

No. 897,040.

PATENTED AUG. 25, 1908.

J. W. WASH.  
STRAIN EQUALIZER.  
APPLICATION FILED JAN. 4, 1908.

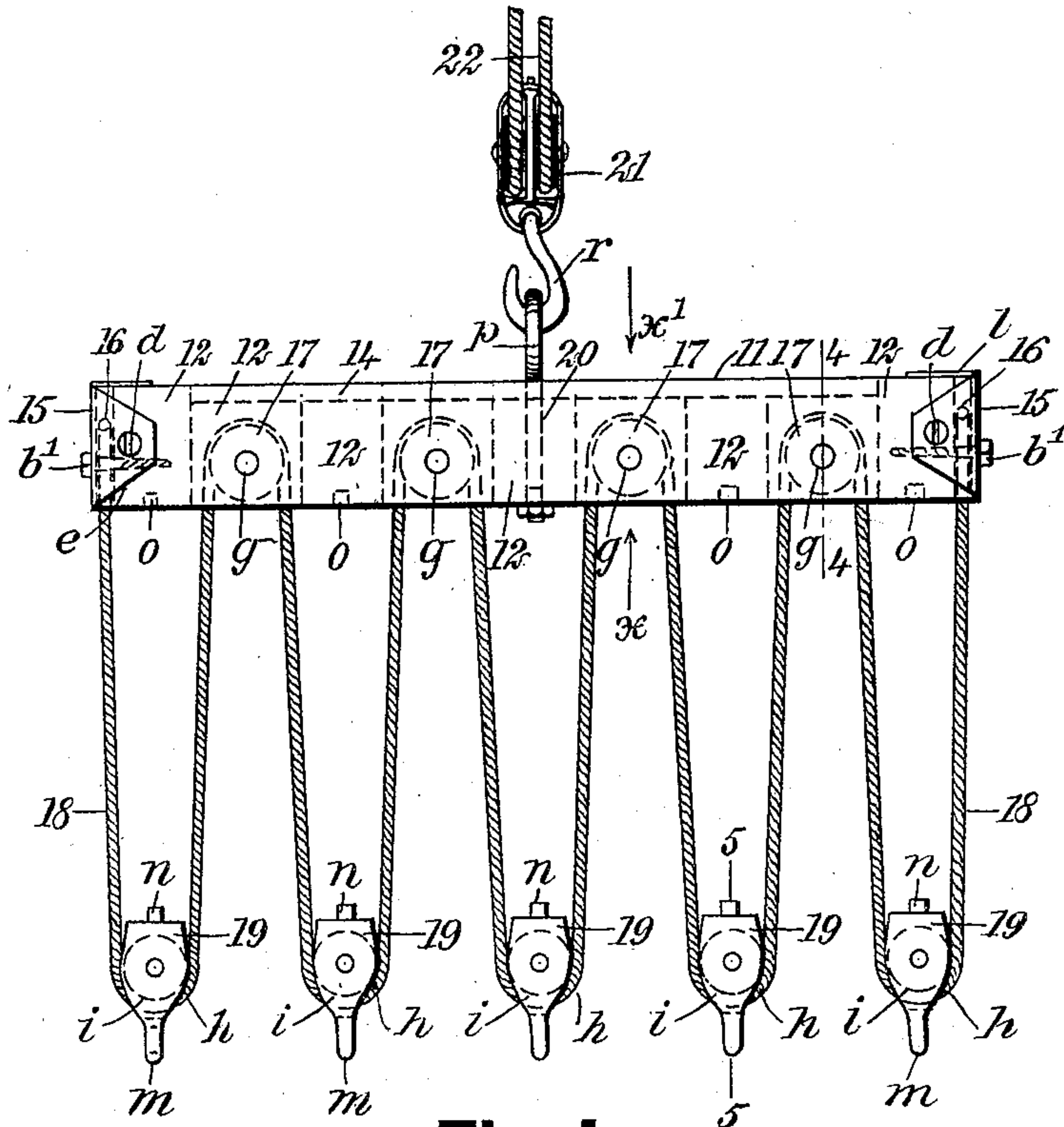


Fig. 1.

