

E. HARTWIG.
TRUSS.

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1,034,793.

Patented Aug. 6, 1912.

Fig. 1

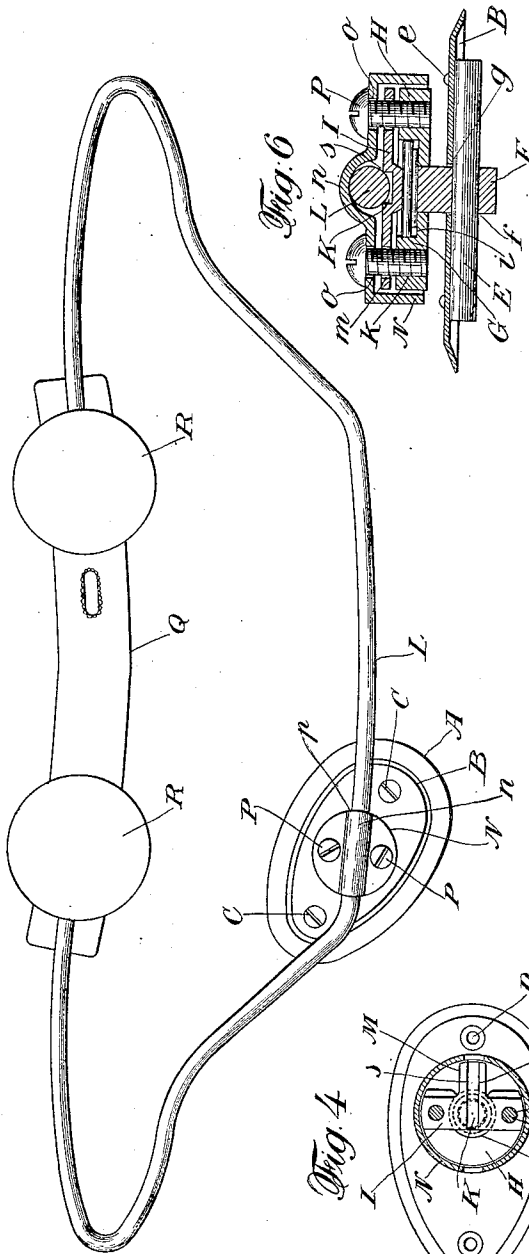


Fig. 6

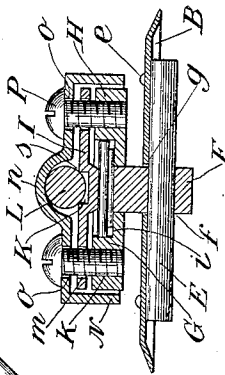


Fig. 5

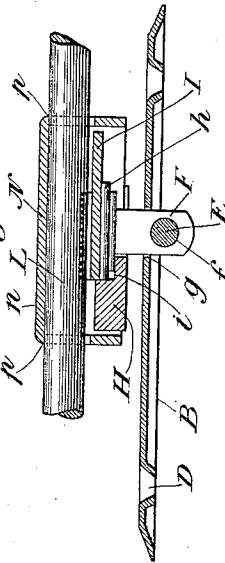


Fig. 2

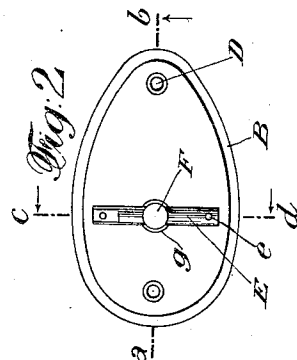


Fig. 4

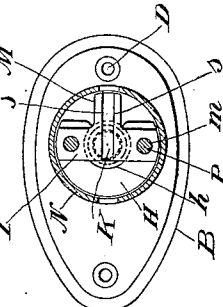
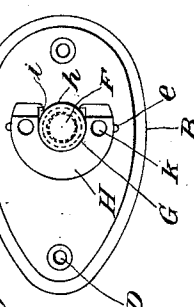


Fig. 3



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UNITED STATES PATENT OFFICE.

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TRUSS.

1,034,793.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, EMIL HARTWIG, a citizen of the United States, and a resident of Jersey City, county of Hudson, and State of New Jersey, have invented a new and useful Improvement in Trusses, of which the following is a specification.

This invention relates to trusses and has for its object the construction and arrangement of the spring or frame and of the devices or parts for connecting the pad with the spring or frame in such manner that the pad may be conveniently adjusted upon and secured to the frame and that the latter may be made of round wire, and that the advantages of adjustment and security hereinafter pointed out and claimed may be obtained.

