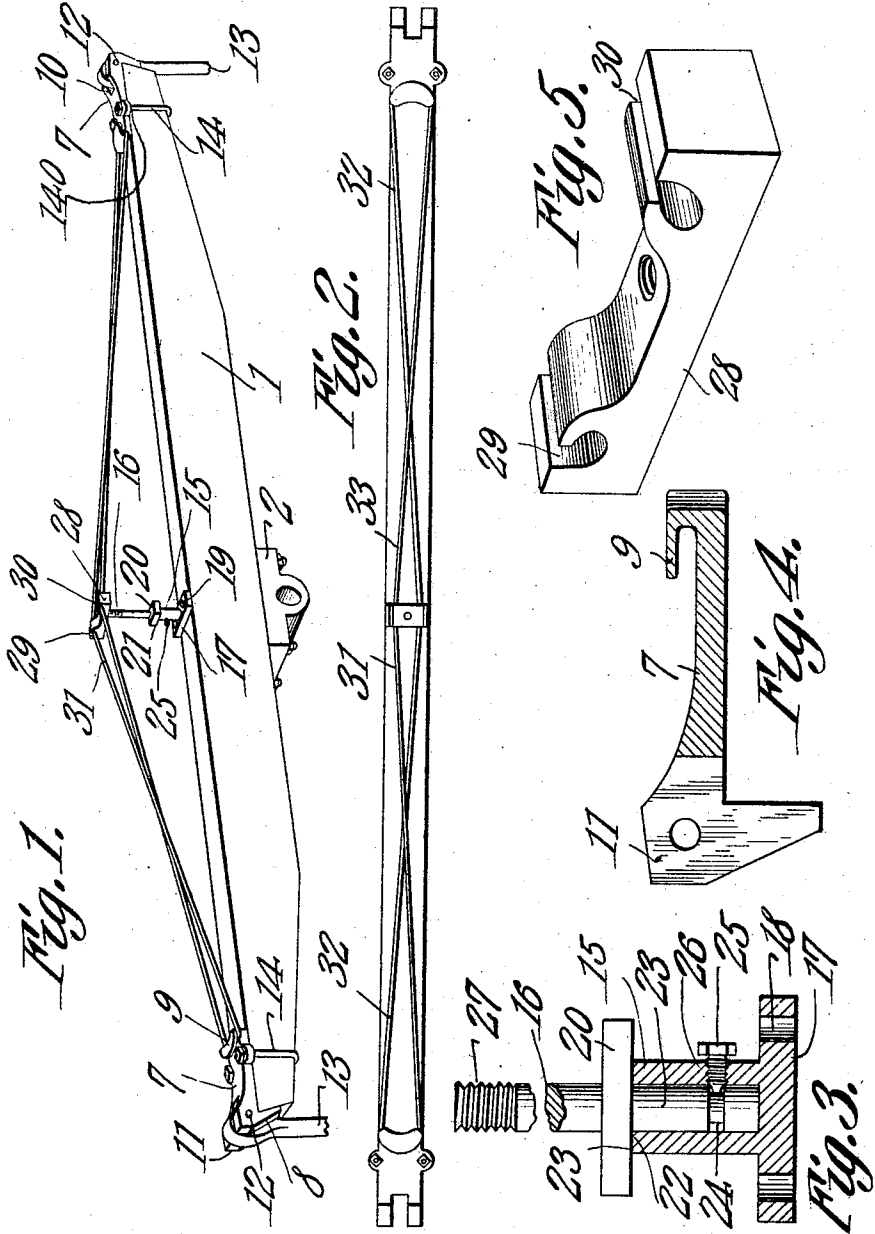


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 TRUSSED WALKING BEAM.
 APPLICATION FILED AUG. 16, 1909.

992,389.

Patented May 16, 1911.



Witnesses

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GEORGE E. SMITH, OF COALINGA, CALIFORNIA.

TRUSSED WALKING-BEAM.

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Specification of Letters Patent.

Patented May 16, 1911.

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To all whom it may concern:

Be it known that I, GEORGE E. SMITH, a citizen of the United States, residing at Coalinga, in the county of Fresno and State of California, have invented a new and useful Trussed Walking-Beam, of which the following is a specification.

My invention relates to trussed walking beams used for drilling oil or gas wells, and has for an object to strengthen the beam by a truss which will permit of a certain amount of resiliency in the beam so as to prevent the same from snapping off under abnormal strain.

A further object is to provide a device of this character having an adjustable strut which holds the truss at any desired tension.

A still further object is to provide a device of this character having anchor plates for holding the terminals of the truss.

It is customary in the drilling of oil and gas wells to use a walking beam for operating the drill and since the heavy drills very often jam in the hole, the walking beam is continually being subjected to great and sudden strains. A certain amount of resiliency to meet the strain is imperative in the walking beam, but since the strain is lateral as well as vertical, the beam must be so trussed that the resiliency will be restricted to a like degree both against a too free lateral movement as well as a too free vertical movement. To meet these requirements my present invention employs an endless cable secured to the opposite ends of the beam and held under tension intermediate the ends by an adjustable supporting standard. This feature of the endless cable being at no point positively held permits of the required amount of resiliency of the walking beam, while at the same time restricts a too free lateral or vertical resiliency of the same.

