

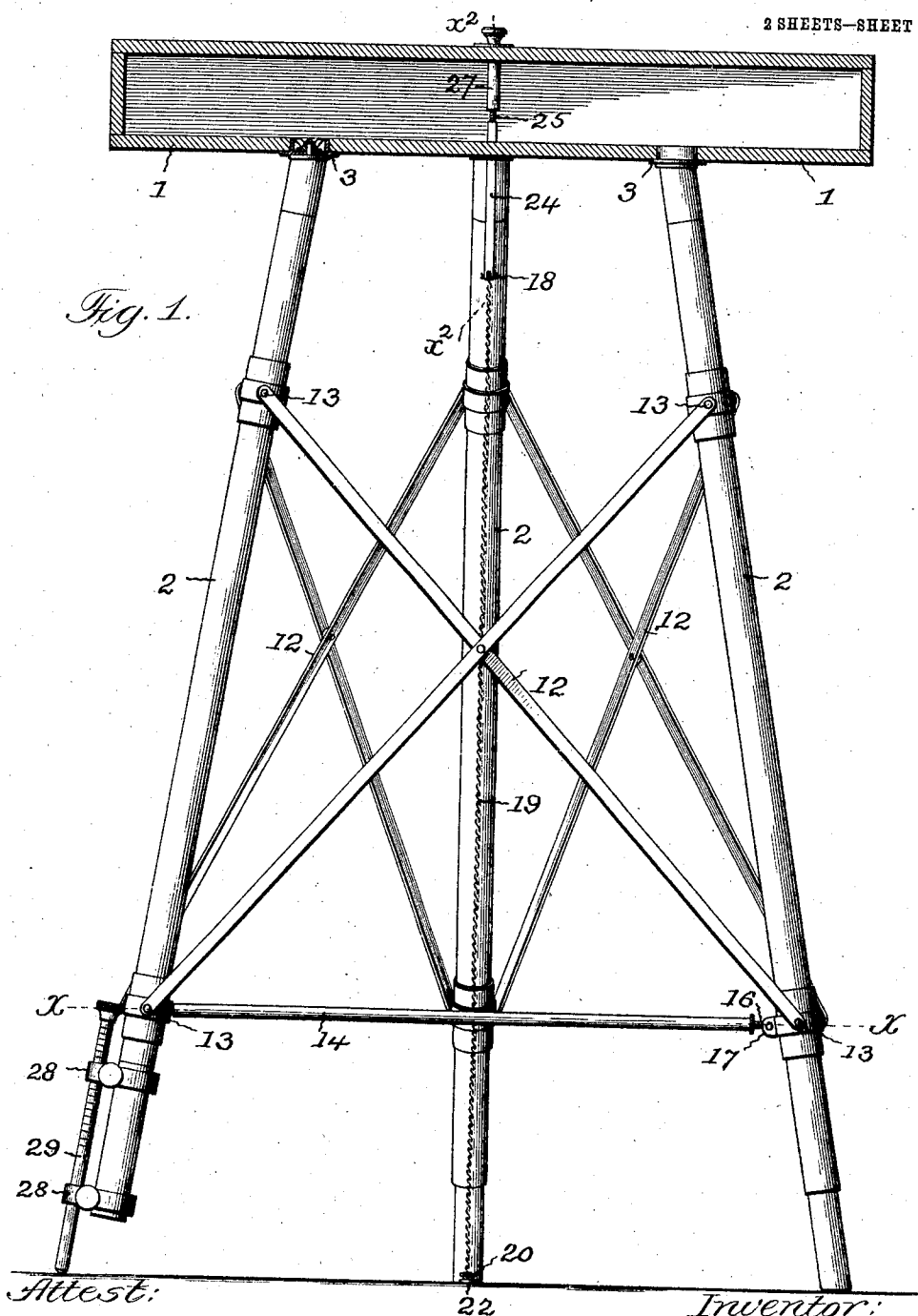
No. 859,781.

PATENTED JULY 9, 1907.

A. C. ROEBUCK.
STAND OR TRIPOD.

APPLICATION FILED FEB. 2, 1905.

2 SHEETS—SHEET 1.



Attest:

John Enders.

