

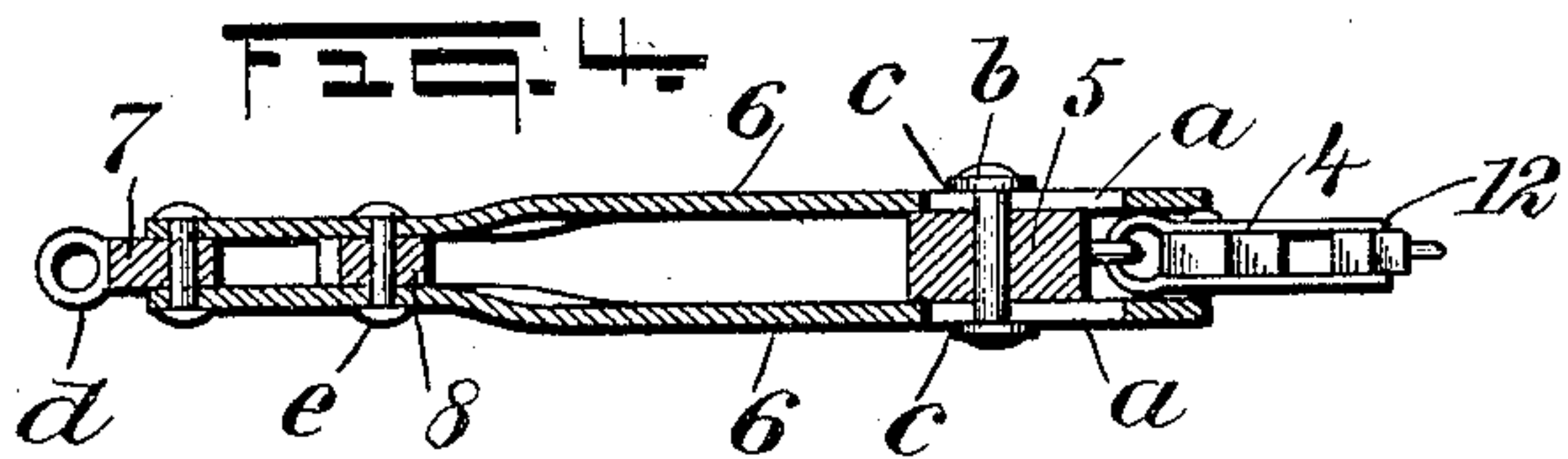
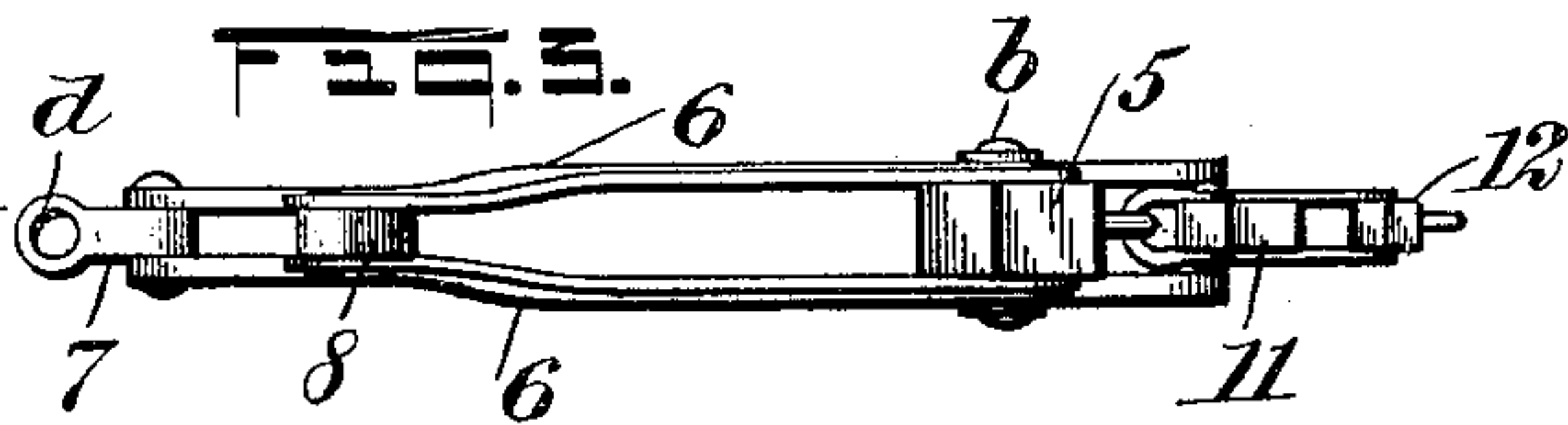
