

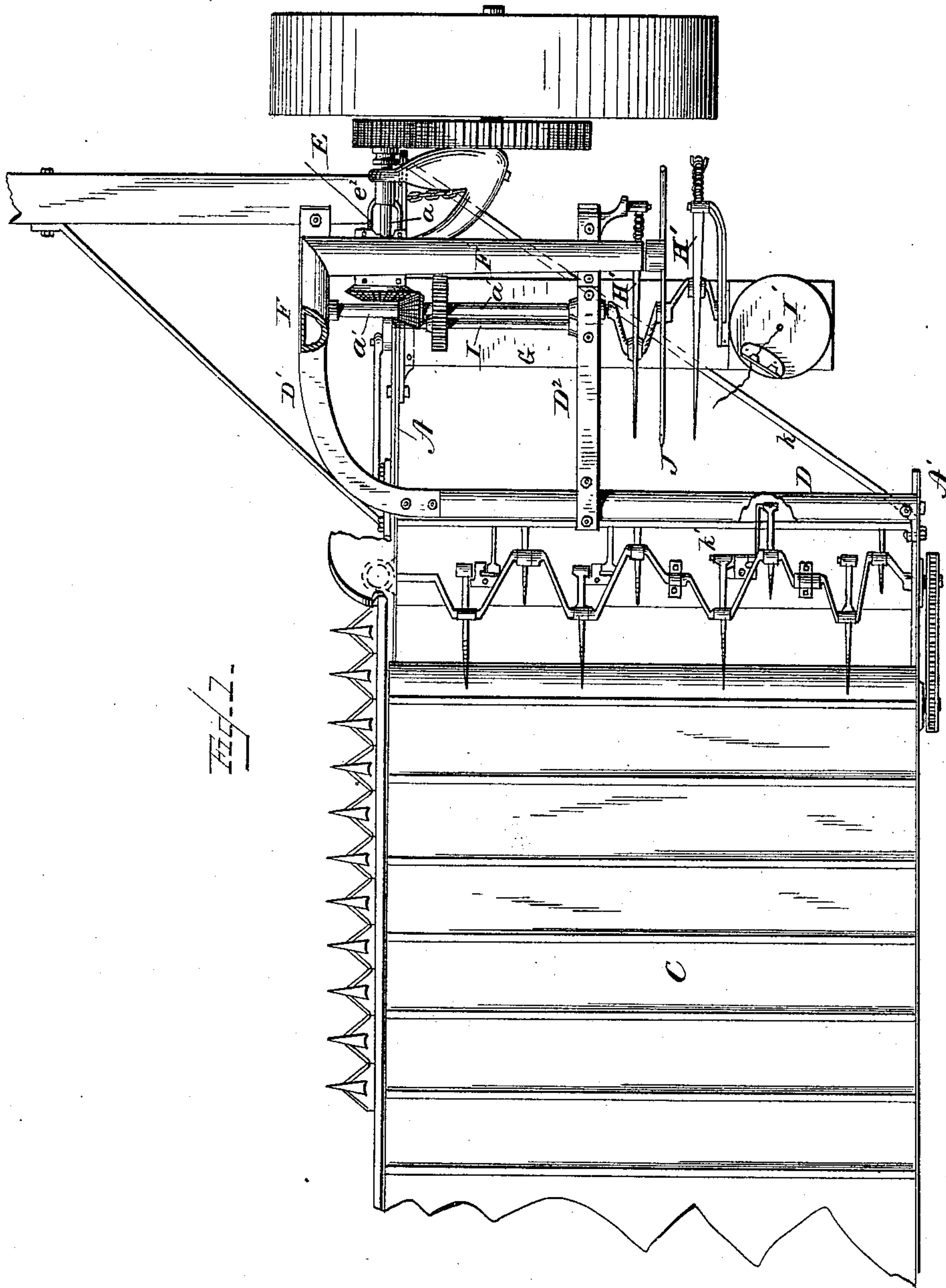
(No Model.)

2 Sheets—Sheet 1.

L. MILLER.
GRAIN BINDING HARVESTER.

No. 329,933.

Patented Nov. 10, 1885.



