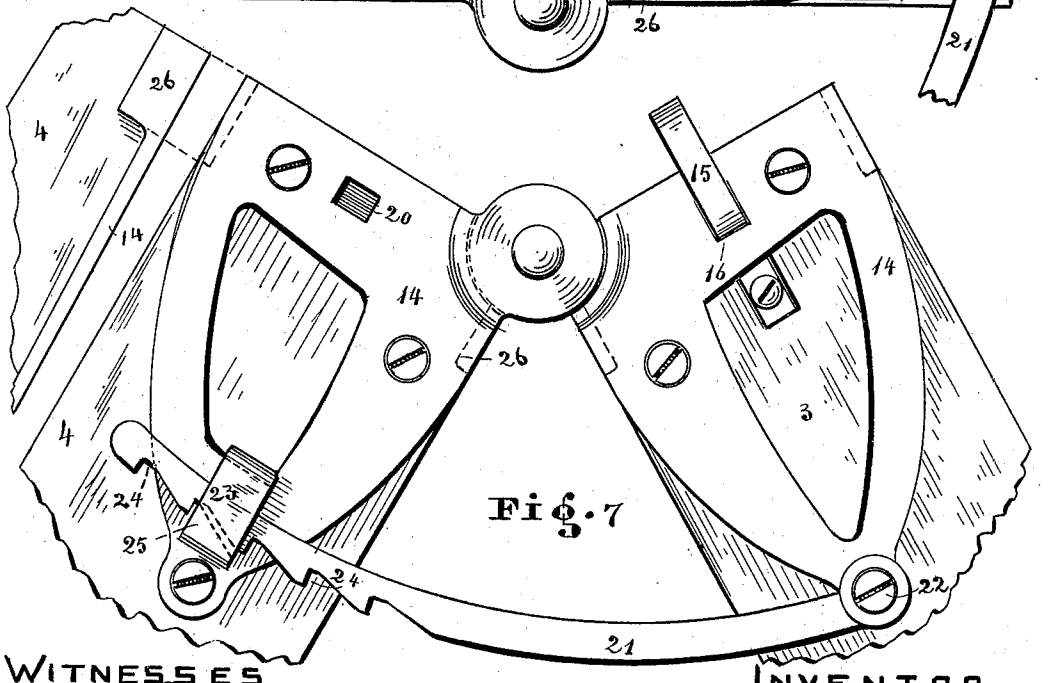


Fig. 7

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UNITED STATES PATENT OFFICE.

JOHN W. PEACOCK, OF CLEVELAND, OHIO, ASSIGNOR OF TWO-THIRDS TO CLARENCE R. BRITTON AND EDGAR S. WALLER, OF SAME PLACE.

STEP-LADDER AND BENCH COMBINED.

SPECIFICATION forming part of Letters Patent No. 383,243, dated May 22, 1888.

Application filed March 1, 1888. Serial No. 265,816. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. PEACOCK, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain Improved Jointed Ladder and Bench Combined, of which the following is a specification.

The nature of the said invention consists in the construction and arrangement of the several parts and sections as to form a straight or step ladder and bench in one general structure. The changeable character of the invention admits of its being used separately for the purposes mentioned.

The following specification, in connection with the annexed drawings, fully sets forth and describes the said invention.

Figure 1 represents the straight ladder. Fig. 2 represents the straight ladder as being adjusted to a step-ladder. Fig. 3 shows the ladder as being folded or changed into a short step-ladder. Fig. 4 shows the ladder changed into a stand or bench with an ironing-board thereon. (Plate 1.) Fig. 5 is a horizontal section in the line *x x*, Fig. 6, showing the mechanism of the jointed connection with its fastenings attached to the side pieces of the ladder. Fig. 6 is a view of a jointed or hinged connection of the ladder when fastened together for a straight ladder, and Fig. 7 shows the hinged joint-connection when adjusted to the position of a step-ladder and bench. (Plate 2.)

Like letters denote like parts in the specification and drawings.

The ladder consists in part of the side pieces, 1 1, which are in sections 2, 3, 4, and 5. These sides and sections are duplicates, and are alike hinged or jointed together by hinged braces 6, 7, and 8, secured to the sections of the side pieces by means of screw-bolts or otherwise. Between the sides are secured steps or rounds 9, which form steps on both sides of a step-ladder when changed from Fig. 1 to Fig. 2, as seen in the drawings. The pivotal joints of the hinged braces 6, 7, and 8 are arranged in line with the inner edge of the side pieces, as seen in Figs. 1 and 2, and the broad parts or sections of the hinge lap on the wood of the sides of the ladder with the hinge edges in contact when the ladder is extended, as in Fig. 1, or in the angular position shown in Fig. 2. By this means the ladder is braced against the strain or weight upon the steps when straight, as in Fig. 1, and on both sides of the angular position when in the form of Fig. 2. Thus the hinged braces act for a twofold purpose—that of supporting-braces and also as hinges for jointing the sections together. By means of the said hinged braces the sections 2 and 5 may be turned down to form legs, as seen in Fig. 4, the sections 3 and 4 being extended longitudinally from the sections 2 and 5, by which they are supported, in connection with the central hinges, in the position 7, Fig. 4, which forms a stand or bench for wash-tubs and ironing on the board 10, mounted upon the bench, as seen in Fig. 4. The sections 2 2 and 5 5 are secured in position by the adjustable braces 11.

