H. G. TRAUTWEIN.

FOLDABLE SCAFFOLD JACK.

APPLICATION FILED AUG. 19, 1916.

1,234,510.

Patented July 24, 1917.

2 SHEETS—SHEET 1.

Fig. 1

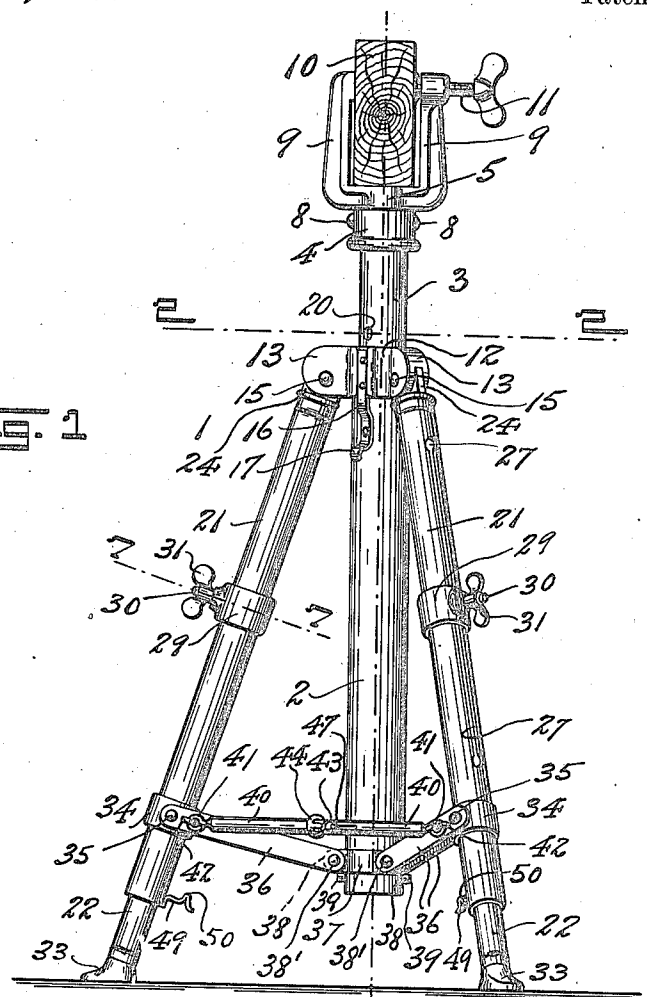
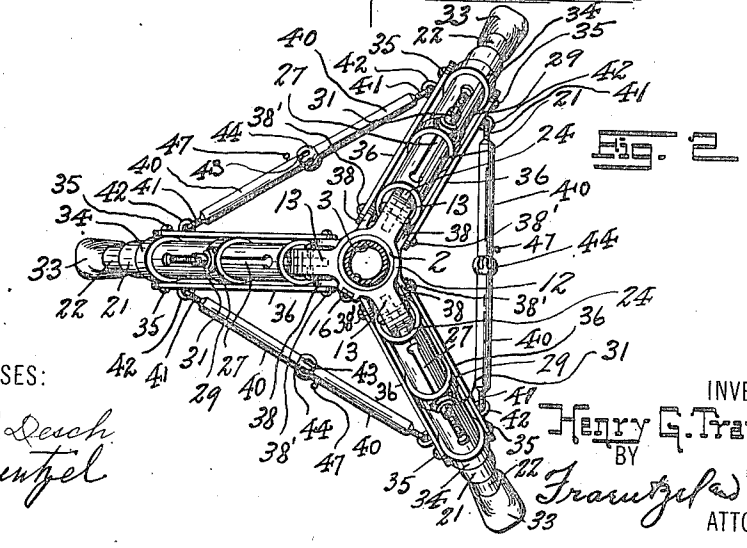


