

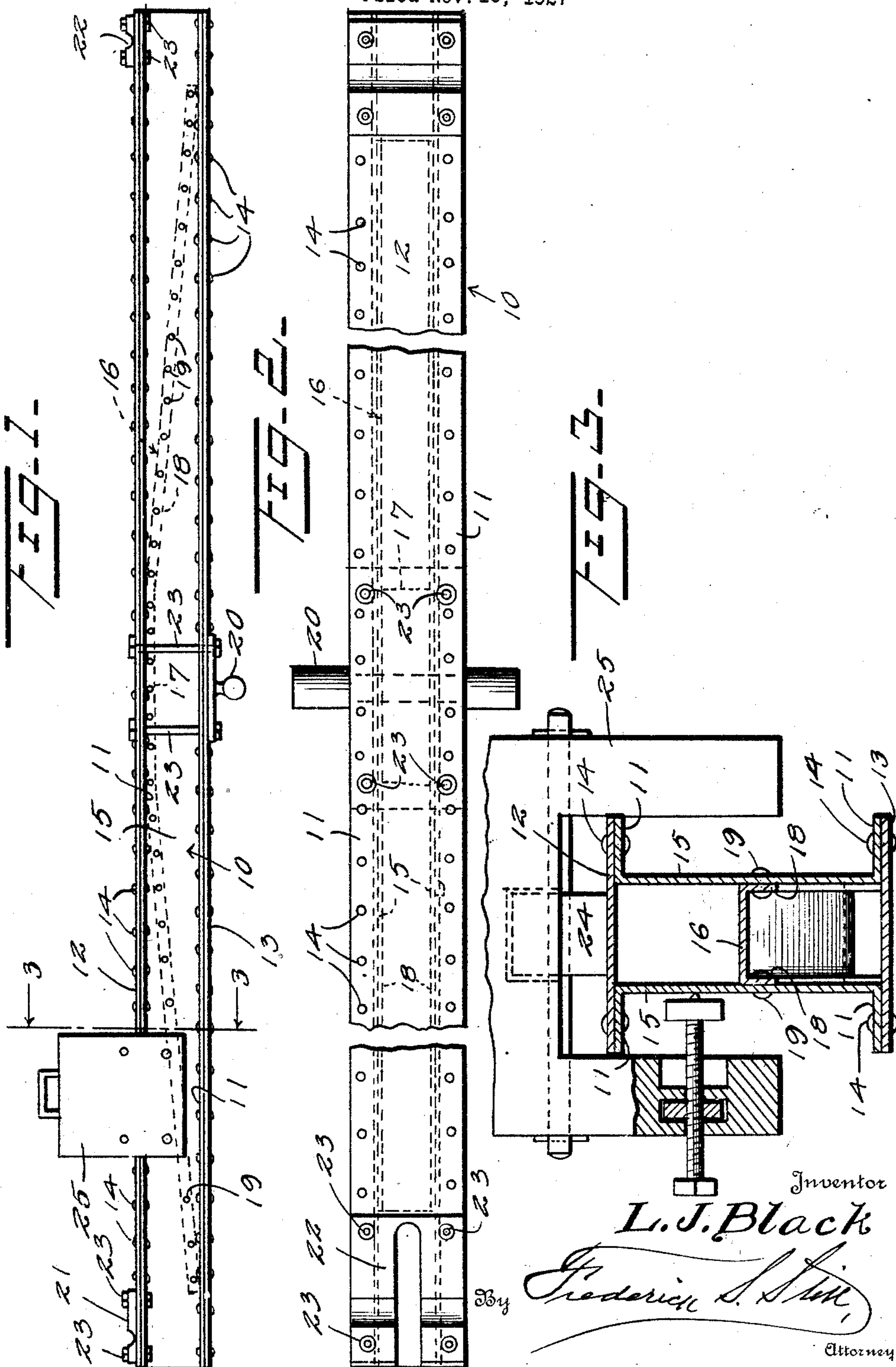
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L. J. BLACK

STEEL WALKING BEAM

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UNITED STATES PATENT OFFICE.

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STEEL WALKING BEAM.

Application filed November 10, 1927. Serial No. 232,373.

This invention relates to steel walking beams for use with oil well drilling or pumping apparatus and has for an important object thereof the provision of a steel walking beam which is trussed and in which the trusses are so arranged that there will be no interference with the use of a counterweight such, for example, as that illustrated in the patent granted to Miles F. Yount for counterweights, issued February 1, 1927, No. 1,616,100.