WITNESSES
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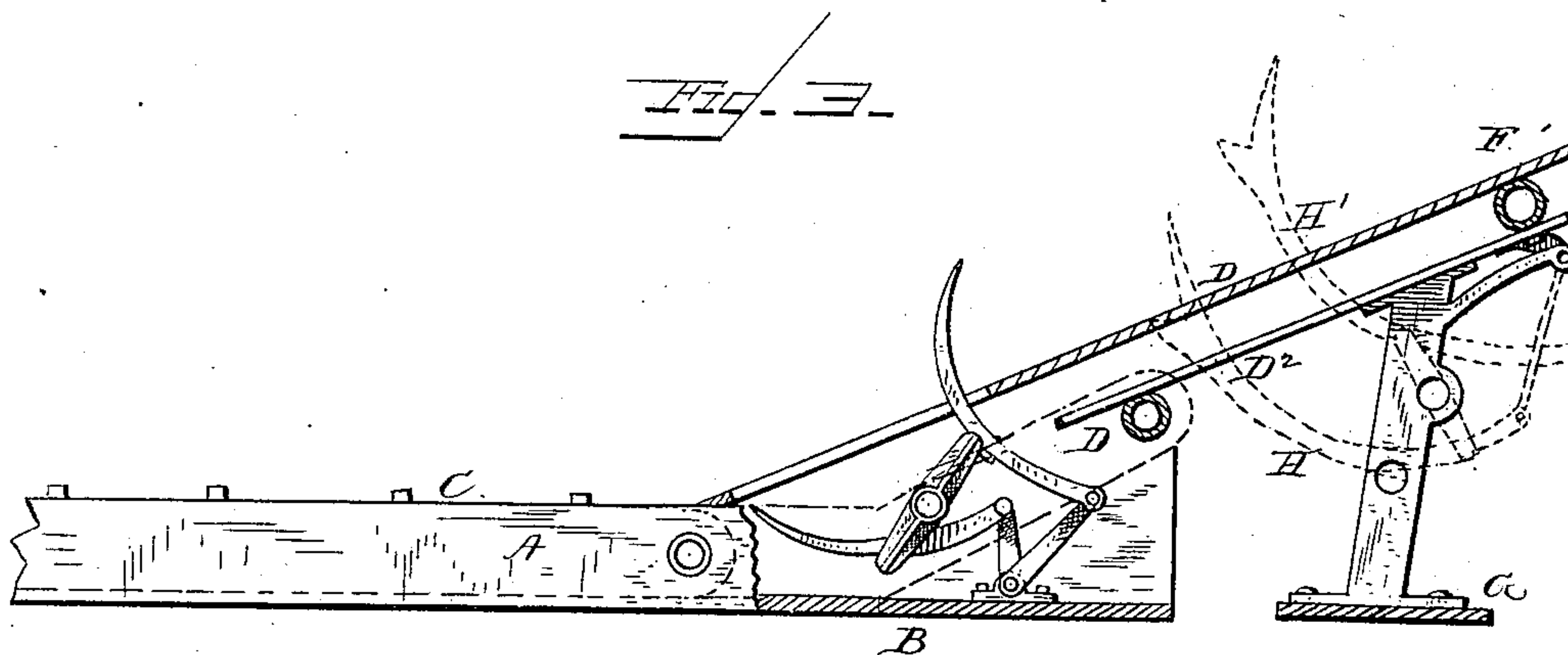
