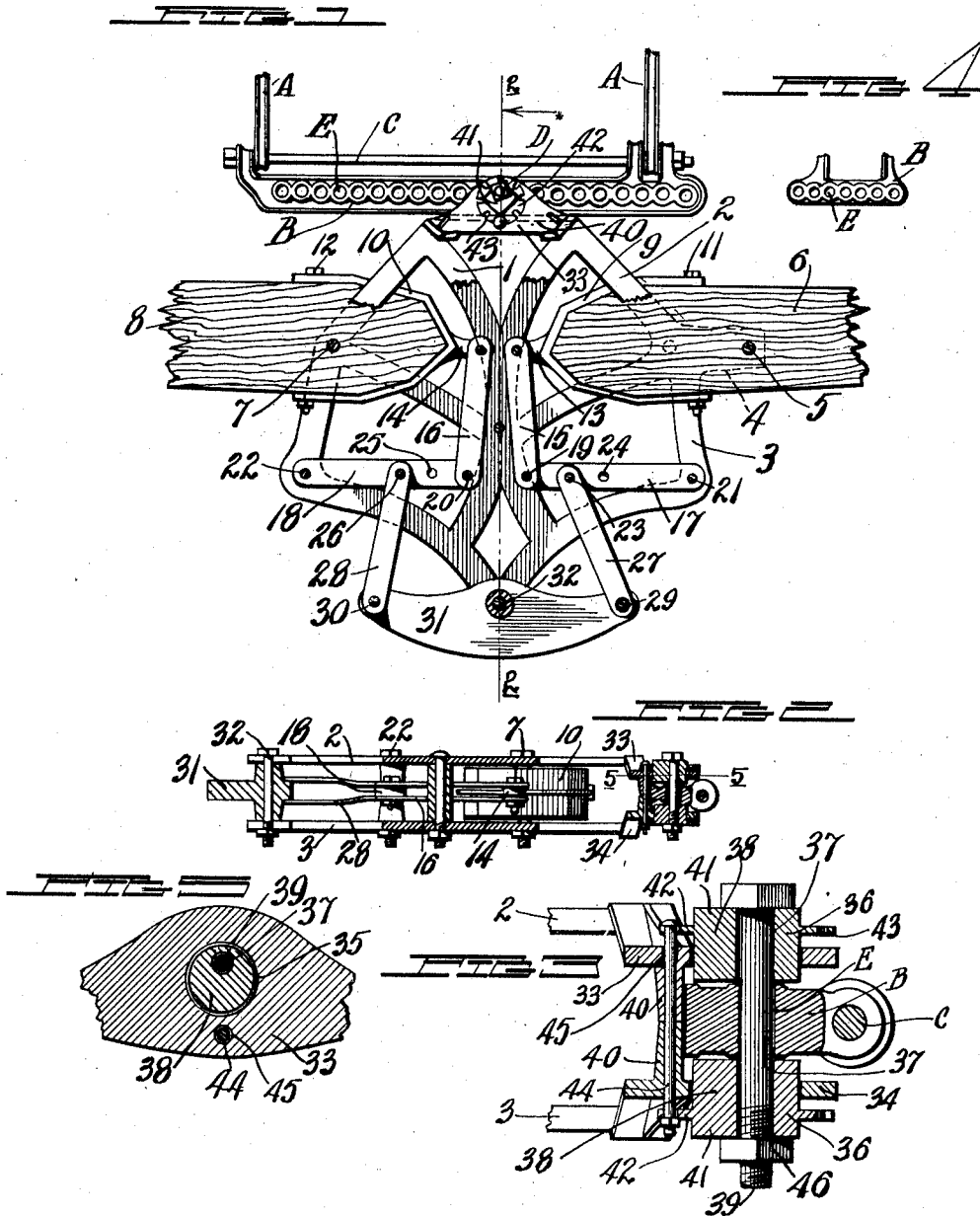


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EQUALIZER.

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1,038,326.

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Witnesses

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EQUALIZER.

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To all whom it may concern:

Be it known that I, JOHN H. EMERT, a citizen of the United States, residing at Peoria, in the county of Peoria and State of Illinois, have invented certain new and useful Improvements in Equalizers, of which the following is a specification.