Fig. 2



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Fig. 3

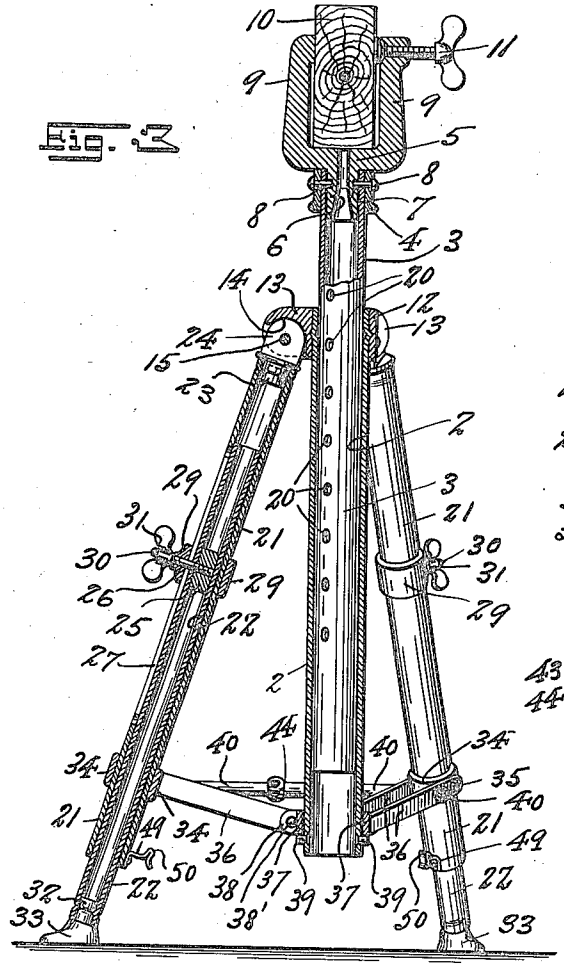


Fig. 4

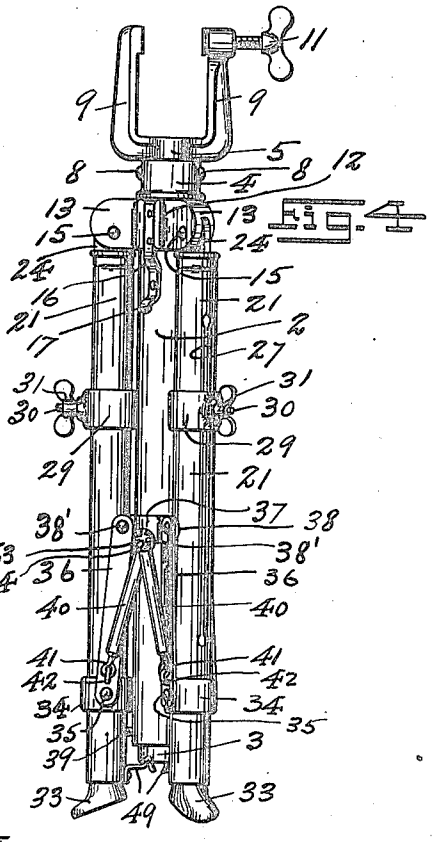
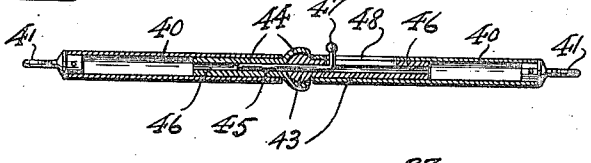


Fig. 5



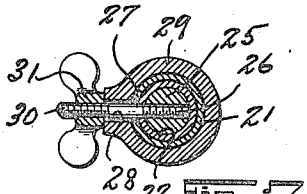
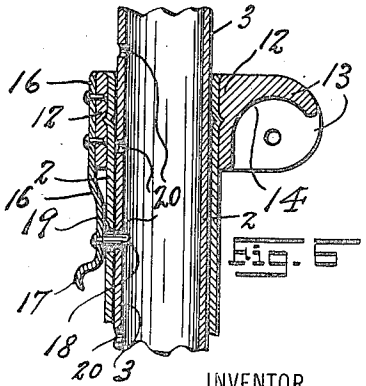


Fig. 7

Fig. 6



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UNITED STATES PATENT OFFICE.

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FOLDABLE SCAFFOLD-JACK.

1,234,510. Specification of Letters Patent. Patented July 24, 1917.

Application filed August 19, 1916. Serial No. 115,780.

To all whom it may concern:

Be it known that I, HENRY G. TRAUTWEIN, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Foldable Scaffold-Jacks; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to characters of reference marked thereon, which form a part of this specification.

The present invention relates, generally, to improvements in scaffold jacks; and the invention has reference, more particularly, to an improved construction of collapsible adjustable scaffold jack.

The present invention has for its principal object to provide a very simple, yet strong and durable, adjustable or extensible scaffold jack adapted to provide a firm and stable support for workmen's scaffold platforms, said scaffold jack being so constructed that it may readily be collapsed or folded into a comparatively compact bulk, so as to render the same easily carried about from place to place or stored when not in use.

Other objects of the present invention, not at this time more particularly enumerated, will be clearly understood from the following detailed description of the same.