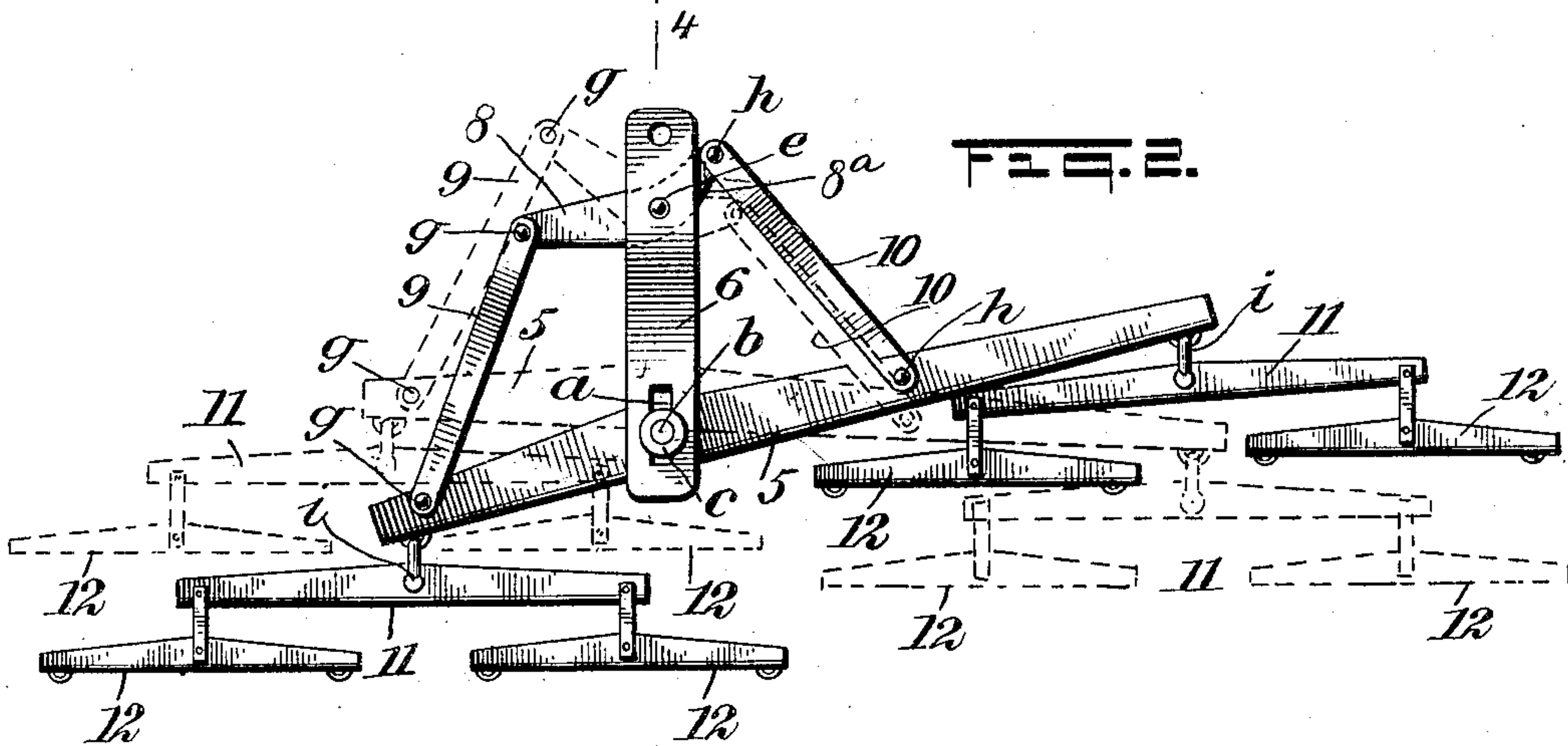
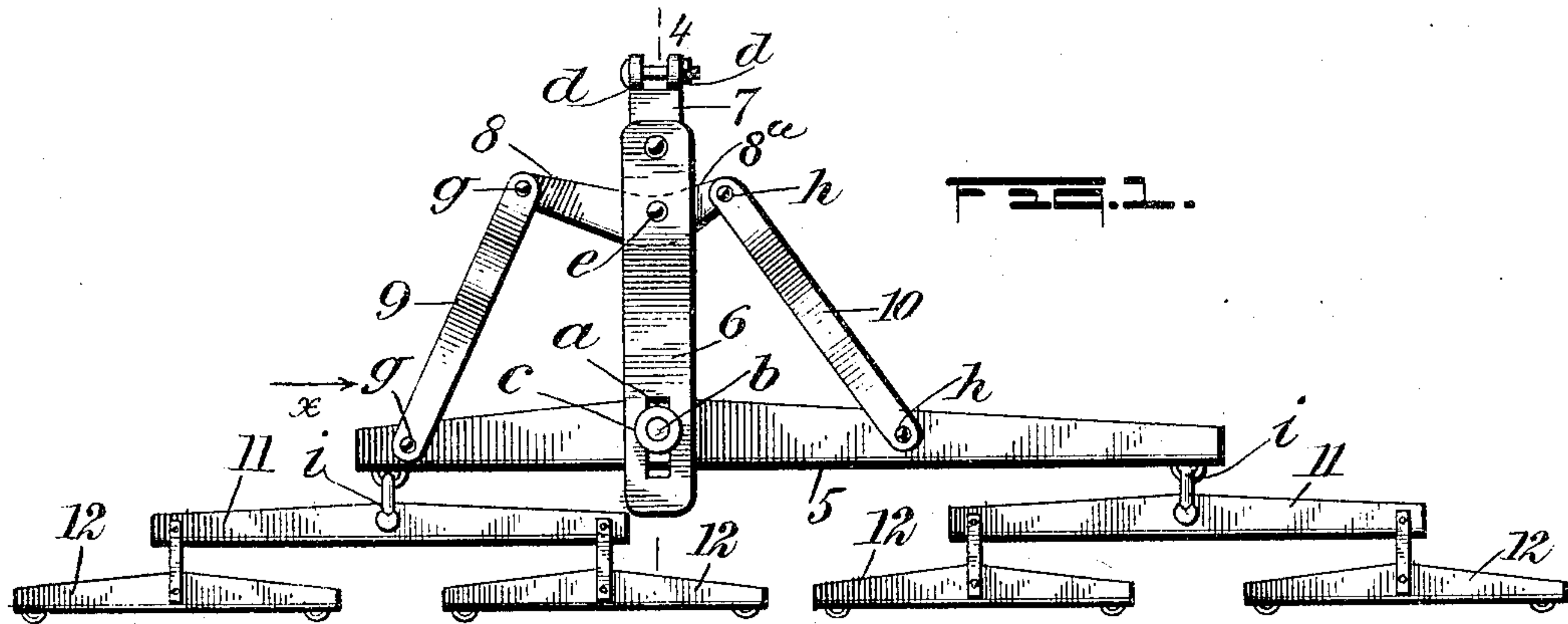
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DRAFT EQUALIZER.