This invention has reference to certain new and useful improvements in equalizers, particularly to equalizers for use in connection with sulky and gang plows.

One of the objects of the present invention is to provide an equalizer with a system of levers that permits the draft beams to oscillate a sufficiently great amount with the movement of the horses.

A further object of the invention is to provide an equalizer that can be quickly and conveniently changed from a four-horse to a three-horse equalizer and vice versa, and also one that is capable of adjustment to throw an advantage of leverage to either one of the draft beams, should the horse or horses pulling on one of the beams be stronger than the ones pulling on the other beam.

This invention has for a still further object a single hitch method of attaching the equalizing device to the ordinary clevis commonly used on the plow or other implement, no special clevis being necessary, and a bolt being passed through the clevis at a single point only to hold the equalizing device in rigid attachment with said clevis. Said method of attachment also makes it possible to attach the equalizer to any size or shape of clevis without changing any part of the device.

For a more complete and thorough understanding of the details of the invention reference is had to the accompanying drawings in which,—

Figure 1 is a top plan view of my improved equalizer attached to the clevis of a gang plow, part of the upper plate of the equalizer frame being broken away to show the lever construction, the same being arranged as a four-horse equalizer; Fig. 2 is a sectional view of the equalizer as the same would appear if taken on the line 2—2 of

Fig. 1, with the entire top frame plate in position; Fig. 3 is an enlarged vertical section showing in detail the means for attaching the equalizer to the clevis; Fig. 4 is a plan view of a sulky plow clevis, and Fig. 5 is an enlarged horizontal section as the same would appear on the line 5—5 of Fig. 2.

Like characters of reference indicate corresponding parts throughout the figures.

In the drawings A A are the beams of a plow, in this case a four-horse gang plow, and B is a clevis attached to the same by the bolt C. Immovably fixed to said clevis at D by means and in a manner to be described is the frame 1 comprising the upper and lower plate portions 2 and 3 respectively, see Fig. 2. These plates 2 and 3 are identical in outline and are skeleton in structure to lessen the weight and to permit the levers to be adjusted and oiled when desired. The frame parts 2 and 3 have on one side the corresponding extensions 4, which extensions have inserted therethrough the bolt 5 upon which is pivoted the longer draft beam 6. Passing through the opposite edge of the frame parts 2 and 3 is a bolt 7 upon which is pivoted the beam 8 in a manner somewhat similar to beam 6, except that bolt 7 is placed directly in the edge of frame parts 2 and 3, and not on an extension such as the extension 4 carrying pivot bolt 5. To the inner end of each of the beams 6 and 8 are fitted the irregular somewhat U-shaped brackets 9 and 10 being secured by bolts 11 and 12. Said brackets 9 and 10 have the inwardly projecting ears 13 and 14. Connecting links 15 and 16 have one of their ends pivoted to said ears 13 and 14, said links 15 and 16 being in two parts, one part being pivoted below and one above said ears, see Fig. 2. The link 15 serves to connect the beam 6 to a lever 17, said lever consisting of a single part and being pivoted at one of its ends between the two parts of link 15 as at 19 and at the other end between the frame parts 2 and 3 at 21 in the edge of said frame. Lever 18 has its ends pivoted in a manner similar to the ends of lever 16, having piv-

oted connections at 20 with link 16 and at 22 with frame parts 2 and 3. Intermediate the pivots in the ends of lever 17 and in proximity to the pivotal point 19 are two pivotal holes 23 and 24, the hole 23 being nearest the point 19 on the inner end of lever 17. Similarly the lever 18 has the two pivotal holes 25 and 26, the hole 25 being nearest the point 20 on the inner end of said lever 18. The two part connecting links 27 and 28 form the connections between the levers 17 and 18 respectively and opposite ends of a double-tree lever or beam 31, said beam 31 being pivoted at its midpoint on bolt 32 passing through the two parts of the frame 1 at its forward edge.