With the various objects of the present invention in view, the same consists, primarily, in the novel construction of foldable adjustable scaffold jack hereinafter set forth; and, the invention consists, furthermore, in the several novel arrangements and combinations of the various devices and parts, as well as in the details of the construction of the same, all of which will be more fully described in detail in the following specification, and then finally embodied in the claims which are appended to and which form an essential part of said specification.

The invention is clearly illustrated in the accompanying drawings, in which:—

Figure 1 is a side elevation of the novel construction of scaffold jack made according to and embodying the principles of my present invention, the same being shown in its normal operated or erected position, adjusted to support a scaffold platform at a desired height.

Fig. 2 is a horizontal section of the same, taken on line 2—2 in said Fig. 1, looking downward.

Fig. 3 is a vertical longitudinal section of the same.

Fig. 4 is a side elevation of the same, as it appears when collapsed and folded up into compact readily portable form.

Fig. 5 is a detail longitudinal section of one of the laterally extending leg braces or struts used in connection with said novel scaffold jack, the same being drawn on an enlarged scale.

Fig. 6 is a detail vertical longitudinal section through the locking-latch of the extensible main standard or post of said scaffold jack, the same being drawn on an enlarged scale.

Fig. 7 is a detail horizontal section taken on line 7—7 in said Fig. 1.

Similar characters of reference are employed in all of the hereinabove described views, to indicate corresponding parts.

Referring now to the said drawings the reference character 1 indicates the complete novel scaffold jack made according to and embodying the principles of my present invention, the same comprising a tubular main body or standard 2 within which is telescopically disposed a tubular extensible standard 3, adapted to be extended or projected from the upper end of said main body or standard 2. Secured upon the upper free end of said extensible standard 3 is a fixed collar 4, which serves both to reinforce the end of said extensible standard and to provide a stop to limit its downward movement into said main body or standard 2.

Supported upon the upper free end of said extensible standard 3, in swiveled relation thereto, is a head-frame 5 having a downwardly extending hub-portion 6 which is inserted within the upper open end of said extensible standard 3, so as to be capable of swiveling or turning therein. Said hub-portion 6 is provided with an annular groove 7 into which project the free ends of retaining pins 8, which are secured in place by passing the same laterally through said collar 4 and the walls of said extensible standard so that they project interiorly within the opening of the latter and thus into said annular groove 7, thus retaining said head-frame 5 from removal while permitting the same to freely turn or swivel in such secured position. Said head-frame 5 is further provided with a pair of up-

wardly extending embracing arms 9, between which is inserted the beam or rail 10 upon which scaffold planking may be supported. Extending transversely through the upper end of one of said embracing-arms 9, in screwing relation thereto, is a clamp-screw 11, which may be caused to engage said beam or rail 10 and firmly clamp the same in proper supported relation to said head-frame 5.

Firmly secured by any suitable means upon the upper end of said main body or standard 2 is a fulcrum-block 12, provided with a plurality of radiating fulcrum lugs 13. Preferably said fulcrum-lugs 13 are three in number spaced equi-distant from one another about said fulcrum-block 12. Each fulcrum lug 13 is provided in its under portion with a bearing-socket 14, the side walls of which are pierced to provide openings for transversely extending hinge or pivot pins 15 to pass therethrough.

Secured upon the exterior of said fulcrum-block 12, in a suitable location is a spring-latch member 16 which depends therefrom, and extends downwardly over the exterior of said main-body or standard 2, the free end thereof terminating in an outwardly bent or curved finger-piece 17. Secured to the said spring-latch member 16, so as to project inwardly from the under side thereof, is a latch-pin or stud 18, which extends through an opening or hole 19 suitably formed and located in the wall of said main-body or standard 2, and thus is caused to project laterally into the interior of said main-body or standard 2. Said extensible standard 3 is provided with a plurality of longitudinally disposed holes or openings 20, spaced one from the other at desired intervals, any one of which may be registered with said opening or hole 19 of said main body or standard 2, when said spring-latch member 16 is manipulated to withdraw said latch-pin or stud 18, so that when said spring-latch member is released said latch-pin or stud 18 will enter the registered hole or opening 20 and thus lock said extensible standard 3 in a desired extended position to elevate said head-frame 5 to the desired height.