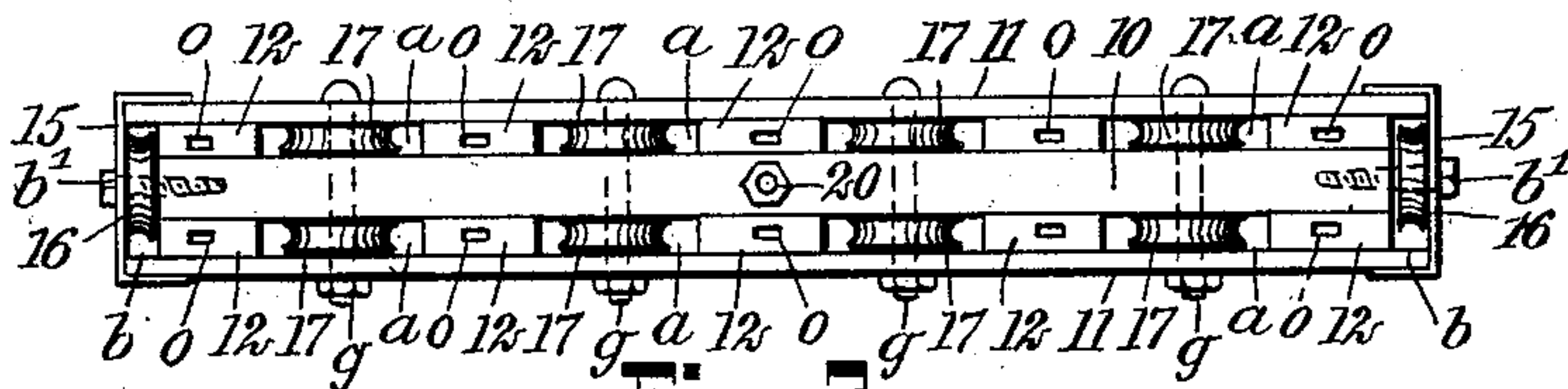


Fig. 2.



Fig. 3.

