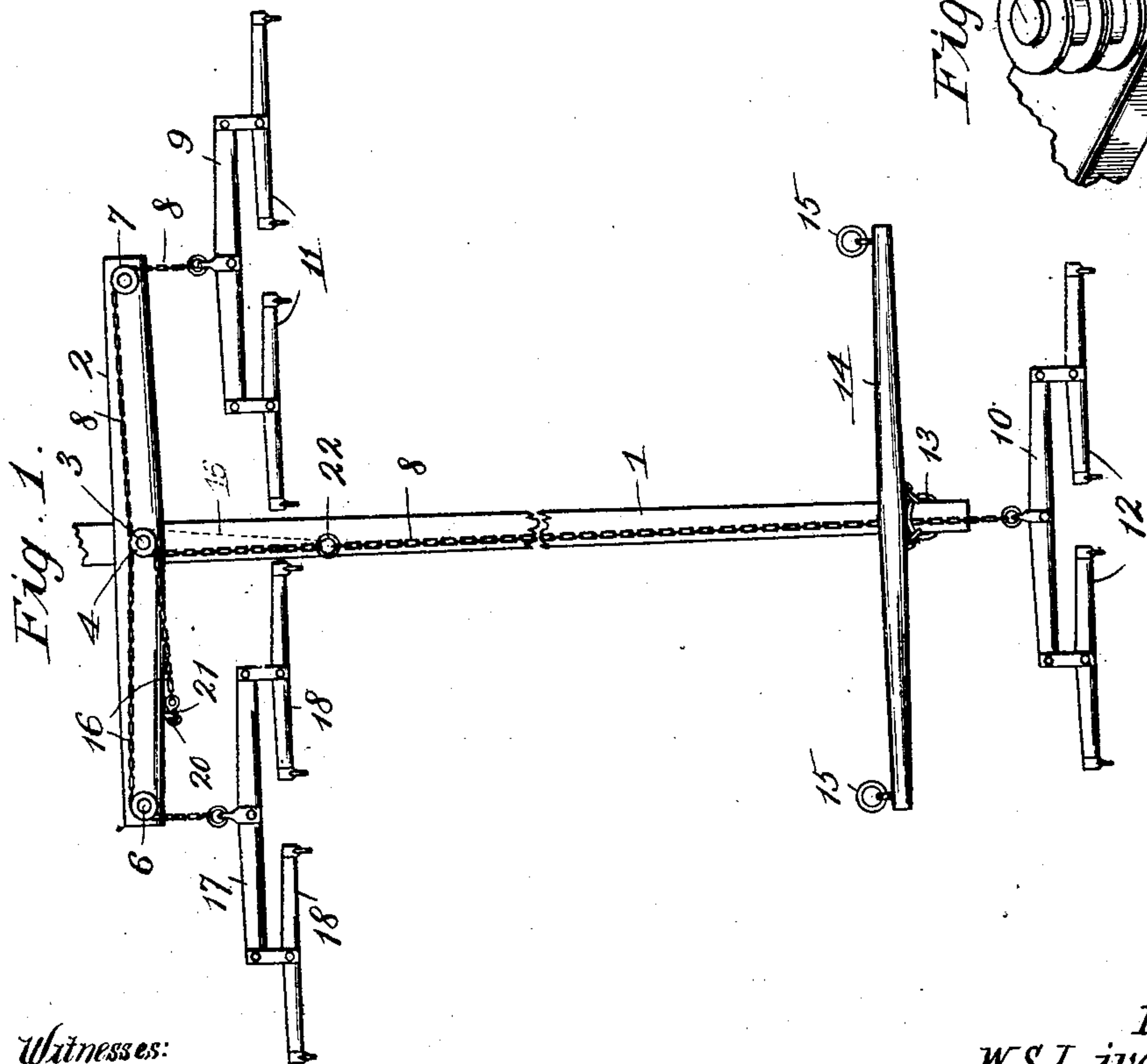
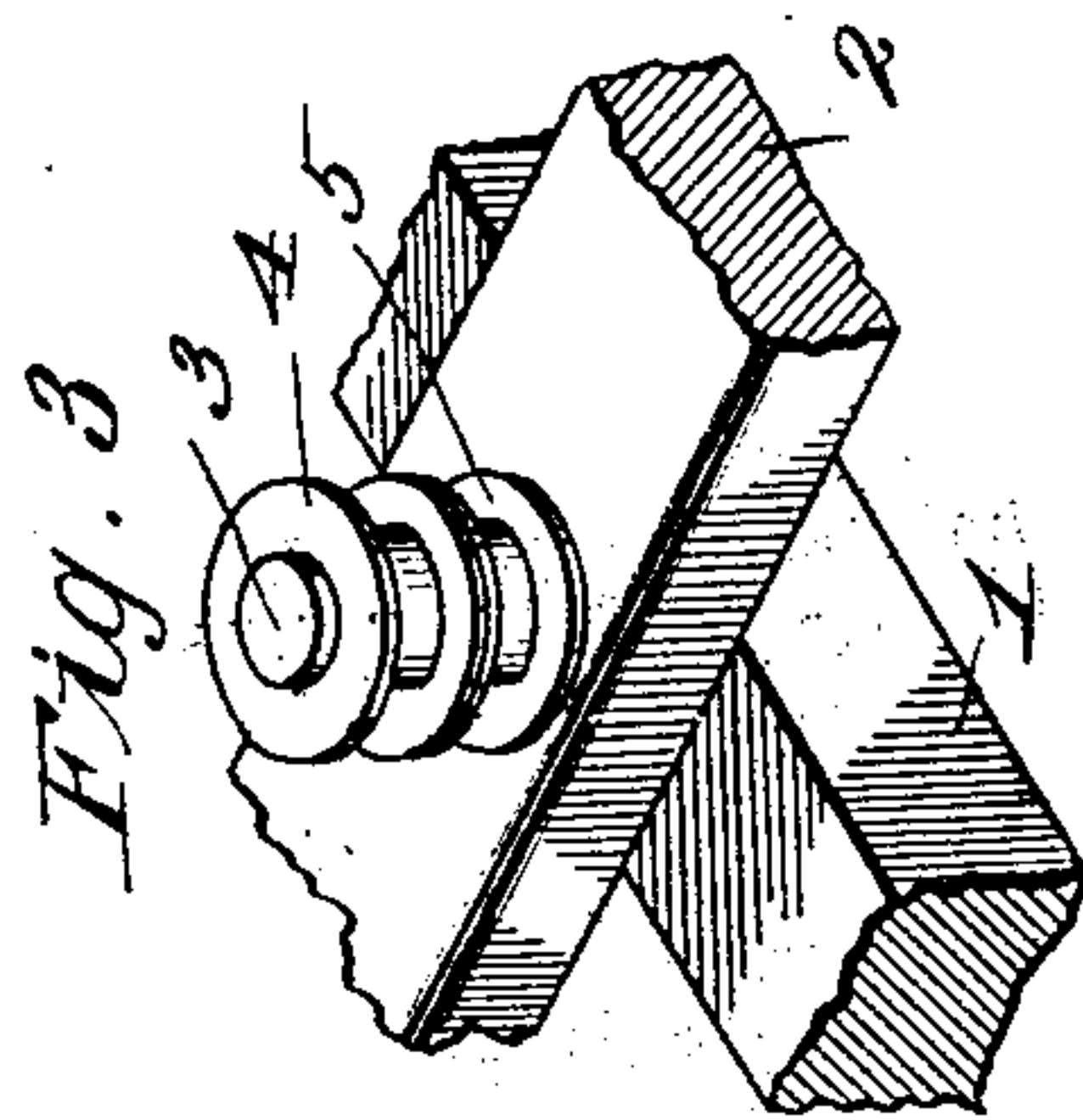