The reference character 21 indicates the main leg-members of the scaffold jack 1, the same being of tubular form. Telescopically disposed within the said main leg-members 21 are tubular extensible leg-portions 22, adapted to be extended or projected from the lower ends of said main leg-members 21. Secured within the upper end of each main leg-member 21 is the butt 23 of a perforated journal-lug or ear 24, which projects upwardly from said upper ends of said main leg-members. Said journal-lugs or ears 24 are inserted within a bearing-socket 14 of a fulcrum-lug 13 so that said hinge or pivot-pin 15 thereof passes through the perforation of said journal-lugs or ears 24, and thus pivotally connects each main leg-member 21 with said main body or standard 2. Each extensible leg-portion 22 is provided with a suitably positioned interiorly disposed anchor-block 25 affixed thereto. Secured or anchored in said anchor-block 25 is a stud or shank 26 which projects outwardly through the wall of said extensible leg-portion 22, and thence through a longitudinally extending guide-slot 27 provided in the wall of said main leg-member 21, and thence through an opening 28 of a slip-collar 29 which is slidably disposed upon the exterior of said main leg-members 21. The free end 30 of said stud or shank projects from said slip-collar 29 and is screw-threaded to receive a winged lock-nut 31. Now if it is desired to extend outwardly said extensible leg-portion 22 to lengthen the leg and thereby increase the elevation of the jack, said winged lock-nut 31 is loosened on the free end 30 of said stud or shank 26, and pushed downwardly upon said main leg-member 21. This downward movement of said slip-collar is transmitted to said stud or shank 26 and through the same to said extensible leg-portion 22 so that the same is thereby moved outwardly or extended from the lower end of said main leg-member 21 for any desired distance. Being thus extended, the extensible leg-portion is locked in immovable relation to said main leg-member by tightening up the winged lock-nut 31 which tends to pinch the intervening wall portions of said main leg-member and said extensible leg-portion together and between said anchor-block 25 and said slip-collar 29, thus securely binding said parts together in strong frictional relation against movement relatively one to the other, as will be more particularly understood from an inspection of Figs. 3 and 7 of the accompanying drawings. Secured within the lower end of each extensible leg-portion 22 is the butt 32 of an outwardly projecting foot-piece 33, which may be of any suitable design or form.

Secured fixedly upon each main leg-member 21, preferably adjacent to the lower end thereof, is a yoke-piece 34 having a pair of oppositely extending pivot-journals 35, upon which are pivoted the ends of a pair of stays 36, one of which extends from each side of said leg-member 21. Slidably disposed upon the exterior surface of said main body or standard 2 is a movable yoke-piece 37 having outwardly extending perforated ears 38 adapted to carry pivot-journals 38′ to which the opposite ends of said stays 36 are pivotally secured. When the leg-members 21 are swung outwardly upon their pivotal connections with said main-body or standard 2, said movable yoke-piece 37 slides downward upon said main-body or standard

2 until brought to rest against a pair of stop-studs 39 which are secured to said main-body or standard 2 so as to project outwardly therefrom adjacent to the lower end thereof. In this manner the said stays 36 are extended in operative bracing positions between said main-body or standard 2 and said leg-members 21, thereby maintaining said leg-members in outwardly inclined or spread relation to said main-body or standard 2 so as to provide a firmly braced supporting base for the scaffold-jack. When the leg-members 21 are thus extended and the stays 36 thus positioned in bracing relation thereto, the stays incline downward slightly toward the main-body or standard 2 thus firmly maintaining said movable yoke-piece 37 in engagement with said stop-studs 39, and firmly held against any tendency to move upward with a consequent tendency of the leg-members to move inwardly to their folded or collapsed positions.

Of course it will be understood that my novel construction of scaffold jack may be made in various sizes in accordance with the demands made thereon relative to their supporting strength and rigidity. When said novel scaffold jacks are made in the larger or heavier sizes, it is desirable to reinforce or brace the leg-members thereof against any lateral movement which might result in a displacement thereof from proper supporting position, and a consequent collapse of the jack. To this end I provide in association with the leg-members of said jack a novel construction of laterally extending foldable brace-members adapted to extend from one leg-member to another. These brace-members each comprise a pair of brace or strut members 40, the outer ends of which are provided with hinge-links 41, adapted to be pivotally connected with said leg-members by means of hinge-staples 42 which are preferably affixed to said stays 36 at a point thereon adjacent to the pivotal connection thereof with said leg-members 21. The inner ends of said brace or strut members 40 are connected together with suitable break joint devices, preferably in the form of a ball member 43 connected with one brace or strut member, and a socket-member 44, adapted to embrace said ball-member, connected with the other brace or strut member, although it will be apparent that other forms of break joint devices may be employed if desired. When said leg-members 21 are spread in operative position said respective brace or strut members 40 are alined together so as to extend laterally between said leg-members, and when in such position it is preferable to lock the break joint devices thereof against yielding or pivotal action. To this end a locking means is provided in the form of a slidable bolt 45 which slides in a tubular guide-way 46 which extends through the ball and socket members 43 and 44. Said bolt 45 is provided with a transversely projecting finger-piece 47 which extends through a slot 48 formed in one of said brace or strut members 40, so that said bolt may be manipulated thereby. When it is desired to lock said break joint the said slidable bolt 45 is thrust through the ball and socket members 43 and 44, as shown in Fig. 5 of the drawings, thus preventing any pivotal action of said break joint, and thereby holding said brace or strut members 40 in rigid alinement and operatively extending between said leg-members 21, so that any tendency of the latter to shift laterally, or to become displaced from proper supporting position will be checked and prevented.