When the device is used as a four-horse equalizer the link 27 which has its forward end pivoted to one end of beam 31 by bolt 29 has its rear end pivoted on a bolt passing through hole 23 in lever 17. Similarly link 28 which has its forward end pivoted to the other end of beam 31 by bolt 30, is pivoted at its rear end to lever 18 by a bolt passing through the hole 26 therein. Thus an oscillating connection is formed between the two beams 6 and 8 so that any forward movement of the beam 6 is transmitted through link 15 to lever 17, causing the same to oscillate rearwardly on the pivot 21. This movement of the lever 17 causes the double-tree beam 31 to oscillate on its pivot 32 due to the connection formed between the point 29 of the said beam and the point 23 of lever 17 by connecting link 27, the end 29 being drawn toward the rear. Thus the end 30 of said beam 31 is moved forward, which motion is transmitted through the link 28 to lever 18 and thence through link 16 to draft beam 8 which is caused to oscillate on its pivot at 7, and the outer end thereof is moved toward the rear, thereby counteracting the forward movement of the outer end of the beam 6. The insertion of levers 17 and 18 in the mechanism gives a greater amplitude of oscillation to the beams 6 and 8 while at the same time the amount of oscillation necessary in beam 31 is much less than though it were directly connected to beams 6 and 8. Also by the provision of pivot holes in said levers 17 and 18 such as holes 23, 24, 25 and 26, the device can be quickly and conveniently changed from a four-horse equalizer to a three-horse equalizer by connecting the rear end of link 27 to the hole 24 instead of the hole 23 of lever 17, while in either connection of link 27 the changing of the connection of link 28 from the hole 26 to the hole 25 of lever 18 gives the advantage of leverage to the horses attached to beam 6, which is desired when the horses attached to beam 8 are much the strongest.

As a means of forming a single hitch connection for the frame 1 with clevis B, the bracket plates 33 and 34 are provided on the rear edge of frame parts 2 and 3, each of said bracket plates having therein the circular openings 35. Two eccentric locking members or nuts 36 are provided, each having the cylindrical body portion 38 arranged to operate in the circular openings 35 of said bracket plates, one nut fitting into plate 33 from above and one into plate 34 from below. Each of said nuts 36 has running therethrough parallel to the axis of the cylindrical body portion 38 but eccentric thereto the circular hole 37 through which is adapted to pass the bolt 39. Said bolt 39 also passes through one of the holes E in clevis B, which lies between bracket plates 33 and 34 and also between the cylindrical portions 38 of nuts 36, as seen in Figs. 2 and 3. The forward edge of clevis B bears against the inwardly projecting flanges 40 of the two bracket plates 33 and 34. By means of the nut heads 41 on the eccentric nuts 36, said nuts may be turned in the openings 35, thus causing the bolt 39, due to its eccentric arrangement in said nut 36, to lock the clevis B firmly against the flanges 40, and thereby hold the equalizer frame immovably secured to said clevis. Also each of the nuts 36 has an annular flange 42 extending therefrom and located between the nut head 41 and the cylindrical portion 38, said flange having in its periphery a plurality of notches or slots 43. After the nuts 36 have been turned to lock the clevis B against the flange backings 40, a locking bolt 44 is passed through the notch 43 in the flange of the upper eccentric nut 36 which is most nearly in alinement with a pair of holes 45 one in each of the bracket plates 33 and 34. Then by a small amount of adjusting of the nut 36 said notch 43 may be brought into alinement with said holes 45, and the bolt 44 passed through said holes 45 also, when by a similar adjustment of the lower nut 36 said bolt 44 may be also passed through a notch 43 in the flange of said lower nut. Thus the bolt 44 securely locks the eccentric nuts 36 against rotation in the openings 35 and thereby keeps the clevis B firmly held against the backing flanges 40. By tightening nut 46 on bolt 39 the two cylindrical body portions 38 of nuts 36 can be caused to grip against clevis B, forming further means for securing the clevis B immovably attached to the equalizer frame 1.

Fig. 4 shows the clevis of a sulky plow which at a glance is seen to be very different from the gang plow clevis, being particularly much narrower in that portion lying between the hole E and the forward edge F. It is seen that the eccentric ar-

rangement of bolt 39 in the nuts 36 provides for this contingency for the said bolt 39 can be made to grip between itself and the backing flanges 40 any thickness of material that might be found in the clevis to which it is desired to attach the equalizing device.