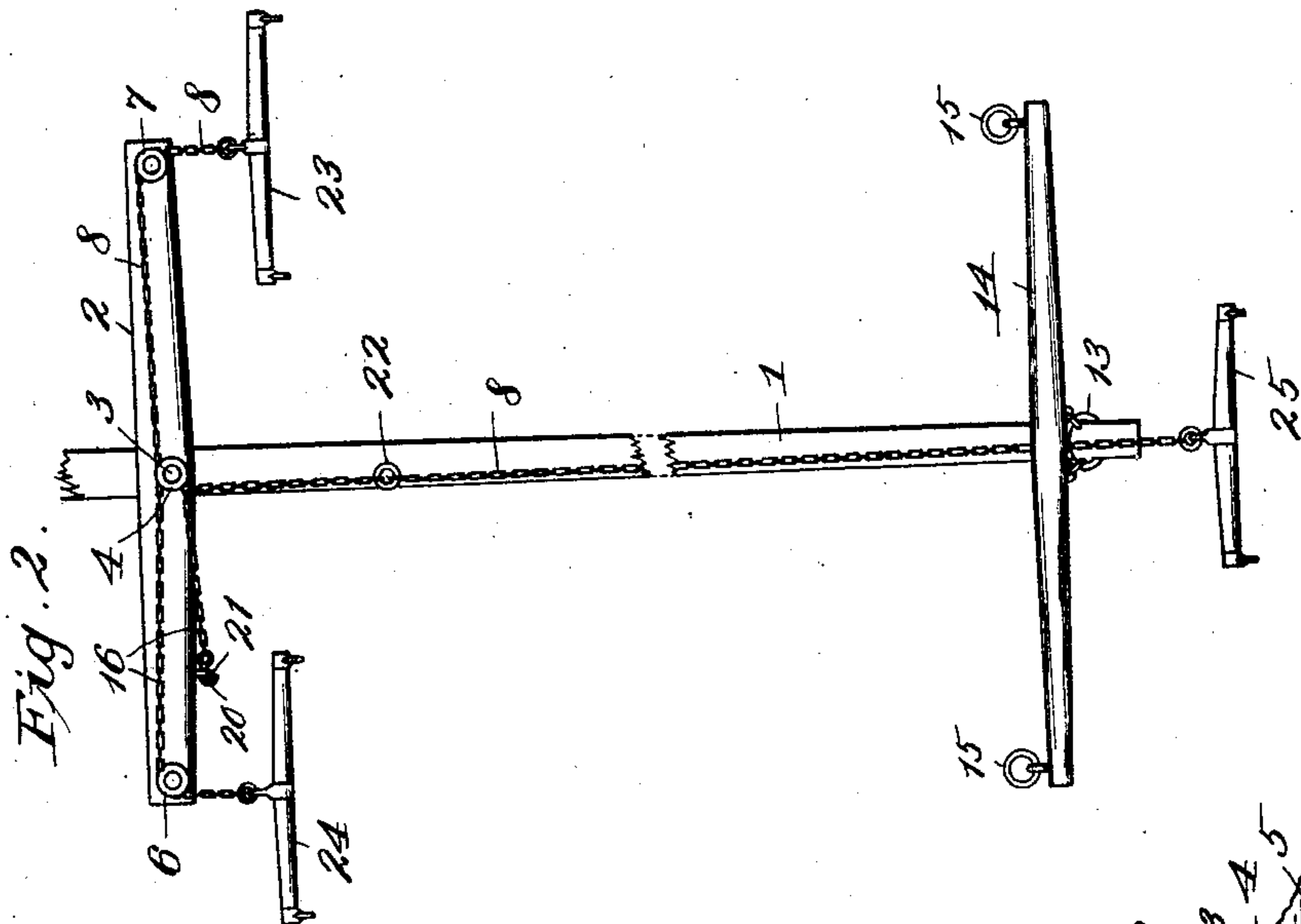