M. H. Holmes.

Inventor:

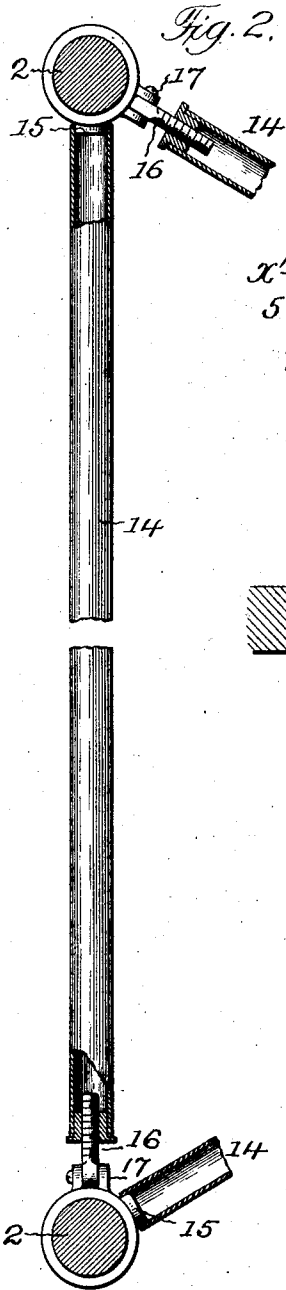
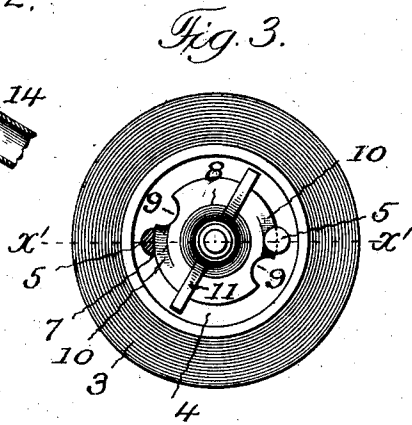
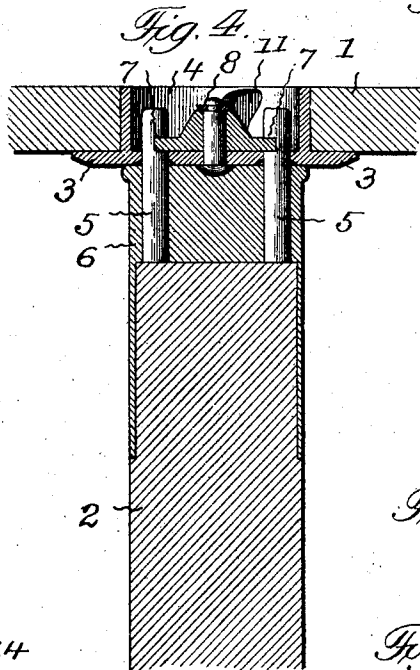
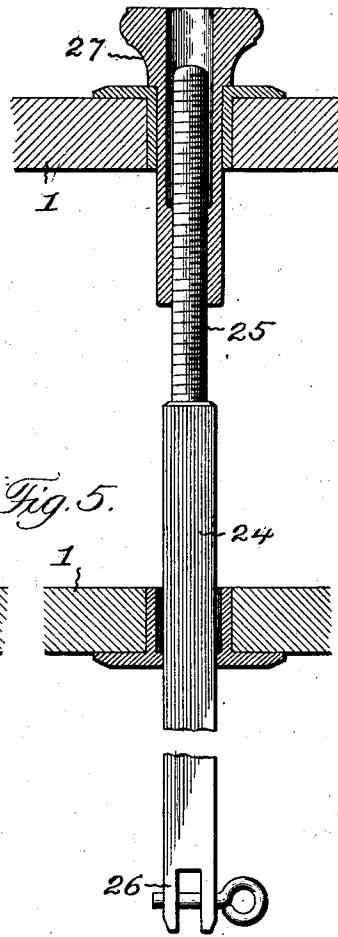
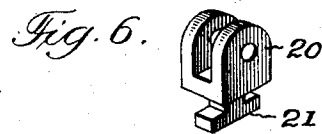
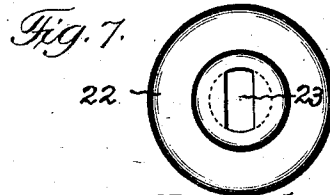
Alvah C. Roebuck.

by Robert Burns

Attorney.

A. C. ROEBUCK.
STAND OR TRIPOD.
APPLICATION FILED FEB. 2, 1905.

2 SHEETS—SHEET 2.



Attest:
John Enders.
M. A. Holmes.

Inventor:
Alvah C. Roebuck.
by Robert Burns
Attorney.

UNITED STATES PATENT OFFICE.

