G. B. McCLELLAN.

EVENER OR DRAFT EQUALIZER.

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1,169,047.

Patented Jan. 18, 1916.

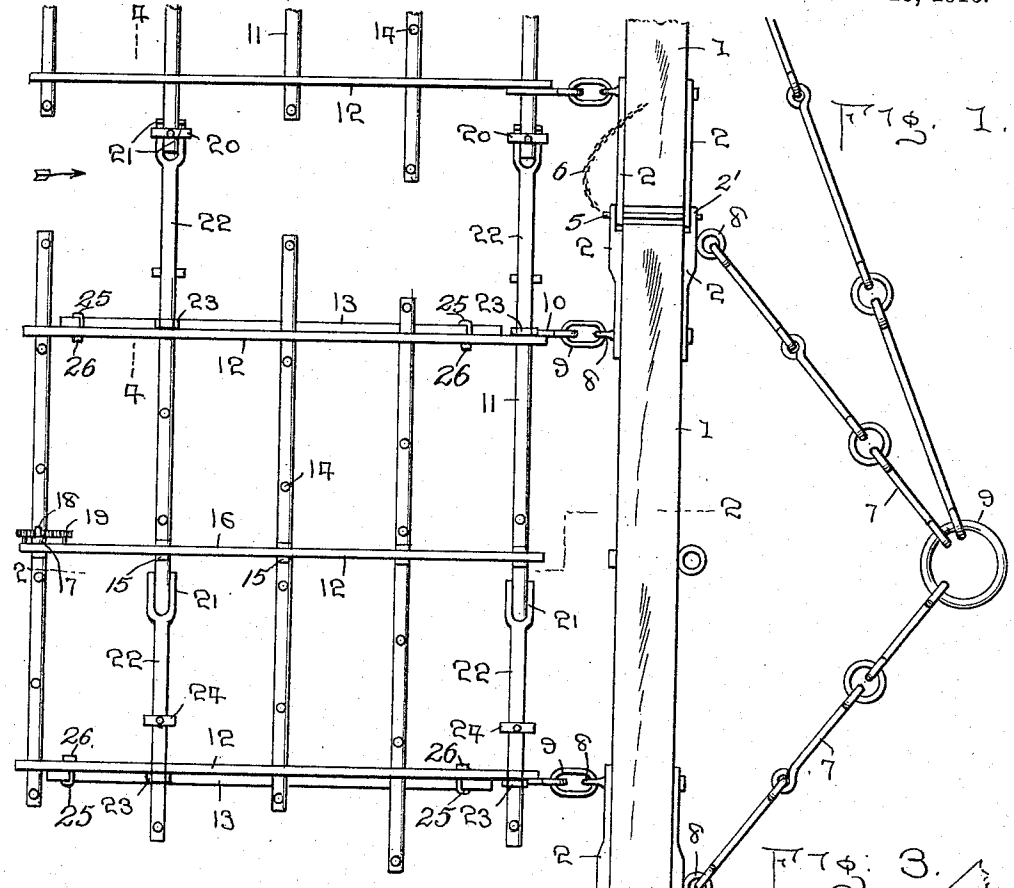


Fig. 1.

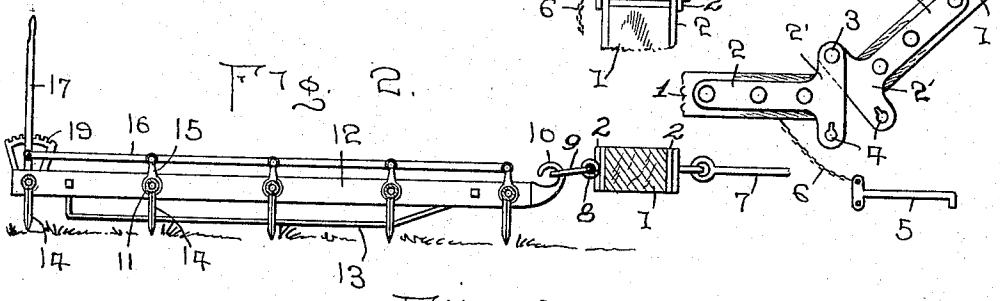


Fig. 2.