It will be clearly understood from the above description that my herewith presented construction of scaffold jack is very simple in character, yet is capable of quick and easy manipulation to set up the same, and is further capable of being variously adjusted in its extended set up position to accommodate the same very readily to the demands made thereon as to height of the scaffold supported thereby, and as to position or direction of extension of the beams or rails 10, since the latter may be extended in any direction by reason of the swiveled connection of the head-frames 5 with which they are connected. It will also be understood that in using the scaffold jack, two or more of the same will be employed, in accordance with the kind and position of scaffolding desired.

By an inspection of Fig. 4 of the accompanying drawings, it will be clearly understood, that my novel scaffold jack may be folded up or collapsed so as to render its bulk very compact, when it is desired to move the same or store the same away when not in use. To fold up the novel scaffold jack, the extensible standard 3 is unlocked and thrust downwardly and telescopically into said main-body or standard 2, and then locked in such position by the spring-latch member 16. The bolt 45 of said lateral brace or strut members is retracted so that the break joint devices thereof may yield or pivot to permit the folding together of said members of the brace or strut. Then the slidable yoke-piece 37 is moved upwardly upon said main-body or standard 2, which draws in the stays 36 and folds the leg-members 21 in close parallel relation to said main-body or standard 2, said lateral brace or strut members simultaneously folding up as shown. Then the extensible leg-portions 22 are released from locking relation to said leg-members 21, and thrust upwardly and telescopically into the latter, in which up-drawn position they may be locked by said locking devices. The lower ends of said leg-members 21, or if desired the extensible

leg-portions 22, are provided with spring-catch devices 49, the nosing 50 of which will engage over the marginal edge of the lower end of said extensible standard 3, or if desired the lower end of said main-body or standard 2, to retain said leg-members 21 in their folded up positions. It will thus be seen that the scaffold-jack will be reduced to a very compact and easily portable bulk.

My novel construction of scaffold jack is also very strong and durable, and capable of carrying a heavy load, yet at the same time may be made to be of relatively light weight to render the same easily portable, all for the reason that it is principally constructed of metallic tubing, which provides not only requisite strength and durability, but also the other necessary requirement, to wit, lightness of weight.

I am aware that some changes may be made in the several arrangements and combinations of the various devices and parts of my present invention, as well as in the details of the construction of the same, without departing from the scope thereof as set forth in the foregoing specification, and as defined in the claims appended hereto. Hence, I do not limit my invention to the exact arrangements and combinations of the various parts as described in the foregoing specification, nor do I confine myself to the exact details of the construction of said parts as shown in the accompanying drawings.

I claim:—

1. In a device of the kind described a central standard, leg-members pivoted to said standard, a slidable yoke on said standard, stays pivoted between said leg-members and said yoke, and a foldable brace-member connected between adjacent leg-members.

2. In a device of the kind described a central standard, leg-members pivoted to said standard, foldable stays between said leg-members and said standard, foldable brace-members connected between adjacent leg-members, and means for locking said brace-members in rigid lateral extension from one leg-member to another.

3. In a device of the kind described a central standard, leg-members pivoted to said standard, foldable stays between said leg-members and said standard, foldable brace-members connected between adjacent leg-members, comprising a pair of strut-members, the outer ends of which are respectively pivoted to adjacent leg-members, and a yieldable joint connecting together the inner ends of said strut-members.

4. In a device of the kind described a central standard, leg-members pivoted to said standard, foldable stays between said leg-members and said standard, foldable brace-members connected between adjacent leg-members, comprising a pair of strut-members, the outer ends of which are respectively pivoted to adjacent leg-members, a yieldable joint connecting together the inner ends of said strut-members, and means for locking said joint against yielding to hold said strut-members in alinement and in rigid extension between adjacent leg-members.

In testimony, that I claim the invention set forth above I have hereunto set my hand this 17th day of August, 1916.

HENRY G. TRAUTWEIN.

Witnesses:

GEORGE D. RICHARDS,

WALTER S. JACOBUS.