APPLICATION FILED OCT. 18, 1904.



WITNESSES:

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DRAFT-EQUALIZER.

SPECIFICATION forming part of Letters Patent No. 783,225, dated February 21, 1905.

Application filed October 18, 1904. Serial No. 228,963.

To all whom it may concern:

Be it known that we, WILLIAM L. G. SCHNEIDER and FRANKLIN J. EMAL, citizens of the United States, and residents of Pickrell, in the county of Gage and State of Nebraska, have invented a new and Improved Draft-Equalizer, of which the following is a full, clear, and exact description.

The object of this invention is to provide novel details of construction for a draft-equalizer which adapt the device for very effectively equalizing draft force produced by four draft-animals when attached to a gang-plow or other subsoil-plow, so that both pairs of draft-animals will pull alike and the plow be under control for effective work.

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 figures.

Figure 1 is a plan view of the improved draft-equalizer with the parts in normal positions when draft strain is equal at each side of the point of attachment to a plow. Fig. 2 is a view mainly similar to that shown in Fig. 1, showing the parts in two positions by dotted lines and by full lines, respectively, and indicating an unequal application of draft force at each side of the point of application thereof to pull a plow or the like. Fig. 3 is a side view seen in the direction of the arrow *a* in Fig. 1, and Fig. 4 is a transverse sectional view substantially on the line 4-4 of Fig. 1.

Preferably the means for attaching the beam 5 to a plow or the like consists of two similar straps 6, that are elongated metal plates, each having a longitudinal slot *a* formed therein near one end thereof, these slotted end portions of the straps being loosely secured upon opposite sides of the draft-beam 5 and near one end of the beam by a pivot-bolt *b*, which passes through a perforation in the

draft-beam and also through the opposite slots *a*.

The bolt *b* is secured in place by any suitable means, preferably as is represented in Fig. 4, consisting in the employment of a washer *c* at each projecting end of the pivot-bolt and riveting the ends of the bolt over upon the washers in a manner which will permit the beam 5 to slide between the straps 6 a distance controlled by the length of the slots *a*. The straps 6 are bent an equal degree, so as to dispose their portions that are rearward of the slots *a* parallel with each other and spaced apart an increased degree. Between the rear portions of the straps 6 a joint-plate 7 is inserted and secured, said plate having two spaced ears *d* at its rear end to permit the draft-equalizer to be hingedly connected with a projection of suitable form (not shown) on a plow-beam or other device that is to be drawn by animals connected therewith by means of the improved draft-equalizer. In the space between the strap 6 near their rear ends a bent lever is introduced and pivoted, as shown, the pivot *e* passing through the lever near one of its ends, thus providing a long arm 8 and a short arm 8^a, which arms extend from opposite side edges of the straps.

While the proportions may be changed somewhat, if preferred, it is found that the point for pivotal connection of the straps 6 with the draft-beam 5 may be effectively positioned as shown, the left-hand end portion of the beam representing about one-third the length of the beam and the remaining portion that extends at the right from the straps 6 about two-thirds of its entire length, thus increasing the leverage of the beam at the right-hand end of the same one-third.

The ends of the arcuate lever 8 8^a are respectively connected with the beam 5 by means of two pairs of link-bars 9 10, each pair embracing with their respective ends the ends of the arcuate lever and the body of the draft-beam and are thereon pivoted by bolts *g g h h*. The pivot-bolts *g g* that connect the pair of

link-bars 9 with the long arm 8 of the arcuate lever and the left-hand end portion of the draft-beam 5 engage therewith at points near the ends of the arm and beam, normally inclining outward and toward the end of the beam, as appears in Fig. 1. The pivot-bolts *h h* connect the short arm 8^a of the arcuate lever with the portion of the draft-beam 5 that is rightward of the straps 6, and the bolt which passes through said portion of the beam is the same distance from the pivot-bolt *b* as is the pivot-bolt *g* that connects the ends of the links 9 with the left-hand end of the draft-beam, thus disposing the link-bars 10 inclined outward from the end of the arm 8^a toward the right-hand end of said draft-beam.

