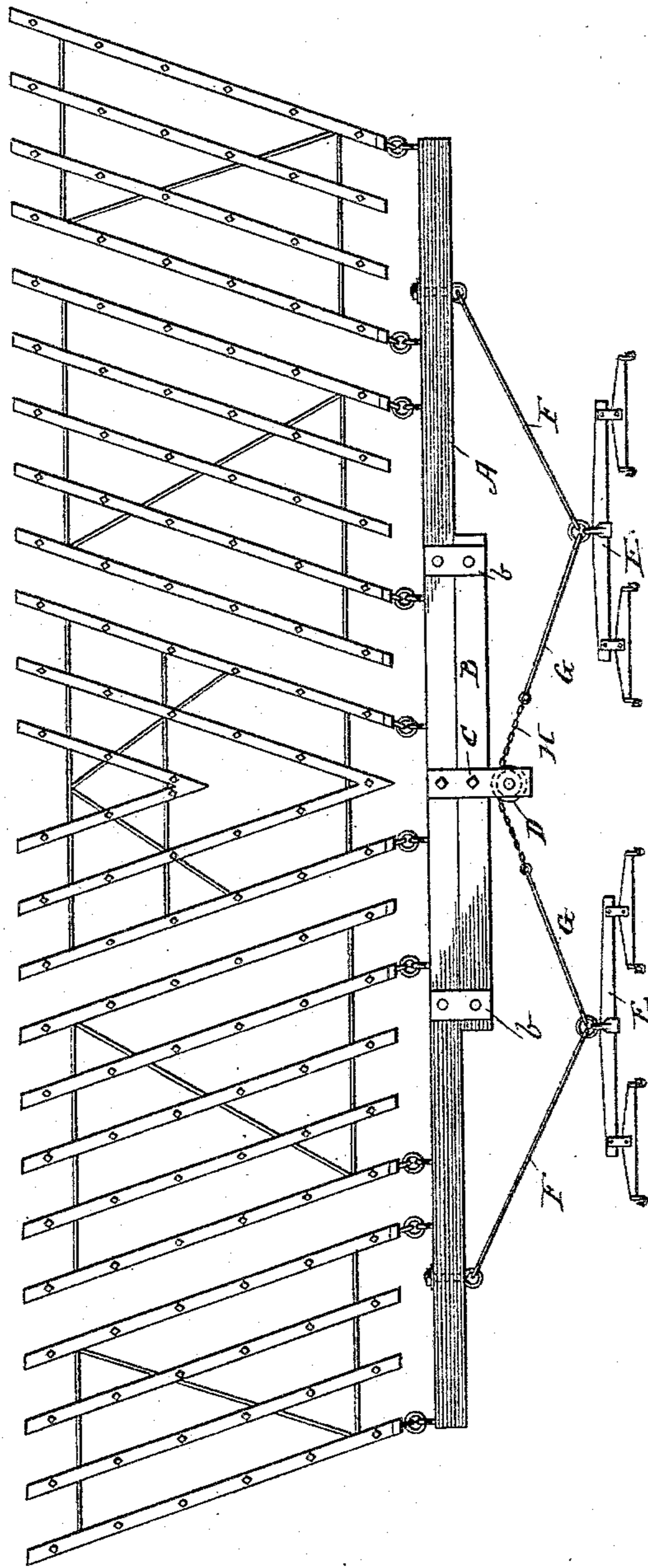


(No Model.)

W. MCGREGOR.
FOUR HORSE EVENER.

No. 414,433.

Patented Nov. 5, 1889.



Witnesses,

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WILLIAM MCGREGOR, OF APPLETON, WISCONSIN, ASSIGNOR TO THE APPLETON MANUFACTURING COMPANY, OF SAME PLACE.

FOUR-HORSE EVENER.

SPECIFICATION forming part of Letters Patent No. 414,433, dated November 5, 1889.

Application filed January 16, 1889. Serial No. 296,539. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM MCGREGOR, of Appleton, Wisconsin, have invented certain new and useful Improvements in Four-Horse Eveners, of which the following is a specification.

My invention relates particularly to eveners-bars for four-horse harrows, and my object is to provide an evener which shall be light, and yet so connected to the harrow and to the whiffletrees that it shall not spring or flex under the strain, and the attached harrow-sections are kept in line.

The accompanying drawing is a plan view of a harrow composed of five sections connected to an evener of my improved construction.

In said drawing, A represents an evener-bar, to which the harrow-sections are flexibly connected independently of each other, as at *a*.

B is a stiffening-bar secured edgewise along the front edge of bar A by means of the straps *b*.

C represents a sheave-arm, which is bolted to the upper side of the bars A B, and it has a felly-arm bolted to their under sides. These arms are located at the middle of bar A, and between their projecting ends is journaled a sheave D. The whiffletrees E have draft-rods F, connected to the evener-bar A toward its outer ends, respectively, and draft-rods G, connected at one end to the whiffletree and at the other to the chain H, which latter is passed under the sheave D. Thus it is apparent that each whiffletree draws from three points

on the bar A, and the strain is thereby so divided that springing of the bar, and the consequent throwing of the harrow-sections out of line, is avoided. The stiffener-bar B also strengthens bar A and aids in keeping it from springing. It is also obvious that the sudden movement of one team ahead of the other will not materially affect the position of the harrows, as the flexible connections of the rods F by the chain G, passed under the sheave, permit of a lateral compensating movement of the whiffletrees. A lighter evener-bar can be used than in the common forms of construction, because of the fact that the strain is divided, and also because of the additional strength imparted by the stiffener-bar.

I claim—

1. In an evener, the combination, with the main evener-bar, of a stiffener-bar secured to said evener-bar, and a sheave secured centrally of the said bars to form one of the draft-connections, substantially as described.

2. In an evener, the combination, with the evener-bar, of draft-rods whereby to connect the whiffletrees to the outer ends of the bar, and draft-rods connected to each other by a flexible section, and a sheave secured centrally of the bar, and under which said flexible section is passed.

WILLIAM MCGREGOR.

Witnesses:

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