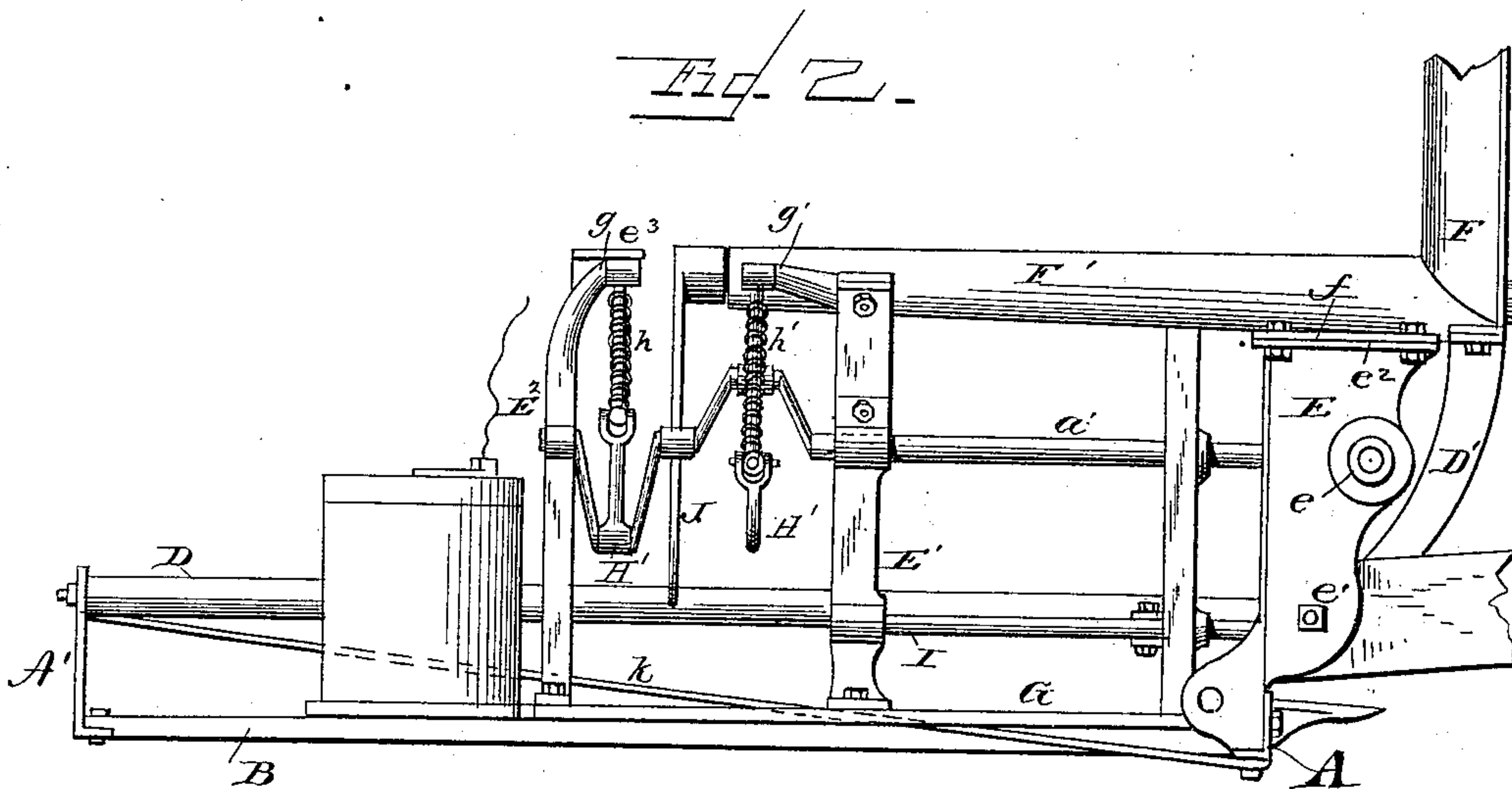
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WITNESSES