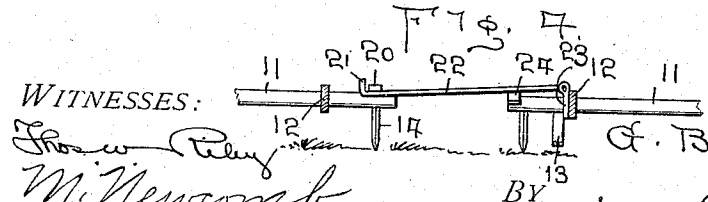


Fig. 4.

Fig. 3.

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GEORGE B. McCLELLAN, OF AVOCA, IOWA.

EVENER OR DRAFT-EQUALIZER.

1,169,047. Specification of Letters Patent. Patented Jan. 18, 1916.

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To all whom it may concern:

Be it known that I, GEORGE B. McCLELLAN, a citizen of the United States, residing at Avoca, in the county of Pottawattamie and State of Iowa, have invented certain new and useful Improvements in Eveners or Draft-Equalizers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to eveners or draft equalizers for agricultural implements and more particularly for harrows.

An object of the invention is to provide a harrow and evener which may be formed of several sections hinged to one another, the outer sections of the harrow and evener being adapted to be folded over the central or main section for transportation or the like.

Another object of my invention in eveners is to generally improve the construction and operation thereof so that the cost of the same will be the minimum and the efficiency greatly increased, the draft being perfectly apportioned between the horses hitched thereto.

Other objects and advantages will be hereinafter set forth and pointed out in the specification and claim.

Referring to the drawings which form a part of this application Figure 1 represents a fragmentary view showing the main section of my harrow and a portion of one of the auxiliary or outer sections hinged to the main section by the hitch links for the main section and said outer section, and also showing my draft equalizer in its operative position. Fig. 2 is a longitudinal section of my harrow on the line 2—2 of Fig. 1. Fig. 3 is a detail view of the hinge connection between the main section and an outer section of the draft equalizer, and, Fig. 4 is a cross sectional view on the line 4—4 of Fig. 1, looking in the direction indicated by the arrow.

Referring more particularly to the drawings in which similar reference characters designate corresponding parts throughout the several views, 1 represents the front beam for the main section, carrying the hinge plates 2 upon opposite sides at its ends, each hinge plate 2 being in the form of a T with its long portion secured to the beam while the cross end 2′ projects beyond the end of the beam and is positioned vertically with a circular opening for a pivot pin 3 in its uppermost portion and a key opening 4 in its lowermost portion. The front beams 1 for the auxiliary or end sections are provided with similar hinge plates 2 at their inner ends, the short or cross portions 2′ being adapted for engagement between the cross portions 2′ of the hinge plates 2 carried by the main front beam 1, it being understood that the pivot pins 3 are positioned through the openings in the uppermost portions of the hinge plates. The keys 5, carried upon the chains 6 secured to the beams 1 are passed through the key openings 4 in the lowermost portions of the hinge plates approximately the full length thereof to lock the beams 1 in alinement. The chains 6 prevent the loss of the keys 5 while the latter are removed from the key openings 4 to permit of folding the outer sections upon the main section, as will be later more clearly understood. The key 5 may be readily positioned through the key opening 4 and turned to lock the main and auxiliary or end beams in alinement with one another and may also be readily removed when it is desired to use only the main section or for transportation purposes, etc.

The hitch links 7 have their inner ends secured to suitable rings 8 carried by the beams 1 while their outer ends are secured in the ring 9 to which a double-tree or swingle tree may be secured for connecting the draft animals.