A further object of the invention is the provision of a trussing structure which not only reinforces the beam against downward strains, but likewise reinforces the beam against lateral strain or "whip".

A further object of the invention is the provision of a structure of this character which may be very readily and cheaply yet durably and efficiently manufactured.

These and other objects I attain by the construction shown in the accompanying drawing, wherein for the purpose of illustration is shown a preferred embodiment of my invention and wherein:—

Figure 1 is a side elevation of a walking beam for oil well drilling apparatus constructed in accordance with my invention;

Figure 2 is an enlarged plan view thereof;

Figure 3 is an enlarged section on the line 3—3 of Figure 1, a portion of the counterweight being broken away to generally illustrate the structure thereof.

Referring now more particularly to the drawing, the numeral 10 generally designates channel beams forming the sides of the completed walking beam and having the channels thereof outwardly directed. The flanges 11 of the channel beams 10 are connected by longitudinally extending top and bottom plates 12 and 13 which are riveted to the flanges 11 along their edges, as indicated at 14.

Between the bases 15 of the channels is arranged a combined brace and truss bar, generally designated at 16, which is preferably in the form of a channel bar fitting between the bases 15 and having a central portion straight, as indicated at 17. This central portion abuts the under surface of the plate 12 in the ordinary walking beam structure for a distance of about four feet and from the ends of the straight portion, the reinforcing element inclines downwardly and outwardly toward the ends of the channel beams. The flanges 18 of the brace are

securely riveted at 19 to the bases 15. The beam will have secured thereto the usual bearing engaging trunnions 20 disposed at the center thereof and stirrup bearings 21 and 22 at the ends thereof. The trunnions and bearings may be secured to the beam by bolts 23 extending through the trunnion base and the bearing plates respectively and through the edges of the plates 12 and 13 and the flanges 11 of the side channels 10.

It will be obvious that by employing a construction of this character, a beam is provided which is at once trussed against vertical strains and rigidly braced against any tendency to transverse movement or "whip". Since rivet connections are provided throughout, there will be no adjustments to loosen or separate and cause damage, as has been the case in all attempted trussed walking beams with which I am familiar. At the same time, the structure produced is of such nature that it may be very cheaply yet durably constructed.

By placing all connections between the plates 12 and flanges 11 at the edges of the plates 12, a space is provided for the operation of the rollers 24 employed as supports for a counterweight 25, such as that disclosed in the patent above referred to.

Since the construction hereinbefore set forth is capable of a certain range of change and modification without materially departing from the spirit of the invention, I do not limit myself to such specific structure except as hereinafter claimed.

I claim:—

1. A walking beam for use in well pumping apparatus and the like comprising a metallic tube having parallel side walls and a truss member lying entirely within the tube and secured to said side walls throughout its length.

2. A walking beam for use in well pumping apparatus and the like comprising a metallic tube having parallel side walls and a truss brace comprising a beam having its central portion abutting the upper wall of the tube at the center thereof and its ends downwardly and outwardly inclined, said truss brace being secured to the tube.

3. A walking beam for use in well pumping apparatus and the like comprising a metallic tube having parallel side walls and a truss brace comprising a beam having its central portion abutting the upper wall of the tube at the center thereof and its ends downwardly

and outwardly inclined, said truss brace being secured at its edges to the side walls of the tube throughout its length.

4. A metallic walking beam comprising a
5 pair of channel beams arranged in parallel relation and having the channels thereof outwardly directed, top and bottom plates abutting the flanges of said channel beams and secured thereto throughout the length thereof to thereby produce a metallic tube and a
10 truss brace arranged within said tube having the central portion abutting the upper plate and its end portions extended adjacent the bottom plate near the ends of the tube, said
15 truss brace being secured to the side walls of the tube.

5. A metallic walking beam comprising a pair of channel beams arranged in parallel relation and having the channels thereof outwardly directed, top and bottom plates abutting the flanges of said channel beams and secured thereto throughout the length thereof to thereby produce a metallic tube and a truss brace arranged within said tube having the central portion abutting the upper plate and its end portions extended adjacent the bottom plate near the ends of the tube, said truss brace being secured to the side walls of the tube along its side edges and throughout its length.

In testimony whereof I affix my signature.
LEE J. BLACK.