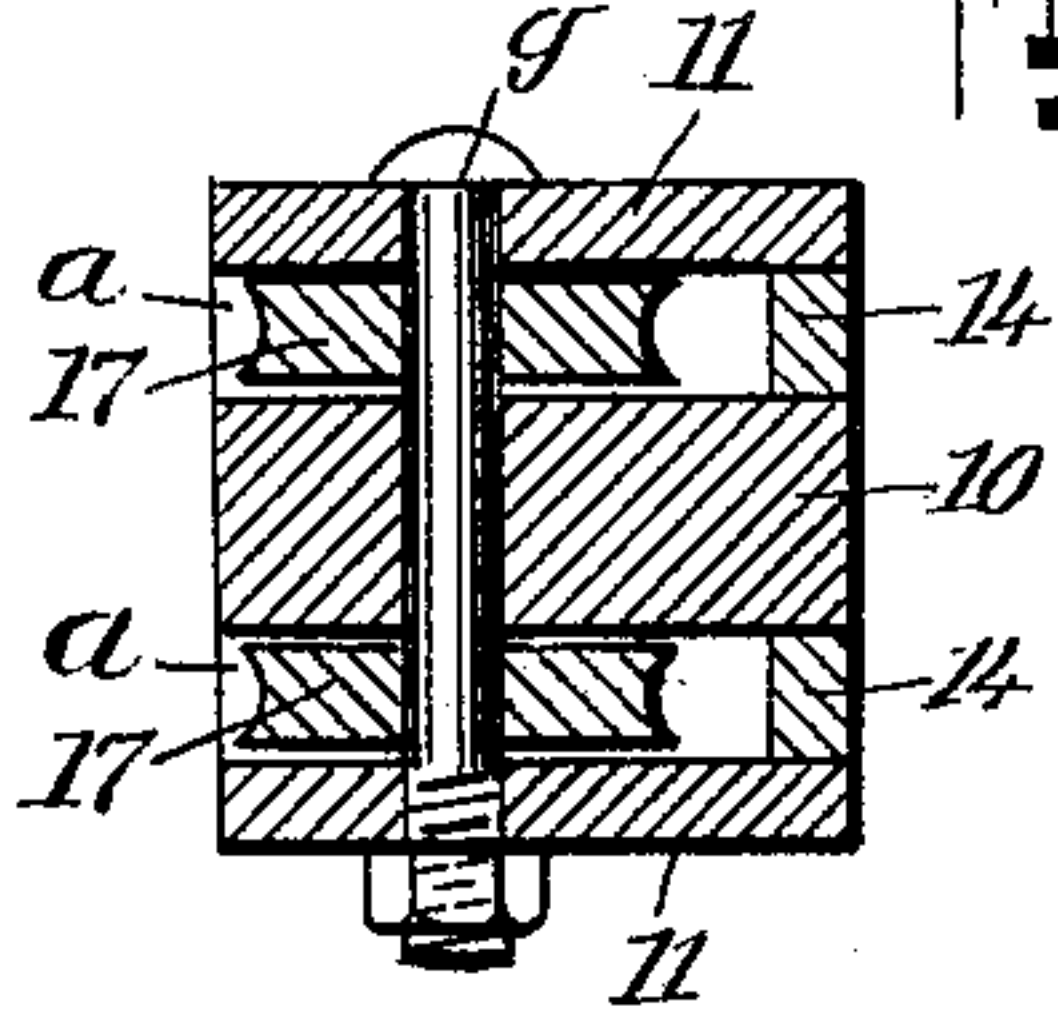


Fig. 4.

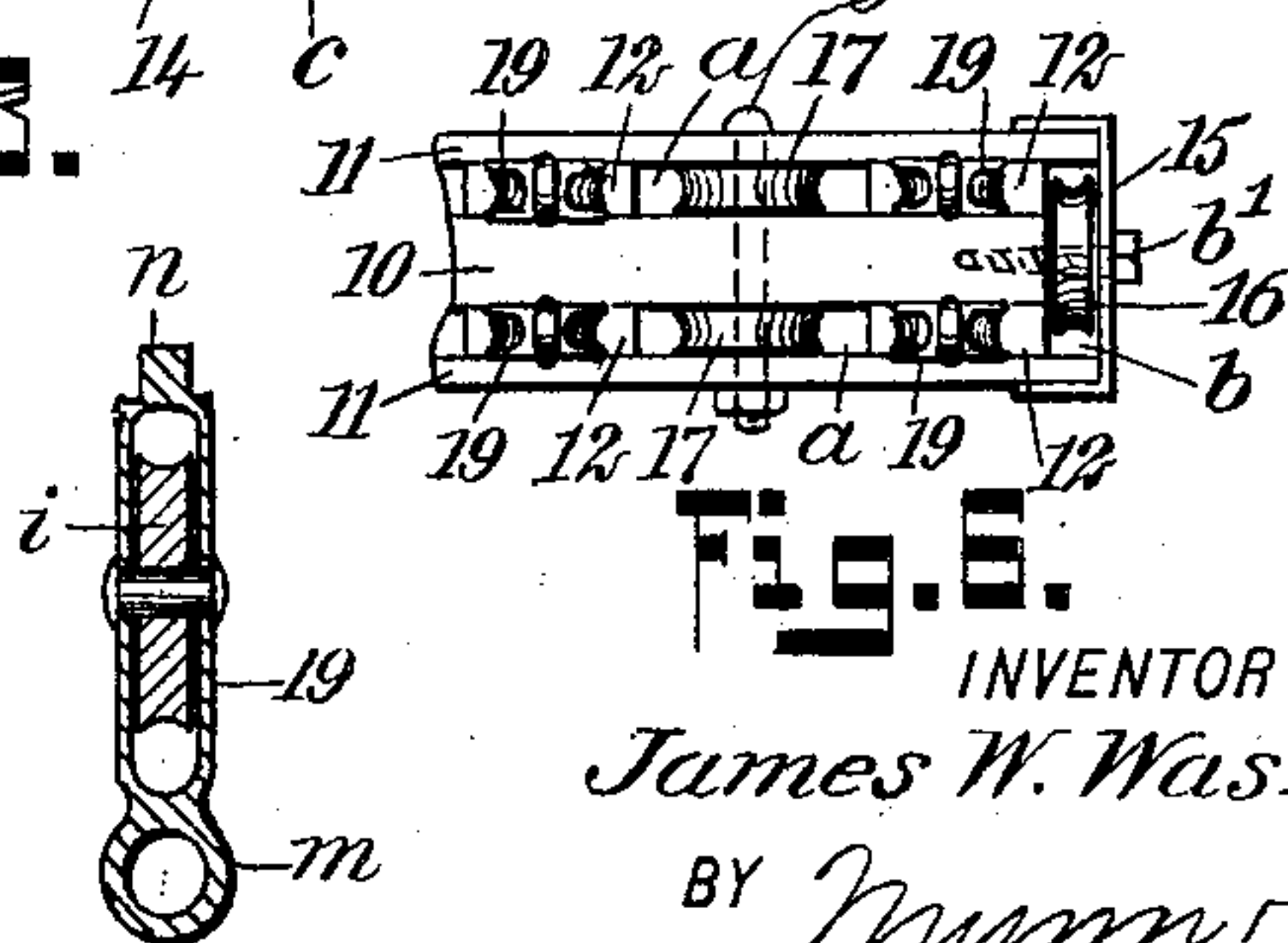


Fig. 5.