As shown in Fig. 1, the concaved edge of the arcuate lever 8 8^a is disposed toward the joint-plate 7, and the lengths of the arms 8 8^a, as well as of the link-plates 9 10, are so proportioned that the draft-beam 5 will be held at right angles with the line of draft through the center of the straps 6 when the parts are in normal condition, as is shown in Fig. 1. Upon the right and left hand ends of the draft-beam 5, at the forward edge of the same, two doubletrees 11 are respectively shackled, as appears at *i i* in the drawings, said shackles, as usual, engaging the doubletrees at their centers. Two pairs of swingletrees 12 are secured in the ordinary manner upon the ends of the doubletrees 11 for connection of four draft-animals with the ends of the beam 5.

Assuming that the hinge-point plate 7 is connected with a clevis on the end of a plow-beam (not shown) for the draft of a plow by animals that have been harnessed to the swingletrees 12, it will be evident that while the four animals pull equally the beam 5 will be held at right angles with the line of draft strain, or, in other words, there will be no side draft on the plow, so that it will cut a regular furrow of proper depth. In case one pair of draft-animals pulls harder than the other pair this disposes the draft-beam 5 at an angle to the line of draft, as shown by full and dotted lines in Fig. 2, the arcuate lever 8 8^a and slots *a* in the straps 6 permitting a limited rocking movement to be given to the draft-beam and lever. It will be seen that this will so adjust the parts of the device as to cause the pair of animals doing the most work to crowd laterally and against the near horse of the other team, at the same time getting in advance of the delinquent team, which latter must pull its share to keep in place and work easily.

When the plow is turned laterally at the end of a straight furrow, the short arm 8^a of the arcuate lever will have its end and the connected ends of the pair of link-bars pivoted thereto forced into contact with the adjacent

edges of the straps 6, which will enable the team connected with the other end of the arcuate lever to pull the plow around, while the other team toward which the plow is turned remains temporarily inactive, resuming work when a straight furrow is again commenced.

The construction of the improved draft-equalizer is very simple, strong, and durable. Furthermore, from the arrangement of details it will be apparent that the device may be turned over, so as to reverse its ends, and thus adapt the draft-equalizer for service with a right-hand or a left-hand plow.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. A draft-equalizer comprising a draft-beam, duplicate straps held near like ends thereof so as to rock and slide on the beam between its ends, a lever pivoted between the straps near their opposite ends and near one end of said lever, links pivotally connecting the ends of the lever with the beam at each side of the straps, and means for connecting the straps with an object to be drawn.

2. A draft-equalizer comprising a draft-beam, duplicate straps held near like ends thereof so as to rock and slide on the beam near one end thereof, a lever pivoted between the straps near their opposite ends and near one end of said lever, two pairs of link-plates pivoted by the ends thereof upon the ends of the lever and upon the beam at each side of the straps, so as to incline toward the respective ends of the beam, and means for connecting the remaining ends of the straps upon an object to be drawn.

3. A draft-equalizer comprising a draft-beam, two straps having longitudinal slots near like ends thereof, a pivot-bolt connecting the beam with the slotted ends of the strap through said slots and near one end of the beam, an arcuate lever pivoted between the remaining end portions of the straps near one end of the lever, two pairs of link-plates each pair lapped at their ends upon and pivoted to the lever and beam and at nearly an equal distance from the side edges of the straps on the beam, means for connecting the ends of the straps adjacent to the lever with an object to be drawn, and means for connecting the draft force to the beam at its forward edge.

4. A draft-equalizer comprising a draft-beam, two straps having opposite longitudinal slots near like ends thereof, a pivot-bolt passing through said slots and through the beam near one end thereof, an arcuate lever pivoted between the remaining end portions of the straps near one end of said lever, the concave edge of the lever projecting away from the beam, two pairs of link-plates, each pair lapped at their ends upon and pivoted to the lever

and beam at a nearly equal distance from the side edges of the straps, normally disposing the beam at right angles to the line of draft through the center of the straps, a joint-plate
5 at the rear ends of the straps, adapted for coupling with an object to be drawn, two doubletrees respectively shackled upon the beam near its ends, and singletrees connected with the ends of the doubletrees.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

WILLIAM L. G. SCHNEIDER.
FRANKLIN J. EMAL.

Witnesses:

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CHAS. P. HORN.