ALVAH C. ROEBUCK, OF CHICAGO, ILLINOIS.

STAND OR TRIPOD.

No. 859,781.

Specification of Letters Patent.

Patented July 9, 1907.

Application filed February 2, 1905. Serial No. 243,794.

To all whom it may concern:

Be it known that I, ALVAH C. ROEBUCK, a citizen of the United States of America, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Stands or Tripods, of which the following is a specification.

The present invention relates to knock-down tripods or stands, and has for its object to provide a simple, strong and efficient structural arrangement and combination of parts, capable of rapid and convenient assembly, and adapted to afford a firm, substantial and vibrationless structure for the support of stereopticons and like manually operated apparatus, wherein a perfect and efficient operation of the apparatus requires that the stress exerted in the manual actuation thereof shall not cause any apparent vibration of the supporting means with a consequent and corresponding vibration of the apparatus itself, all as will hereinafter more fully appear and be more particularly pointed out in the claims.

In the accompanying drawings:—Figure 1, is a sectional elevation of a tripod or stand, illustrating the general arrangement of parts of the present invention. Fig. 2, is a fragmentary horizontal section at line $x-x$ Fig. 1. Fig. 3, is a detail sectional plan view of the fastening means by which the posts are secured to the tripod top. Fig. 4, is a detail vertical section of the same at line $x'-x'$, Fig. 3. Fig. 5, is a detail vertical section at line x^2-x^2 Fig. 1, illustrating the adjustable attachment to the central tension member to the tripod top. Fig. 6, is a detail perspective view of the attaching clip for the lower end of the central tension member. Fig. 7, is a detail plan view of the floor plate with which the aforesaid attaching clip has engagement.

Similar numerals of reference indicate like parts in the several views.

Referring to the drawings:—1, is the tripod top or table of any usual form and construction, preferably however of the box form illustrated in Fig. 1, in order to adapt the same for the reception of more or less of the parts of the stereopticon, or the like, in transporting the apparatus from place to place.

2, are the supporting legs or posts detachably secured in manner hereinafter set forth to the underside of the tripod top 1; such posts are preferably three in number and spread apart at their lower ends to afford a broad supporting base for the tripod.

3, are a series of bushings attached to the underside of the tripod top 1, and corresponding in number to the posts 2; such bushings are formed with open top recesses 4, for the reception of revoluble latches hereinafter described, and with a series of orifices for the reception of the attaching stems with which the upper end of the posts are provided.

5, are a pair of the attaching stems, above referred to attached in any usual manner to the upper end of a post 2, preferably by means of an attaching ferrule 6, fitting the upper end of the post, and provided with lateral recesses 7, arranged in apposition, as shown in Fig. 4.

8, is the revoluble latch member, above referred to, having a disk form and provided with peripheral notches 9, which when in alinement with the aforesaid orifices in the bushing 3, permits a free insertion of the stem 5 into place. Such latch member is also formed with cam faces 10, adjacent to said peripheral notches, and adapted for operative engagement with the lateral notches 7 aforesaid to draw the tripod post 2, firmly against the under surface of the tripod top and effect a substantial, yet easily releasable attachment of the parts.

11, are operating wings on the revoluble latch member for convenient manipulation of the same.

12, are pairs of intersecting diagonal stay or tie bars pivotally connected together at their points of intersection, and secured at their respective ends to the posts 2, by pivot pins or bolts 13, to hold said posts in proper relative position, one with the other, in actual use.

14, are horizontal and preferably tubular struts arranged between the lower ends of the posts 2, and in adjacent relation to the points of attachment of the lower ends of the diagonal braces to the posts, as shown in Fig. 1. In the present improvement said struts are made lineally extensible, and in an extensible adjustment are adapted to force the lower ends of the posts apart in opposition to the holding stress of the diagonal tie bars and impart a maximum degree of stiffness and stability to the structure as a whole; and to such end involves a structural formation of parts as follows:—15, are individual circular lugs on the sides of the respective posts 2, adapted to fit within the open tubular ends of the struts 14, to form connection between the parts which permits of an independent rotation of the struts. 16, are individual screw-threaded stems, attached to the posts 2, in apposition to the individual lugs 15, as shown in Fig. 2, and which are adapted for engagement in screw threaded bores in the ends of the horizontal struts aforesaid. The construction is such that a rotation of a strut in one direction will effect a lineal extension of the same, while a rotation of the strut in an opposite direction will effect a lineal contraction of the strut. In the preferred construction as shown in Figs. 1 and 2, the screw threaded stems 16, are connected in a pivotal manner to the posts 2, by means of pivot brackets 17, so that said struts will remain attached to the respective posts, with the parts adapted to fold together in a knock-down condition of the tripod.