What I claim is:—

1. In combination, a clevis, a draft attachment, and means connecting said clevis and said draft attachment, said means comprising a frame, locking members mounted therein, clamping means having eccentric relation with said locking members and adapted to pass through said clevis and to draw and hold said clevis against said frame.

2. In combination, a clevis, a draft attachment, and means connecting said clevis and said draft attachment, said means comprising a frame having inward projecting flanges, locking members mounted in said frame and positioned on opposite sides of the clevis, a bolt passing eccentrically through said locking members and adapted to pass through said clevis, whereby when said locking members are rotated the clevis will be drawn to and from said frame.

3. In combination, a clevis, a draft attachment, and means connecting said clevis and said draft attachment, said means comprising a frame having inward projecting flanges, locking members mounted in said frame and positioned on opposite sides of the clevis, a bolt passing eccentrically through said locking members and adapted to pass through said clevis, whereby when said locking members are rotated the clevis will be drawn to and from said frame and the means for immovably fixing said locking members in an adjusted position.

4. In combination, a clevis, a draft attachment, and means connecting said clevis and said draft attachment, said means comprising a frame composed of two plates having inward projecting flanges, said plates having an opening formed therein, locking members mounted in said openings and each having an eccentric bore, a bolt passing through said bores and said clevis, whereby when said locking members are rotated the clevis will be moved to and from said frame.

5. In combination, a clevis, a draft attachment, and means connecting said clevis and said draft attachment, said means comprising a frame composed of two plates having inward projecting flanges, and said plates having an opening formed therein, locking members mounted in said openings and each having an eccentric bore, a bolt passing through said bores and said clevis, whereby when said locking members are rotated the clevis will be moved to and from said frame, and means for immovably fixing

said locking members in an adjusted position, said means comprising a bolt attached to each of said locking members and passing through said inward projecting flanges.

6. In combination, a clevis, a draft attachment, and means connecting said clevis and said draft attachment, said means comprising a frame composed of spaced plates attached to said draft attachment, each of said plates having inward projecting flanges in alinement with each other, each of said plates also having a circular opening there- through, locking members being bored eccentrically and each having an annular flange thereon, the edges of said flange being notched, a bolt passing through said eccentric bores and said clevis whereby when the locking members are rotated the clevis may be drawn up tightly against said inward projecting flanges, and a bolt passing through alined notches in said annular flanges and through said frame to hold the locking members in adjusted position.

7. In a device of the character described, in combination, a pair of spaced plates having circular openings therein and having inwardly projecting flanges adapted to contact with each other, locking members having circular body portions positioned in said circular openings, each locking member being bored eccentrically and having an annular flange, said annular flanges having notched edges, a bolt passing through the eccentric bores in said locking members and adapted to attach them to a clevis, and another bolt passing through alined notches in said annular flanges and also passing through said inwardly projecting flanges.

8. In a device of the character described, in combination, a plurality of locking members adapted to be positioned on opposite sides of a clevis, a bolt passing eccentrically through said locking members and adapted to pass through a clevis, each of said locking members having notched flanges and a bolt passing through alined notches in said locking members.

9. In a device of the character described, in combination, a frame, a plurality of locking members mounted in said frame and adapted to be positioned on opposite sides of a clevis, securing means passing eccentrically through said locking members and adapted to pass through a clevis, whereby when said locking members are rotated the clevis will be drawn toward said frame.

10. In a device of the character described, in combination, a frame, a plurality of locking members mounted in said frame and adapted to be positioned on opposite sides of a clevis, securing means passing eccentrically through said locking members and adapted to pass through a clevis, whereby

when said locking members are rotated the clevis will be drawn toward said frame and means for holding said locking members in adjusted position.

- 5 11. A single hitch for equalizers, comprising a frame, rotatable locking members in axial alinement, each member having notched flanges, a bolt adapted to be passed through notches in the flanges of the mem-

bers of said frame, and a bolt having an 10 eccentric relation with said members.

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

JOHN H. EMERT.

Witnesses:

CHAS. N. LA PORTE,
ROBERT PLOWE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