Referring to the accompanying drawings forming part of this specification, Figure 1 is a front elevation of a truss having a pad and frame constructed and connected in accordance with this invention. Fig. 2 is an elevation of the means shown in Fig. 1 connecting the pad with the frame, viewed from the side upon which the pad is secured. Fig. 3 is an elevation of the other side of said means, part thereof having been removed. Fig. 4 is an elevation, partly in vertical section, of said means viewed from the same side as in Fig. 3. Fig. 5 is a side view, partly in section, made as indicated by the line *a b* in Fig. 2, of said means for connecting the pad with the frame and shows part of the frame. Fig. 6 is a side view, partly in section, made at right angles to the line of the section shown in Fig. 5 and as indicated by the line *c d* in Fig. 2, of said means for connecting the pad with the frame and shows a cross section of the frame. The arrows in Fig. 2 show the directions of the views in Figs. 5 and 6.

In the drawings like letters denote like parts.

A is the pad which is attached to the pad-plate B by means of screws C passing through holes D in the pad plate.

E is a rod secured to the pad-plate, as by rivets *e*, upon the pad side of the pad-plate.

F is an inflexible standard provided with a hole *f* through which the rod E passes on the pad side of the pad-plate. The standard F passes from the rod E through a hole

g with which the pad-plate is provided, preferably mid-way between its sides and a little below the point mid-way between its top and bottom, reference being had to Fig. 2 and as there indicated. The width of the hole *g* is somewhat greater than the width of the standard F so that points of the standard F, which, preferably, is loosely mounted and pivoted on the rod E, are free to oscillate in planes at right angles to the rod E. The other end of the standard F is provided, on the other side of the pad-plate, with a flat, circular or disk-shaped head *h*, as shown in Letters-Patent No. 505,228, of September 19, 1893 to D. Pomerooy, for improvement in trusses.

The head *h* of the standard F rests in a recess G in the screw-plate H, which is provided with a shoulder *i* fitting part way around standard F and extending beneath head *h*. The screw-plate H is revoluble about standard F and the head *h* of the standard F can be inserted into or withdrawn from the recess G of the screw-plate H by a lateral movement and is revoluble therein. The shoulder *i*, engaging with the head *h*, will prevent the withdrawal of the screw-plate H from the standard F by an upward movement in the direction of the length of the standard F. The screw-plate H is provided with screw-holes *k*, preferably extending therethrough. The upper surfaces of head *h* and of screw-plate H are, preferably, in the same plane.

Resting upon the upper surfaces of head *h* and screw-plate H is the holding plate I, preferably made of steel or other suitable hard metal, which is provided on the side away from the screw-plate H with a groove K having sharp, parallel edges *s* for engagement with the frame L. As shown in Fig. 6, the distance between the parallel edges *s* of the groove K is less than the diameter or width of the cross-section of the frame L and is, preferably, about one-third thereof. The holding-plate I is provided with holes *m* just above the screw-holes *k* in the screw-plate H. Preferably, the holding-plate I is provided with a tongue or extension M on one side to act as a guide for the head *h* when the latter is inserted in recess G as hereinafter explained. The screw-plate H and the holding-plate I have such

relative positions that the tongue M extends beyond the short or cut-off side of the screw-plate H, as shown clearly in Fig. 4.

Surrounding and covering the screw-plate H and holding-plate I is the shell N which, preferably, is in the shape of a hollow cylinder closed at the top and open at the bottom. The top of the shell N is provided with holes *o* above the holes *m* in holding-plate I and the screw-holes *h* in the screw-plate H and is also provided with a convex portion *n* extending from side to side between the holes *o*. The shell N is, furthermore, provided on its sides with holes *p* beneath the ends of the convex portion *n*. The part *n* is concave on the interior side of the shell N and the uppermost points of the holes *p* are, preferably, at the ends of the uppermost straight line extending from side to side along the top of the concavity of part *n*. The concavity of the part *n* and the holes *p* are of such shape and size that the frame L will pass therethrough and come in contact with the upper surface of the concavity of the part *n*. The groove K of the holding-plate I faces the concavity of the part *n* and the frame L, which is preferably made of round wire, passes in and along the groove and the concavity. Screws P passing through the holes *o* and *m* and into or through the screw-holes *h* hold the shell N, the holding plate I and the screw-plate H together in the positions and relations above set forth.

Q is a band connecting the ends of the spring or frame L and R are pads affixed to the rear of the truss.