18, is a centrally arranged and lineally adjustable tension member attached at its upper end to the tri-

pod top 1, and at its lower end to the floor, or other support for the tripod; so that by a manual lineal contraction of said tension member, a strong downward stress is imposed upon the tripod parts, which in connection with the horizontal stress imposed by the heretofore described extensible struts, is adapted to impart great rigidity and stability to the tripod parts and their connections. In the preferred form of said tension member a construction as follows is employed:—

19, is a chain or like flexible section, constituting the main portion of said tension member. 20, is a clip piece attached to the lower end of said chain section, and provided with a T shaped extension 21, adapted for engagement with an attaching plate secured to the floor or base of the tripod. 22, is the floor plate, above referred to, provided with an elongated entrance orifice 23, in its upper surface, through which the T shaped extension of the aforesaid clip piece may be introduced, and by a quarter-turn effect a substantial, yet readily detachable, engagement between said clip piece and the floor plate. 24, is a non-circular bar moving in a non-revoluble manner in a non-circular guide orifice in the tripod top 1; such bar is provided at its upper end with a screw-threaded shank 25, and at its lower end with an eye 26, for engagement with the upper end of the chain section 19, aforesaid. 27, is a revoluble head turning in the tripod top 1, and provided with a screw-threaded bore for operative engagement with the screw-threaded shank 25, of the bar 24 aforesaid, and adapted when turned by hand to impart vertical movement to the bar 24, in one or the other direction, and in the one case impart tension to the tension member 18, and in the other case release such tension.

28, are brackets on the side of one of the tripod posts, and 29 is a vertical screw turning in said brackets, and by its vertical adjustment adapted to effect a local vertical adjustment of said post, with a corresponding adjustment of the tripod top to a level, or to a limited degree of inclination as required.

Having thus fully described my said invention what I claim as new and desire to secure by Letters Patent, is:—

1. In a knock-down stand or tripod, the combination of a top, a series of posts, means for rigidly connecting the posts together, and a central tension member attached to the top aforesaid and to the supporting floor or base, substantially as set forth.
2. In a knock-down stand or tripod, the combination of a top, a series of posts, means for rigidly connecting the posts together, a lineally adjustable tension member attached to said top and arranged centrally between the series of posts, and detachable means for connecting the lower end of the tension member to the floor or base upon which said posts are supported, substantially as set forth.
3. In a knock-down stand or tripod, the combination of a top, a series of posts, means for rigidly connecting the posts together, and a lineally adjustable tension member attached to the top aforesaid and to the supporting floor or base, the same comprising an upper section movable in the tripod top, an intermediate flexible section, a lower clip member, a floor plate adapted for detachable engagement with said clip member, and means for imparting vertical adjustment to said upper section, substantially as set forth.
4. In a knock-down stand or tripod, the combination of a top, a series of posts, means for rigidly connecting the posts together, and a lineally adjustable tension member attached to the top aforesaid and to the supporting floor or base, the same comprising an upper section movable in

the tripod top and provided with a screw-threaded shank, an intermediate flexible section, a lower clip member provided with a T shaped extension, a floor plate formed with an elongated orifice, and a rotary head having operative engagement with the screw-threaded shank aforesaid, substantially as set forth.

5. In a knock-down stand or tripod, the combination of a top, a series of posts, means for rigidly connecting the posts together, a central tension member attached to the tripod top, detachable means for connecting the lower end of the tension member to the floor or base upon which said posts are supported, and means for imparting a vertical adjustment to one of the posts, substantially as set forth.

6. In a knock-down stand or tripod, the combination of a top, a series of posts, means for rigidly connecting the posts together, a central tension member attached to the tripod top, detachable means for connecting the lower end of the tension member to the floor or base upon which said posts are supported, a bracket on one of the posts and a vertical screw turning in said bracket and adapted to impart a local adjustment to said post, substantially as set forth.

7. In a knock-down stand or tripod, the combination of a top, a series of posts, means for rigidly connecting the posts together, a lineally adjustable tension member attached to the tripod top, detachable means for connecting the lower end of the tension member to the floor or base upon which said posts are supported, a bracket on one of the posts and a vertical screw turning in said bracket and adapted to impart a local adjustment to said post, substantially as set forth.