With the above advantages and other objects in view which will appear as the nature of the invention is better understood, my invention embraces the structure illustrated in the accompanying drawing, in which like characters of reference designate similar parts in the views shown.

In the accompanying drawing, Figure 1 is a perspective view of a walking beam constructed in accordance with my invention. Fig. 2 is a plan view of the same. Fig. 3 is an enlarged detail view of the adjustable standard with parts shown in section. Fig.

4 is a sectional detail view of one of the anchor plates. Fig. 5 is a detail perspective view of the adjusting nut.

Referring now to the drawings for a more detailed description of my invention, 1 designates the beam which carries on its bottom face a shaft box 2 through which a fulcrum shaft may be engaged in the usual manner. Upon each end of the beam is an anchor plate 7 which terminates at one end in a down-turned extension 8 passing over the end of the beam, and at the other end in an upstanding hook 9 for engagement with the truss cable. The anchor plates 7 are forked at their outer ends at 10 and provided with bearings 11 in which the connecting pins 12 of the rods 13 are journaled. Either of the rods may be used as the actuating rod when the other will become the power rod for "jumping" the drill. The anchor plates have perforated ears 140 at their sides by which they are secured to the beam by U-shaped yokes 14 which pass entirely around the beam, thus preventing it from being split by any undue strain.

Positioned on the top face of the beam midway between the anchor plates 7 is an adjustable strut comprising a bearing post 15 and a stem 16 mounted for rotation in the bearing post. Integral with the bearing post is a foot plate 17 having openings 18 through which screws 19 may be inserted for securing the bearing post to the beam. Formed adjacent one end of the stem 16 is an enlargement 20 having wrench faces 21 by means of which the stem may be rotated in the bearing post. The bottom face 22 of the enlargement bears upon the top of the bearing post so that the weight of the stem is equally distributed over the top surface of the bearing post, thus permitting the journal portion 23 of the stem to freely rotate in the bearing post. The journaled portion of the stem has a surrounding groove 24 for engagement with a set screw 25 which projects through an opening 26 formed in the post and operates to removably secure the stem to the post.

The portion of the stem above the enlargement 20 is provided with screw threads 27 for engagement with an adjusting nut 28 which is the same in length as the width of the beam and is designed to travel on the threaded part of the stem in the usual manner. Recesses 29 and 3 are formed transversely the top face of the ad-

justing nut and are sufficient in size to loosely engage a truss cable 31, which latter has its terminals spliced together to form an endless cable. In securing the cable in operative position it is twisted so that terminal loops 32 and an intermediate loop 33 are formed, the terminal loops being inserted in the anchor plate hooks and the intermediate loop being engaged in the recesses of the adjusting nut, as shown. It is preferable to twist the truss cable, as above described in order to prevent the accidental disengagement of the adjusting nut from the truss cable.

By adjusting the nut 28 adjacent the bottom portion of the standard, the terminals of the cable may be extended so that the cable may be adjusted to various lengths of walking beams. By rotating the stem 16 in the bearing post the nut will be made to travel upward thereon and operate to draw the truss cable to any desired degree of tension.

It is evident that as the truss cable is not positively held at any point the adjusting nut will have a partial rotary movement on the stem when the beam is subjected to lateral strain, the advantage of this construction being to permit of a sufficient amount of resiliency of the parts to prevent the snapping off of the beam, the tension under which the truss is held preventing any buckling or too free lateral movement of the beam under abnormal strain.

From the foregoing description, taken in connection with the accompanying drawing, it is thought that the construction and operation of my invention will be easily understood without a more extended explanation, it being understood that various changes in the form, proportion and minor details of construction may be made with-

out sacrificing any of the advantages or departing from the spirit of the invention.

What is claimed is:

1. The combination with a walking-beam, a cable loop constituting a truss, and a strut between the centers of the beam and truss; of anchor plates at the ends of the beam, each lying thereon and having a hook at its inner end for engaging the end of the loop and its outer end provided with a downturned forked extension passing over the extremity of the beam and having bearings in the arms of its fork, a pin through said bearings forming a journal for the walking beam rod, lateral perforated ears between the extension and hook, and a U-shaped yoke embracing the beam and having its extremities engaging said ears.

2. The combination with a walking-beam, anchor plates lying upon its ends and over its outer extremities and having hooks, means for holding said plates in place, and an endless cable loop engaging said hooks and constituting a truss; of a strut at substantially the center of the beam and comprising a tubular post mounted thereon, a stem having its lower end journaled in said post and an angular enlargement bearing on the upper end of the post, the stem having a groove below the enlargement and threads above it, a set screw through the post with its tip engaging said groove, and a nut engaging said threads and having spaced recesses receiving the cable.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

GEORGE E. SMITH.

Witnesses:

J. A. FLUETSCH,
D. R. TRUMBLE.