No. 859,956.

PATENTED JULY 16, 1907.

W. S. LIVENGOD.
DRAFT EQUALIZER.
APPLICATION FILED MAY 26, 1905.



Witnesses:

P. Hamilton
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Inventor:
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UNITED STATES PATENT OFFICE.

WINFIELD S. LIVENGOOD, OF KANSAS CITY, MISSOURI, ASSIGNOR TO SMITH & SONS MFG. COMPANY, OF KANSAS CITY, MISSOURI.

DRAFT-EQUALIZER.

No. 859,956.

Specification of Letters Patent.

Patented July 16, 1907.

Application filed May 26, 1905. Serial No. 262,353.

To all whom it may concern:

Be it known that I, WINFIELD S. LIVENGOOD, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Draft-Equalizers, of which the following is a specification.

My invention relates to improvements in draft-equalizers; and my object is to provide an equalizer which may be readily arranged to accommodate three, six or eight horses arranged in pairs, two pairs of which are hitched abreast of each other while one or two pairs may be hitched in advance of the first-mentioned pairs.

I am aware that there are draft-equalizers which may be arranged to accommodate either six or eight horses and when arranged for the latter number serve their purpose well in balancing each horse against the other, but become impracticable when arranged for six horses by reason of the fact that the front team must travel twice as far as either of the rear teams in order to equally distribute the load after the latter has become unbalanced by one team falling behind the other. Owing to this variation in travel it is difficult to keep each pair of horses in its relative position, hence the load will be unequally distributed on each pair most of the time. I overcome the above-mentioned difficulty by the novel construction and arrangement of equalizer hereinafter described and claimed, and in order that the same may be fully understood, reference will now be made to the accompanying drawing, in which:—

Figure 1 represents a plan view of my improved equalizer arranged for six horses. Fig. 2 is a plan view of same arranged for three horses. Fig. 3 is a broken detail perspective view of a tongue, an evener-bar and a pair of pulleys employed in carrying out my invention.