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UNITED STATES PATENT OFFICE.

LEWIS MILLER, OF AKRON, OHIO.

GRAIN-BINDING HARVESTER.

SPECIFICATION forming part of Letters Patent No. 329,933, dated November 10, 1885.

Application filed May 3, 1884. Serial No. 130,247. (No model.)

To all whom it may concern:

Be it known that I, LEWIS MILLER, of Akron, county of Summit, and State of Ohio, have invented a new and useful Improvement in Grain-Binding Harvesters, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification.

10 This invention relates to a grain-binding harvester in which the grain is bound on an inclined elevating-table on the grain side of the path of the driving-wheel, and more particularly to the construction of the binder-frame and its supports and the support for the binder-gear standard, whereby I am enabled to dispense with the upper longitudinal binder-frame bar or tubular rod, to shorten up the rear platform-sill and the upper portion of the binder-frame at the rear, thereby diminishing the weight of material and the tendency to sag at that point, to leave an open space in rear of the binding devices, facilitating access thereto for repairs or other purpose, and also facilitating the removal and replacing of the binder-gear standard and its attachments, as hereinafter explained.

15 In the accompanying drawings, Figure 1 represents a plan view of a harvesting-machine or of so much thereof as is necessary to show my improvements, with the binder-table removed to show the parts beneath it. Fig. 2 is an elevation taken from the drive-wheel side with said wheel and its axle frame or arm removed, showing the platform and binder frames and the supports for the latter and the binder-gear standard; and Fig. 3 is a rear elevation showing the binder-frame and its supports with the inclined elevating binder-table in place thereon.

20 A and A' represent the front and rear sills of the main or platform frame of the machine, the former in the present construction constituting also the bar to which the fingers of the cutting apparatus are attached; but it may be a separate bar, if preferred. These are made in the form of plates or bars on edge with the lower edges bent or curved to form horizontal ledges, which are turned inward toward each other, and form a convenient support for a flooring, B, underneath the platform-carrier

C, for protecting the latter. They may be united at their outer ends by a longitudinal bar similar in form, and, if desired, in one piece therewith, or in any usual or preferred manner. The flooring extends the whole width underneath the platform-carrier and under the pickers at the inner end thereof, and serves to protect them and also to materially stiffen the connection between the front and rear sills, which are connected and braced at their inner ends in a manner that will be hereinafter described. The inner end of the rear sill is bent upward slightly sufficiently to reach and form a support for the rear end of a longitudinal tubular rod or bar, D, forming a sill of the binder-frame near its lower edge, said sill at its forward end being supported in a short standard bracket or chair secured to the forward sill, A. The rear sill, A', terminates at the bar D, but the forward sill extends inward beyond said bar, and has secured to it a standard bracket or chair, E, provided with a transverse sleeve, e, forming a bearing for the secondary or pinion shaft a, with forwardly-projecting ribs e', forming a socket in which the rear end of the tongue is pivoted, and which materially stiffen and strengthen the bracket or chair, and a flat upper surface at e², forming a seat for the gear-standard F, which is provided with a correspondingly-flattened or horizontally-flanged foot or base at f, adapting it to rest firmly upon and to be bolted securely to the upper flattened end of the chair E. The standard F has rearwardly-projecting tubular arms carrying the usual needle and the knoter-actuating shafts, the former, F', in the present construction forming also an upper longitudinal sill or bar of the inclined binder-frame, connected with the lower sill, D, at its forward end by an inclined and curved bar, D', and in the rear of the latter by one or more inclined transverse bars, D², as may be required.

25 A plank, G, secured at its forward end to the sill A, extends rearward, and is connected by a standard, E', with the transverse bar D² and sleeve F', near the rear end of the latter, which is thus made to assist the tube D and the transverse bar D² in supporting said plank G. The standard E' is provided with a bear-

ing for the main binder-gear and packer actuating shaft a' , which is geared to and driven from the transverse shaft a , and has a bearing near its forward end in the standard or chair E, and at its rear end in a standard, E^2 , secured to the plank G in rear of the needle and packers, as shown. The standards E' and E^2 are provided at their upper ends on their adjacent sides with pivotal spurs or pins g and g' , to which the upper ends of the swinging packer-links h and h' , upholding the heel ends of the packers H and H' , are pivoted, and the upper end of standard E^2 has an enlarged flattened and inclined surface at e^3 , forming a suitable support for the inclined binder-table at that point. If preferred, the upper end of the standard E may be connected with the binder-frame sill D by an inclined transverse bar similar to D^2 , which will serve to steady and support said upper end, and in the latter construction the table would rest on said inclined bars. The plank G serves also to support bearings for the crank-shaft I, which is geared to and actuated from the main binder-gear shaft a' , as shown; and said bearings may be formed either in the inclined standard E' , near its lower end, as shown, and in the standard or chair E, or in separate standard-brackets on the plank G, as preferred. The plank G extends sufficiently in rear of the standard E^2 to accommodate a twine-box, I' , secured thereto in any suitable manner, and from which the cord passes through suitable guiding and tension devices to the needle, (indicated at J.) k and k' are braces or truss-rods, the former attached at its forward end to the extreme heel or stubble end of the sill A at its lower edge, and extending thence obliquely inward and upward to the inner end of the angular extension of the rear sill, A' , and the other, k' , from a point of attachment low down on the sill A directly in front of or in the same vertical longitudinal plane with the point of attachment of the rear end of the brace k , backward and upward to said point of attachment of brace k , where it also is secured. These two braces, converging rearwardly and upwardly, as described, form a strong light support for the inner end of the shortened rear sill, firmly upholding said end, and, in connection with the gear-standard sleeve, arranged as described, enables me to dispense with the usual upper longitudinal tubular binder-frame bar and with the heel-extension of the rear sill and the supporting-standard bracket or chair heretofore employed for its support.