From the foregoing description the mode of operation and the advantages of a truss constructed in accordance with this invention will be readily understood. The shell N, the holding-plate I and the screw-plate H, having been placed in their proper, relative positions as above described, are loosely secured together by means of the screws P. The head *h* of the standard F, carrying the pad-plate B with the pad A attached, is inserted into the recess G of the screw-plate H, the tongue M of the holding-plate I acting as a guide and aiding the insertion. The frame L, free from the band Q connecting its ends and from the pads R and made, preferably, as above stated of round wire, is then, by inserting one of its ends, passed through the holes *p* in the shell N and in and along the concavity of the part *n* and the groove K of the holding-plate I until any desired position, such as that shown in Fig. 1, of the pad A and its connecting parts is obtained upon the frame L. Thereupon the pad A and the pad-plate B are caused to be revolved, by revolution of the standard F within the recess G of the screw-plate H, until the pad is brought into the position sought as a result of such move-

ment or revolution. Simultaneously with or before or after the preceding movement or adjustment, the points of shell N, holding-plate I, screw-plate H and pad A, and pad-plate B connected therewith by standard F, may be tilted or revolved upon the frame L in planes perpendicular to the planes in which the oscillating pad-plate B revolves when the standard F is revolved within the recess G of the screw-plate H, as above described. The pad having been adjusted in the manner described so as to secure the position desired or most advantageous for the purposes of the operator, the screws P are thereupon further screwed into the screw-holes *h* of the screw-plate H until the adjustable parts are brought and locked firmly in the desired position. By such further insertion of the screws P into the screw-holes *h*, the screw-plate H is drawn toward the top or covered part of the shell N carrying with it the standard F and bringing the head *h* of the standard F to bear tightly upon the lower surface of the holding-plate I. At the same time the upper surface of the screw-plate H is brought into close contact with the lower surface of the holding-plate I, with the result that further revolution of standard F within recess G is impossible. The beforementioned pressure upon the lower surface of holding-plate I forces that plate against the frame L, whereby frame L is forced into the concavity of the part *n* of the shell N and against the wall thereof. The sharp edges *s* of the groove K firmly grip that part of the frame L with which they come in contact and by reason thereof and of the pressure of the frame L against the wall of the concavity of the part *n*, no further tilting or movement of the parts mentioned in the manner described about the frame L is possible. After the screws P have been tightened as above described, the pad A and pad-plate B can move only by reason of the oscillating motion above mentioned of the standard F upon the rod E and within the hole *g*, which oscillating motion may, if desired, be obviated in any suitable manner, as by making the hole *g* of small diameter or by making the rod E and the hole *f* in the standard F square instead of round.

The present invention permits the use of round wire for the construction of the frame of the truss and thereby permits of the tilting or movement of the parts upon the frame as above described in adjustment, and, at the same time, enables the operator, after proper adjustment, firmly to lock the parts together as above pointed out. It also permits the retention, after adjustment and locking of the parts, of the oscillating motion of the pad, due to the oscillation of the standard F upon its pivot rod E. It also secures, in a novel manner and combination,

the other above mentioned movements of the pad in adjustment and the prevention thereof after locking of the parts.

What I claim is:—

5 1. In a truss, the combination of a pad-plate, a screw-plate provided with a recess open at one side, a standard connecting the pad-plate and screw-plate and revoluble within the recess of the screw-plate, a frame, 10 a holding plate bearing upon the frame, a shell revoluble about the frame, and means for locking the standard, screw-plate, frame, holding-plate and shell together, forcing the holding-plate toward the frame substantially as described. 15

2. In a truss, the combination of a standard, provided at one end with a head, a pad-plate secured to the other end of the standard, a screw-plate provided with a recess 20 receiving the head of the standard, the standard being revoluble in the recess, a frame, a holding-plate between the frame and standard bearing on one side against the head of the standard and provided on

the other side with sharp edges bearing 25 upon the frame, and means for locking the standard, screw-plate, frame, holding-plate and sharp edges securely together, substantially as described.

3. In a truss, the combination of a stand- 30 ard, a pad-plate secured to one end of the standard, a screw-plate provided with a recess receiving the other end of the standard, the standard being revoluble within the recess, a frame, a holding-plate between the 35 frame and standard bearing on one side against the standard and provided on the other side with sharp edges bearing against the frame, the holding-plate being movable along and revoluble about the frame, and 40 means for locking the standard, screw-plate, frame, holding-plate and sharp edges securely together, substantially as described.

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Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."