In said drawing, 1 designates a tongue. 2 designates an evener-bar pivotally secured at its central portion to the rear part of the tongue by means of a bolt 3.

4 and 5 designate two superposed pulleys journaled on bolt 3.

6 and 7 designate two pulleys journaled at opposite ends of the evener-bar.

8 designates a cable extending around pulleys 4 and 7 and attached at its rear and forward ends to double-trees 9 and 10, provided with swingle-trees 11 and 12, respectively. Cable 8 is held in alinement with the tongue by means of a neck-yoke center 13 through which it extends. Said center engages the forward end of the tongue and is attached to a neck-yoke 14 provided at its opposite ends with the customary rings 15. 16 designates another cable shorter than cable 8 and operating around pulleys 5 and 6. Said cable is provided at one end with a double-tree 17 having swingle-trees 18 pivotally attached to its opposite ends while the

other end of said cable is provided with a hook 20 which may be attached to a staple 21 on the evener-bar or to a link 22 forming part of cable 8.

When the device is arranged for three horses, as shown in Fig. 2, the double-trees 9, 10 and 17 are dispensed with, and swingle-trees 23, 24 and 25 are substituted therefor.

When the equalizer is arranged for six horses it is obvious that the front team will have no leverage over either of the rear teams by reason of the fact that they pull from the center of the evener-bar instead of from one side thereof in which event they of course would assist the team attached next to said side to overbalance the team attached to the side farthest therefrom and thus throw the greater portion of the load upon the last-mentioned team. The load is equally distributed on the two rear teams through the evener-bar 2 in the usual manner as the cable 8 does not in any way affect the operation of the latter by reason of its pulling around the centrally disposed pulley 4, while the load on the front team is balanced by the team hitched to the swingle-trees 11. The above also applies to the equalizer when it is arranged for three horses.

The equalizer may be readily arranged for eight horses, when desired, by securing hook 20 to ring 22 and substituting a whiffle-tree carrying two double-trees provided with swingle-trees for the double-tree 10 so that four horses may be hitched to the forward end of cable 8. When thus arranged the cable 8 passes around one side of the pulley 4, while the cable 16 leads from the ring 22 around the opposite side of the pulley 5; and hence the four horse-power draft on cable 8 divides at ring 22 and leads outward so as to exert two horse-power draft on each of the rearmost double-trees—a result which would not follow if the ring 22 were not as far from the superimposed pulleys 4 and 5 as the greatest fluctuations of the teams require.

Having thus described my invention, what I claim and desire to secure by Letters-Patent, is:—

1. A draft-equalizer consisting of a centrally pivoted evener-bar having a staple on one of its arms, pulleys mounted at the opposite ends thereof, superimposed pulleys mounted at the center portion thereof, a long cable embracing one of the superimposed pulleys and a pulley at one end of the evener-bar, a ring in this cable forward of said superimposed pulleys, draft attachments secured to the ends of said cable, a short cable embracing the other superimposed pulley and the pulley at the opposite end of the evener-bar, a draft attachment secured to the outer end of the short cable, and a hook secured to its inner end and adapted to engage said ring or said staple, for the purpose set forth.

2. A draft-equalizer consisting of an evener-bar centrally pivoted on the tongue, superimposed pulleys mounted on said pivot, other pulleys on the arms of said bar, and draft attachments forward of the tongue and of each end of said bar; combined with a long cable leading from

the front draft attachment along the tongue and forked into sections which pass oppositely around the superimposed pulleys respectively and thence outward on said bar around its pulleys to the rear draft attachments, the fork
5 standing a distance forward of said superimposed pulleys which is equal to the greatest fluctuations of the teams, as and for the purpose set forth.

3. A draft-equalizer consisting of a centrally pivoted evener-bar, pulleys mounted at the opposite ends thereof,
10 superposed pulleys mounted at the central portion of said evener-bar, a long cable embracing one of the superposed pulleys and a pulley at one end of the evener-bar, draft

attachments secured to the ends of said cable, a short cable embracing the other superposed pulley and the pulley at the opposite end of the evener-bar, said cable being at- 15 tached at its inner end to the long cable, and a draft attachment secured to the outer end of said short cable.

In testimony whereof I affix my signature, in the presence of two witnesses.

WINFIELD S. LIVENGOOD.

Witnesses:

F. G. FISCHER,
J. MOORE.