In this construction described I prefer to form the seat on the gear-standard for the attachment of the latter to the chair or standard E in rear of the upright portion of the gear-standard, and on the lower sleeve, F' , thereof, for adapting the upright portion F to be set well forward of the line of cut, and of the path of the grain in being moved past said standard, and of the hinge or pivotal con-

nection of the tongue with the platform frame or chair E. The same result may, however, be attained by curving the chair E or otherwise projecting its upper end forward sufficiently for that purpose. The usual slotted table is secured above the bars D D' D^2 and sleeve F' in practice, and with the usual extension of the rear sill and the chair thereon for supporting the binder-table at its rear upper side removed, it will be readily understood that not only is the weight of the machine at that point greatly reduced, but access to the binding devices from the rear is greatly facilitated.

The manner of attaching the gear-standard to the chair E also greatly facilitates its removal with its binding devices, whether for repairs or for packing, for transportation, or other cause.

The arrangement of pickers or gatherers relative to the packers and of other parts is similar to what is described in other applications filed herewith, and said parts need not, therefore, be herein described.

Having now described my invention, I claim as new—

1. In a grain-binding harvester in which the grain is bound between the grain platform or carrier and the path of the driving-wheel, a binder-frame standard bracket or chair forming the support of the stubble end of the binder-frame, and having a seat formed on it for the binder-gear standard, adapted to be applied thereto, substantially as described.

2. The binder-frame chair on the forward platform-sill or finger-bar, in combination with the binder-gear standard secured thereto through its lower tubular arm, substantially as described.

3. The binder-frame standard-bracket provided with a tongue socket, a bearing sleeve for the secondary or pinion shaft, and a seat for the binder-gear standard, substantially as described.

4. The combination, with the platform front and rear sills, the latter terminating at its inner end in a support for the lower longitudinal binder-frame bar of said lower binder-frame sill, the lower sleeve of the binder-gear standard forming the upper longitudinal sill of the binder-frame, the chair supporting the binder-gear standard, and transverse bars connecting said lower sill and lower gear-standard, substantially as described.

5. The combination, with the front and rear sills of the platform-frame, the latter terminating in a support for the lower longitudinal binder-frame sill, as described, of the braces k and k' , converging rearwardly and upwardly for bracing and supporting the inner end of the shortened rear sill, substantially as described.

6. The combination, with the shortened rear platform-sill, of the lower longitudinal binder-frame sill and the brace extending obliquely rearward and upward from the stubble end of

the forward platform-sill to the stubble end of said shortened rear sill, substantially as described.

5 7. The platform-frame front and rear sills formed of angle-iron plates, with the horizontal portions at their lower sides or edges set facing each other, and forming ledges for the support of the platform-frame flooring, substantially as described.

10 8. The combination, in a grain-binding harvester, of the front and rear platform-sills, the rear sill being shortened, as described, the

binder-gear-standard sleeve, and the plank connected to said lower sill and binder-gear-standard sleeve, and forming a support for 15 the cord-box underneath the binder-frame, substantially as described.

In testimony whereof I have hereunto set my hand this 12th day of April, A. D. 1884

LEWIS MILLER.

Witnesses:

O. L. SADLER,

CHAS. W. CRANKSHAW.