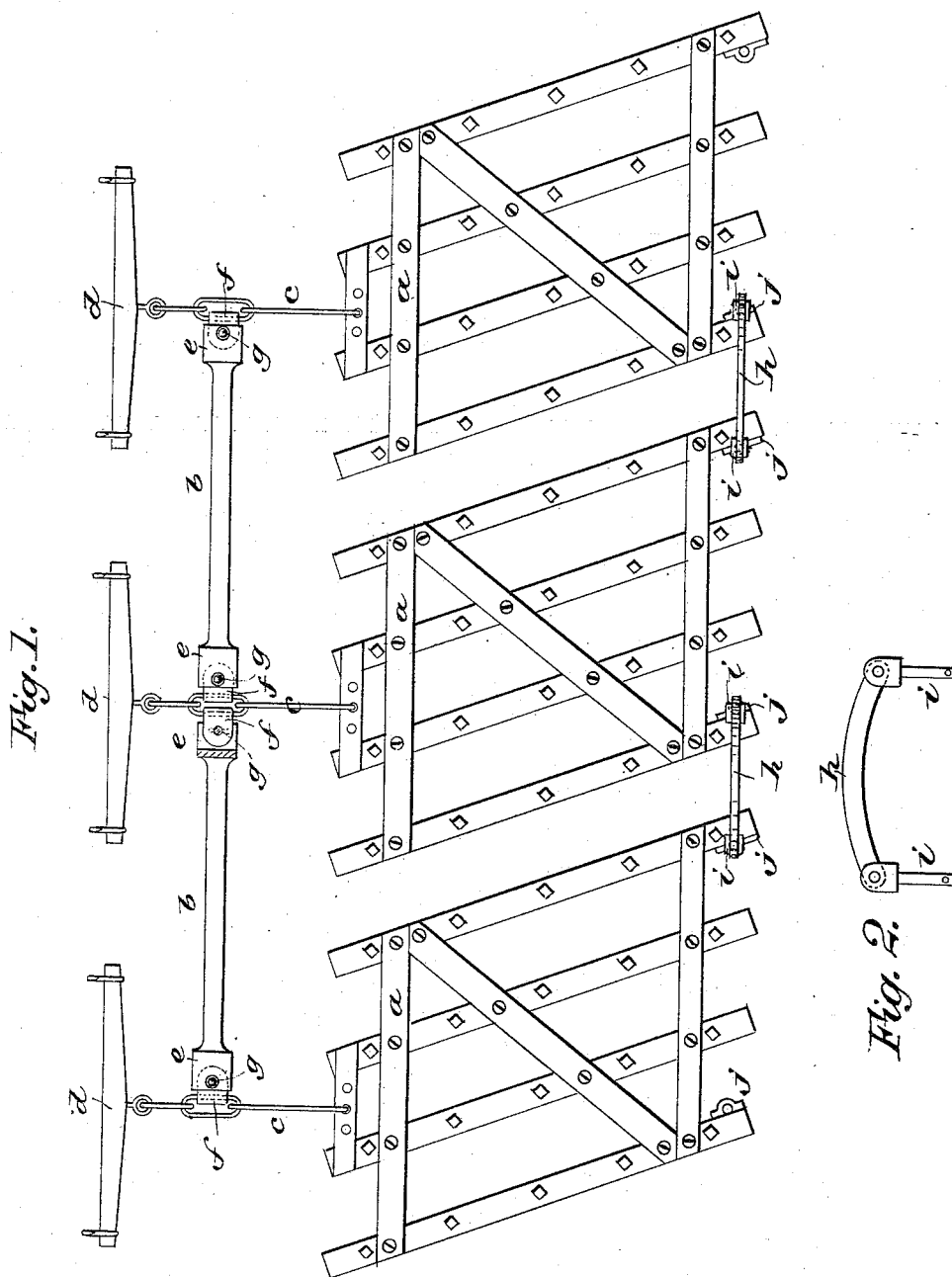


(No Model.)

N. JOHNSON.
HARROW.

No. 306,493.

Patented Oct. 14, 1884.



WITNESSES:

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UNITED STATES PATENT OFFICE.

NELS JOHNSON, OF FAIRFIELD, BUREAU COUNTY, ILLINOIS.

HARROW.

SPECIFICATION forming part of Letters Patent No. 306,493, dated October 14, 1884.

Application filed April 12, 1884. (No model.)

To all whom it may concern:

Be it known that I, NELS JOHNSON, of Fairfield township, county of Bureau, Illinois, have invented a new and Improved Harrow, of which the following is a full, clear, and exact description.

My invention consists of the construction and arrangement of parts, as will be hereinafter fully described and claimed.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in both figures.

Figure 1 is a plan view of three harrows connected by my improved devices, and Fig. 2 is a side elevation of the rear connecting device.

For the front connection of the harrows *a*, I employ a stretcher, *b*, connecting the draft-chains *c* between the harrows and the whiffletrees *d*, the said stretchers having slotted heads *e*, in which an eye-plate, *f*, attached to a link of the chain *c*, may be secured by a pin, *g*, so as to be readily connected or disconnected. These joints allow of the proper vibration of the eyes *f* on the chain-links, and of the stretchers with said eyes, to afford the universal motion required, and at the same time the stretchers *b* make the connections of the harrows and prevent interference of the whiffletrees.

For coupling the rear ends of the harrow, I employ a yoke consisting of a stretcher, *h*, with a pin, *i*, pivoted to each end suitably for dropping vertically into eye-plates *j*, bolted

to the sides of the bars of the harrows, the pins *i* to be fastened by a key through the lower end, or by any other approved means. The pins *g* will also be secured by keys or other approved means. These connecting devices are very simple, enabling the harrows to be connected or disconnected readily without the use of tools, and affording substantial means of working a number of harrows together in a gang as one harrow of permanently-jointed sections.

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

1. In a harrow, a stretcher for coupling two or more harrows, consisting of one or more bars, *b*, recessed at their outer ends, eye-plates *f*, pivoted in the recessed ends of said bars, and draft-chains *c*, connected to said eye-plates between their ends, and arranged to be attached at their free ends to the whiffletrees and harrows, substantially as set forth.

2. The combination, with a series of harrows connected at their rear ends and free at their forward ends, of the draft-chains *c*, connected to the center of the forward ends of the harrows, and having whiffletrees *d*, the stretcher *b*, recessed at its outer ends, and eye-plates *f*, embracing one link of each draft-chain, and pivoted in the recessed ends of the stretchers *b*, substantially as set forth.

NELS JOHNSON.

Witnesses:

J. W. WHITE,
CHAS. F. GIFFORD.