8. In a knock-down stand or tripod, the combination of a top, a series of posts detachably secured to said top, a series of intersecting diagonal stay bars pivotally connected at their ends to the posts, and a series of lineally extensible struts arranged horizontally between the lower ends of the posts, substantially as set forth.

9. In a knock-down stand or tripod, the combination of a top, a series of posts detachably secured to said top, a series of intersecting diagonal stay bars pivotally connected at their ends to the posts, a series of lineally extensible struts arranged horizontally between the lower ends of the posts, and means for imparting vertical adjustment to one of the posts, substantially as set forth.

10. In a knock-down stand or tripod, the combination of a top, a series of posts detachably secured to said top, a series of intersecting diagonal stay bars pivotally connected at their ends to the posts, a series of lineally extensible struts arranged horizontally between the lower ends of the posts, and a lineally adjustable tension member attached to the top aforesaid and to the supporting floor or base, substantially as set forth.

11. In a knock-down stand or tripod, the combination of a top, a series of posts detachably secured to said top, a series of intersecting diagonal stay bars pivotally connected at their ends to the posts, a series of lineally extensible struts arranged horizontally between the lower ends of the posts, a lineally adjustable tension member attached to the top aforesaid and to the supporting floor or base, and means for imparting a vertical adjustment to one of the posts, substantially as set forth.

12. In a knock-down stand or tripod, the combination of a top, a series of posts detachably secured to said top, a series of intersecting diagonal stay bars pivotally connected at their ends to the posts, a series of lineally extensible struts arranged horizontally between the lower ends of the posts, and a lineally adjustable tension member attached to the top aforesaid and to the supporting floor or base, the same comprising an upper section movable in the tripod top, an intermediate flexible section, a lower chamber, a floor plate adapted for detachable engagement with said clip member, and means for imparting vertical adjustment to said upper section, substantially as set forth.

13. In a knock-down stand or tripod, the combination of a top, a series of posts detachably secured to said top, a series of intersecting diagonal stay bars pivotally connected at their ends to the posts, and a series of lineally extensible struts arranged horizontally between the lower

ends of the posts, and each comprising a tubular main portion, a screw threaded stem attached to one post, and engaging a screw threaded bore of said tubular portion, and a circular lug on another post adapted to engage in the opposite open end of said tubular portion, substantially as set forth.

14. In a knock-down stand or tripod, the combination of a top, a series of posts detachably secured to said top, a series of intersecting diagonal stay bars pivotally connected at their ends to the posts, and a series of lineally extensible struts arranged horizontally between the lower ends of the posts, and each comprising a tubular main portion, a screw threaded stem pivotally attached to one post and engaging a screw threaded bore of said tubular portion, and a circular lug on another post adapted to engage in the opposite open end of said tubular portion, substantially as set forth.

15. In a knock-down stand or tripod, the combination of a top, a series of posts provided at their upper ends with stems formed with lateral recesses at their upper ends, a series of bushings attached to the tripod top and formed with orifices for the passage of the stems aforesaid, revoluble cam plates pivoted to said bushings and adapted to engage the lateral recesses of the stems aforesaid, a series of intersecting diagonal stay bars pivotally connected at their ends to the posts, and a series of lineally extensible struts arranged horizontally between the lower ends of the posts, substantially as set forth.

16. In a knock-down stand or tripod, the combination of a top, a series of posts provided at their upper ends, with

stems formed with lateral recesses at their upper ends, a series of bushings attached to the tripod top and formed with open top recesses and with orifices for the passage of the stems aforesaid, revoluble cam plates pivoted to said bushings and adapted to engage the lateral recesses of the stems aforesaid, a series of intersecting diagonal stay bars pivotally connected at their ends to the posts, and a series of lineally extensible struts arranged horizontally between the lower ends of the posts, substantially as set forth.

17. In a knock-down stand or tripod, the combination of a top, a series of posts provided at their upper ends with stems formed with lateral recesses at their upper ends, a series of bushings attached to the tripod top and formed with open top recesses and with orifices for the passage of the stems aforesaid, revoluble cam plates pivoted to said bushings and formed with peripheral notches and adjacent cam faces adapted for engagement with the lateral recesses of the stems aforesaid, a series of intersecting diagonal stay bars pivotally connected at their ends to the posts, and a series of lineally extensible struts arranged horizontally between the lower ends of the posts, substantially as set forth.

Signed at Chicago, Illinois this 28th day of January 1905.

ALVAH C. ROEBUCK.

Witnesses:

ROBERT BURNS,
M. H. HOLMES.