In case a short step ladder is required, the lower end sections, 2 2 and 5 5, can be turned back on the inner sides of the sections 3 3 and 4 4, as seen in Fig. 3, thus making a short or low step-ladder. By these instrumentalities the ladder is convertible into four different useful purposes, as shown.

The stand-board 12, Figs. 1, 2, and 3, is connected to the sides of the ladder on the inside thereof by means of a hinged attachment. One of the hinged attachments is seen at 13, Fig. 4, and in Figs. 2 and 3. In thus hinging the stand-board to the sides it forms a step or round in the ladder when elongated, as in Fig. 1, and when adjusted to a step-ladder, as seen in Figs. 2 and 3, it is then a board securely resting at the top of the ladder, on which a person may stand in using it.

Secured to the ladder on one side opposite to the middle hinged brace, 7, Figs. 1 and 2, is a duplicate hinged brace, to which are attached devices for locking and securing the ladder in a straight line and in an angular position, as may be adjusted. It is not deemed necessary to describe the said devices in connection with all the joints of the ladder; hence the description of one arrangement thereof will suffice for all the attachments to the hinged braces when it is required on one or both sides of the ladder.

For the purpose of a more full understand-

ing of the said devices for locking and securing the jointed sections of the ladder in the different positions, as indicated in Figs. 5, 6, and 7, Plate 2, it will be supposed that the hinged braces 14 are essentially the same in construction and attachment to the sections in forming jointed connections as those of 6, 7, and 8, Figs. 1, 2, and 4. In Fig. 5 the hook 15 has its rear end inserted in a slot, 16, in one part or half of the hinged brace 14, as seen in Figs. 5 and 6. To prevent this hook 15 from moving out of the slot, a lug, 17, is attached to each side of the hook at right angles to the slot, as shown. In section 3 is cut a cavity, 18, in which is fastened a spring, 19. The lugs 17 are also in the cavity. The free end of the spring 19 is in contact with the end of the hook 15, Fig. 5. By the action of the spring 19 the front end of the hook is forced into the notch 20, and thereby the sections of the ladder are secured and prevented from moving or turning upon their respective hinged braces having this fastening. The hook is first to be moved out of the notch 20 before the sections can be turned upon the hinged braces. The connection of the hook 15 and lugs 17 is so arranged in relation to the slot 16 in the hinged brace as to form a kind of a hinge for the hook to be turned in and out of the notch 20, as described, and is required for the ladder in its different adjustments. When the hook 15 is fastened into the adjoining section, as seen at 3 4, Fig. 5, the ladder is supposed to be in a right line, as seen in Fig. 1, or the sections which are hooked together in line, as shown in connection with the hinged braces 6 and 8, Fig. 2, thus preventing any of the sections which are hooked together, as shown, from being moved out of place so long as the hook is not released from its engagement with the slot 20, Figs. 5 and 6. When the hook is withdrawn from the slot 20, the ladder-sections may be changed or turned upon the hinged braces from a straight line, as in Fig. 1, to an angular position, as in Figs. 2, 3, 4, and 7. This interchangeable arrangement admits of the ladder being adjusted and secured in the several positions, and for the purposes set forth.

For the purpose of preventing the ladder from moving out of its angular position when adjusted as a step-ladder, as shown in Figs. 2 and 3, the adjustable notched brace 21, Fig. 7, is employed, one end of which brace is loosely connected with the screw 22, which screw passes through the eye of the brace and the end of the brace-hinge into the section 3 of the ladder, as seen in Fig. 5. This brace 21 extends from section 3 to section 4, and passes through a loop, 23, attached to the hinged brace 14, as seen in Figs. 5 and 7. In this brace 21 are a series of notches or ratchet-teeth, 24, arranged to engage with a catch, 25. This adjustable brace admits of the ladder being extended more or less in an angular position, as seen in Figs. 2 and 3, and prevented from moving or slipping out of such position by means of the brace-teeth engaging in the catch 25 in the loop 23, as indicated in Fig. 7.

It will be noted that the direct strain or weight, in its tendency to spread or widen the angle of the step-ladder, Figs. 2 and 3, is securely and firmly resisted by the brace 21, and its engagement with the catch 25, by means of the teeth 24. On raising the brace 21, to disengage the teeth from the catch 25, the ladder may be folded up in close contact for convenience in transportation, &c.

The adjustable brace 21 is designed for use in connection with a step-ladder, as seen in Fig. 7, jointly with the hinged braces, attached to which braces and projecting therefrom are ears or lugs 26, which lap over both edges of the ladder-sections, as indicated at 26, Fig. 4, and by dotted line 26, Fig. 5. The purpose of these ears is to prevent the wood embraced within the hinged braces from splitting.

What I claim is—

1. The combination of the straight and step ladder sections, connected together by hinged braces having pivotal joints in line with the inner edge of the sections, with the broad parts of said hinged braces lapping over and fastened to the sides of the ladder, with lugs 26, inclosing the edges of said sections, all arranged to form the pivotal supports and connections, and a stand-board, 12, hinged to said sections, substantially as and for the purposes described.

2. In a combined step and straight ladder, the hook 15, having one end inserted in a slot, 16, in one section of the hinged brace 14, forming a pivotal connection therewith, and the opposite end adjusted to engage with the slot 20 in the other section of the hinge-brace, in combination with the spring 19, attached to the ladder-section, and its free end in contact with the hinged end of the hook arranged to co operate with hinged braces in jointed relation with the ladders, in the manner substantially as herein set forth.

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

JOHN W. PEACOCK.

Witnesses:
W. H. BURRIDGE,
B. F. EIDLER.