WITNESSES  
Chas. A. Clark.

Wm. P. Patton

INVENTOR  
James W. Wash  
BY *Wm. P. Patton*  
ATTORNEYS



# UNITED STATES PATENT OFFICE.

JAMES W. WASH, OF CARROLLTON, KENTUCKY.

## STRAIN-EQUALIZER.

No. 897,040.

Specification of Letters Patent.

Patented Aug. 25, 1908.

Application filed January 4, 1908. Serial No. 409,281.

*To all whom it may concern:*

Be it known that I, JAMES W. WASH, a citizen of the United States, and a resident of Carrollton, in the county of Carroll and State of Kentucky, have invented a new and Improved Strain-Equalizer, of which the following is a full, clear, and exact description.

The purpose of this invention is to produce a draft strain equalizer, embodying novel, simple details of construction and which may be employed to effect equal draft upon a plurality of wires or cables; and particularly to equalize draft strain exerted upon a plurality of telephone or telegraph wires strung overhead upon suitable supports, so that all may be pulled taut by a single rope or chain; and a further object is to improve the construction of the strain equalizer patented by me April 9, 1907 and numbered 850,080.

The invention consists in the novel construction and combination of parts, as is hereinafter described and defined in the appended claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a plan view of the improved strain equalizer; Fig. 2 is a side view of the same, seen in direction of the arrow *x* in Fig. 1, parts being omitted; Fig. 3 is an opposite side view of the same, seen in direction of the arrow *x'* in Fig. 1, parts being omitted; Fig. 4 is an enlarged transverse sectional view, substantially on the line 4—4 in Fig. 1; Fig. 5 is a transverse sectional view of one of a plurality of pulley blocks employed, and Fig. 6 is a view similar to Fig. 2, but showing an end portion of the device, having novel pulley blocks seated thereon.

A composite draft bar that is a main feature of the improvement, is constructed as follows: An elongated body is made up of a center bar 10 and two similar side bars 11, 11, that are spaced from the center bar and held parallel therewith by series of spacing blocks 12 and elongated strips 14. The blocks 12, of an equal size, are rectangular in contour and have parallel sides, their width being less than that of the side bars 11 and center bar 10. The blocks 12 have their lower edges disposed flush with like edges of the side bars and center bar, by an attachment of said blocks to the latter by

any suitable means, an equal space intervening said blocks, as indicated at *a*. The spacing blocks 12 that are nearest to the ends of the side bars 11, are spaced therefrom but are flush with the ends of the center bar 10, which is somewhat shorter than the side bars, whereby similar recesses *b* are formed at the ends of the draft bar. The width of the center bar 10 and side bars 11 being equal and greater than that of the blocks 12, affords two similar channels between the side bars and center bar, and into said channels the strips 14 are respectively fitted and removably secured by means of screws *c*, that pass through the strips and into certain of the spacing blocks 12. Upon each end of the pair of side bars 11, a bracket plate 15 is secured by means of screws *d*, that are inserted through lateral flanges *e*, formed on the bracket plates, and that lap upon the center bar and side bars, the screws *d* being inserted into said bars. In the recesses *b*, that have been closed at their outer ends by the bracket plates 15, two similar grooved pulleys 16 are pivoted by pins or screw bolts *b'*, that are inserted through the respective bracket plates and into corresponding ends of the center bar 10, which disposes the pulleys transversely on said ends, as shown in Figs. 2 and 6 of the drawings.

The recesses *a*, that are formed between the blocks 12, and that are defined in width considered laterally by the side surfaces of the center bar 10 and side bars 11, are thus arranged in pairs, and in each pair of these recesses, two similar grooved sheaves 17 are respectively pivoted upon a central pin or bolt *g* that passes through the center bar and side bars, as is clearly shown in Fig. 2, whereby two similar sets of spaced sheaves 17 are rotatably supported upon the center bar 10 and side bars 11, extending longitudinally thereof and separated by the center bar. An endless rope or cable 18 is roven upon the sheaves 17 and transverse pulleys 16, having loops or bights *h* in the rope which receive the sheaves *i* of similar pulley blocks 19, and to facilitate the roving of the rope, the strips 14 are first removed from the bars 11.