Each beam 1 carries in the rings 8 projecting from its rear side, the links 9 which are engaged over the hooks 10 carried upon the front tooth bar 11. The tooth bars 11, of which there may be any desirable number, are mounted for rotation through the longitudinal supporting plates 12. The longitudinal supporting plates 12 are positioned parallel to one another and carry the runners 13, which have their opposite ends secured to the plates 12 and extend below said plates. The runners 13 are preferably carried by the outer or end plates 12 of the main section and are adjustably secured thereto by means of the eye bolts 25 and the nuts 26. In their normal position, when the harrow is in operation, the runners are raised so that they do not come in contact with the ground thus preventing the said runners from carrying any of the weight of the said harrow. When it is de-

sired to transport the harrow from place to place the nuts 26 are loosened and the runners are let down until the full weight of the harrow rests on them and the nuts 26 are tightened to secure the said runners in their lowered position. When it is desired to again use the harrow they are raised to their normal position again and secured by the eyebolts 25 and nuts 26.

The tooth bars 11 have the teeth 14 secured thereto and depending for some distance below the longitudinal supporting plates 12, between the same and outwardly thereof. Projecting upwardly from each tooth bar 11 is an arm 15, the upper end of which is pivoted to the controlling bar 16 which has its rear end pivoted to the lever 17, which latter is held in position by its finger 18 being engaged with the rack 19. The lever 17 may be swung and locked in various positions for controlling the position of the teeth 14 and changing the angle thereof or for throwing the points of the same above the lower edges of the runners 13, thus placing the teeth of the main section above the surface of the ground and preventing them from engaging said surface.

The outer sections are secured to their front beams 1 in the same manner as the main section and certain of the tooth bars 11 have short cross pieces 20 positioned across their outer ends to be engaged by the right angle bifurcated ends 21 of the hinge arms 22 which have their opposite ends hinged to the upper edges of the blocks 23 secured to the outer longitudinal supporting plates 12. The arms are limited in their downward movement by the short cross pieces 24 carried thereby and adapted for engagement upon the outer ends of the tooth bars 11 therebeneath.

When it is desired to disconnect either or both of the outer sections, the right angle bifurcated ends 21 of the hinge arms 22 are disengaged from the short cross pieces 20 and swung back upon the main section, as shown in the lower portion of Fig. 1.

It will be seen that by means of the hinge arms 22, the tooth bars 11 of the main and outer sections are held in alinement with one another and securely fastened to each other during the operation of the device. When it is desired to use only the main section or to transport the device from one place to another, the keys 5 are removed and the auxiliary or outer beams 1 swung to their position above the main beam 1 while the longitudinal supporting plates 12 and tooth bars 11 of the outer sections with the parts carried thereby, are swung to their positions above the main section, it being understood that the outer sections do not lie flat upon the main section but their lower edges rest within the right angle bifurcated ends of the hinge arms 22.

It will be clearly apparent that I have provided a sectional harrow of improved construction with novel means for securing the sections in alinement with one another and locking them together. It will also be evident that should it be desirable at any time to dispense with the use of one or more of the sections, the hitch links 7 may be readily connected at proper points along the front beam or beams 1 to equalize the strain and preferably position the ring 9. It will also be seen that this implement may be transported from one place to another and may be carried over planted fields without injury to the young crop. It will further be evident that should any of the parts become worn or broken they may readily be replaced at a small cost.

What I claim is:—

The combination with a sectional harrow, of an evener, comprising a plurality of beams connected to said harrow by means of rings, links and hooks; hinge plates, rigidly secured to the ends of said beams, the top end of the vertical portion of said hinge plates being pivotally connected, and the lower ends thereof having key openings therethrough, said openings registering with each other; and a key having a cross piece at one end and the opposite end turned at a right angle, whereby the lower ends of the vertical portions of the hinge plates are held in separable relation.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEORGE B. McCLELLAN.

Witnesses:

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