To more specifically describe the rigging of the rope or cable, it will be understood that the endless rope is first looped over one transverse pulley 16, thus providing two pendent runs thereof, which are doubled, producing a bight *h* in each run, whereon a



block 19 is mounted, thus disposing two pulley blocks side by side. From the first pair of pulley blocks 19, the upward runs of the rope extend into engagement with the second pair of sheaves 17 and thence the rope trends downward into looped engagement with a second pair of pulley blocks 19. This operation is continued until all the sheaves 17 are engaged by the rope or cable 18, and pulley blocks 19 have been mounted upon pendent loops formed in the rope. From the last pair of pulley blocks 19, that are disposed side by side, the remaining doubled portion of the rope that is looped, is engaged at said loop or bight with the remaining transverse sheave or pulley 16. The body of each pulley block 19, is preferably constructed as shown, having an eye *m* formed at one end, and at the other end a flattened face is produced, from which an angular toe *n* projects at the center thereof. In the lower face of each spacing block 12, a socket *o* is formed, that will freely receive the toe *n* on a corresponding pulley block 19.

Centrally on the draft bar hereinbefore described, an eye bolt 20 is secured, it being passed through the middle of the center bar 10 and secured at the inserted end as indicated in Fig. 1, the integral ring *p* on the other end of said bolt being adapted to receive a hook *r* that is pendent from a sheave block 21, that may be engaged by a cable 22, the latter being extended for application of draft force to the draft bar with which it is connected.

In service, there may be all or any number of the pulley blocks 19 engaged with wires that are to be drawn taut and draft strain applied upon the cable 22. If less than the entire number of blocks 19 are in service, such as are idle will be drawn into engagement with the respective spacing blocks 12, the toes *n* on said idle blocks entering the sockets *o* they are drawn toward, and serve to prevent side draft from unseating the pulley blocks, which have their flat ends forcibly seated upon the blocks 12.

It will be noted that by the provision of duplicate pairs of sheaves, rotatably mounted side by side on the draft bar, and the roven engagement of a rope or cable therewith, a compact, powerful device is produced that is light, strong, convenient to use and is well adapted for rendering taut a plurality of wires for fences or those employed as main line wires for telephone and telegraph service; and to cheapen, as well as lighten the apparatus, it is preferred to construct the main portions thereof from light, strong, hard wood.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. A strain equalizer, comprising an elongated body, a plurality of pairs of sheaves pivoted in the body at intervals, a transverse pulley pivoted upon each end of the body, an endless cable roven over the sheaves and transverse pulleys, and pulley blocks engaging their sheaves with looped portions of the cable.

2. A strain equalizer, comprising an elongated body having a plurality of spaced recesses therein, arranged in pairs side by side, sheaves pivoted in each pair of recesses on a single pivot, a transverse pulley pivoted at each end of the body, an endless cable roven over the sheaves and pulleys, and pulley blocks engaging their sheaves with looped portions of the cable.

3. A draft bar for a strain equalizer, comprising a center bar, two side bars, blocks secured between the center bar and side bars at intervals, affording recesses in the draft bar disposed side by side in pairs, sheaves in pairs pivoted in opposite recesses by a pivot bolt for each pair thereof, and two pulleys transversely disposed at the ends of the draft bar and pivoted thereon.

4. A draft bar for a strain equalizer, comprising a center bar, two side bars, a plurality of spaced blocks secured at intervals between the center bar and side bars, affording recesses in the draft bar disposed side by side in pairs, sheaves in pairs pivoted in opposite recesses by a single pivot for each pair thereof, bracket plates at the ends of the draft bar, and transverse pulleys pivoted in recesses at the ends of the draft bar, the pivots engaging the ends of the center bar and perforations in the bracket plates.

5. In a draft strain equalizer of the character described, a center bar, two side bars, and a plurality of spacing blocks secured at intervals between the center bar and side bars, each spacing block having a socket in one edge thereof.

6. A draft equalizing apparatus, comprising a draft bar, a plurality of sheaves pivoted in said draft bar at intervals, spacing blocks arranged in the draft bar between the sheaves, each block having a socket formed in one edge thereof, transverse pulleys pivoted at the ends of the draft bar, an endless cable roven upon the pulleys and sheaves, pulley blocks having flattened ends and toes projected from said ends adapted for embedment in the sockets, and means for producing draft strain on the draft bar.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JAMES W. WASH.

Witnesses:

JOHN J. HOWE,  
L. H. SCHUERMAN.