(No Model.) 2 Sheets—Sheet 1.

C. COLAHAN.

GRAIN BINDER.

No. 358,920. Patented Mar. 8, 1887.

Fig. 1.

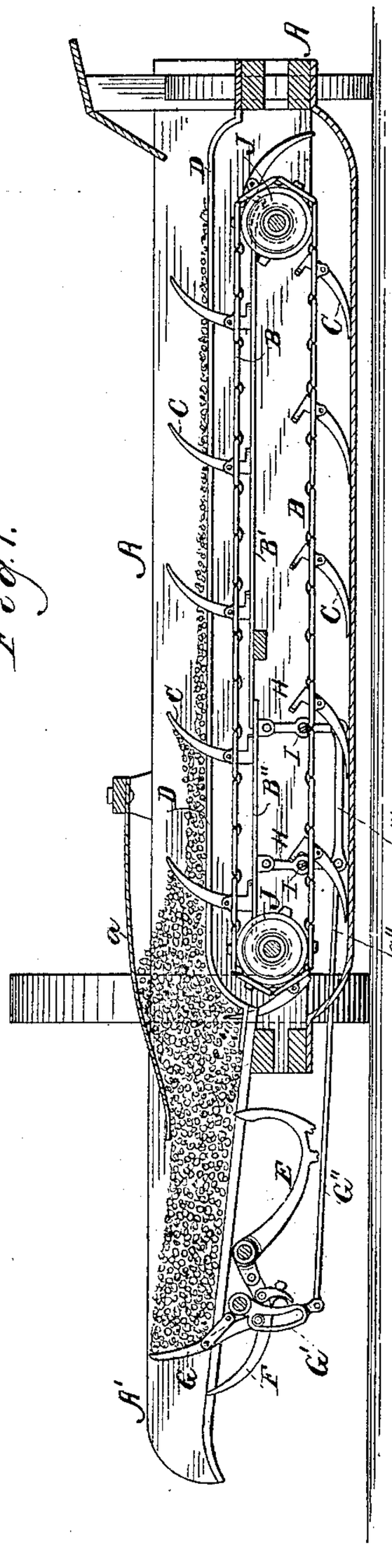
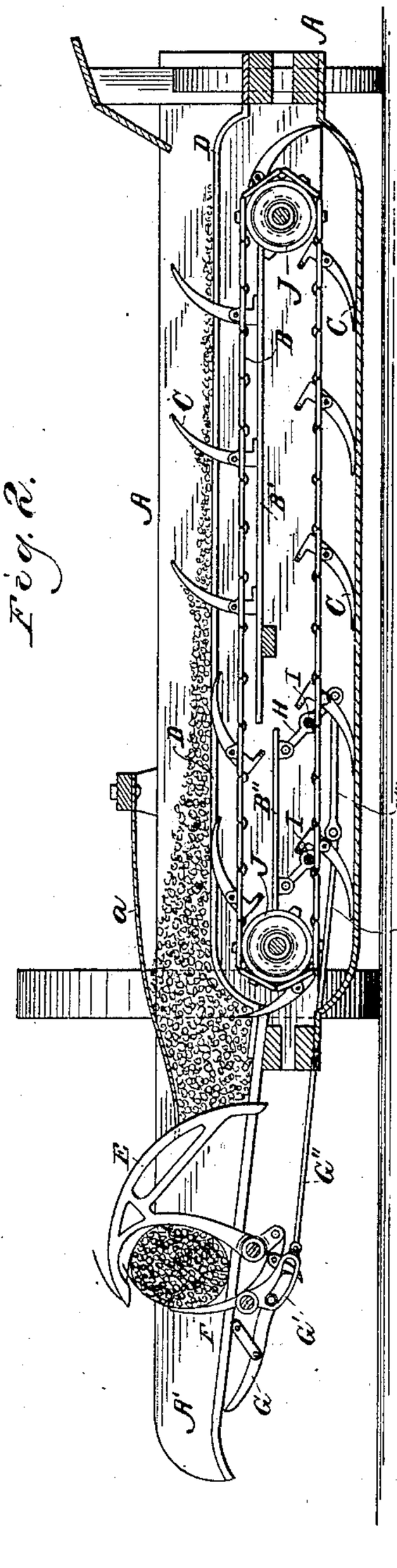


Fig. 2.



Witnesses.

H. Clay Dunlap,

W. L. Baker.

Inventor:

Charles Colahan.

(No Model.) 2 Sheets—Sheet 2.

C. COLAHAN.

GRAIN BINDER.

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Fig. 3.

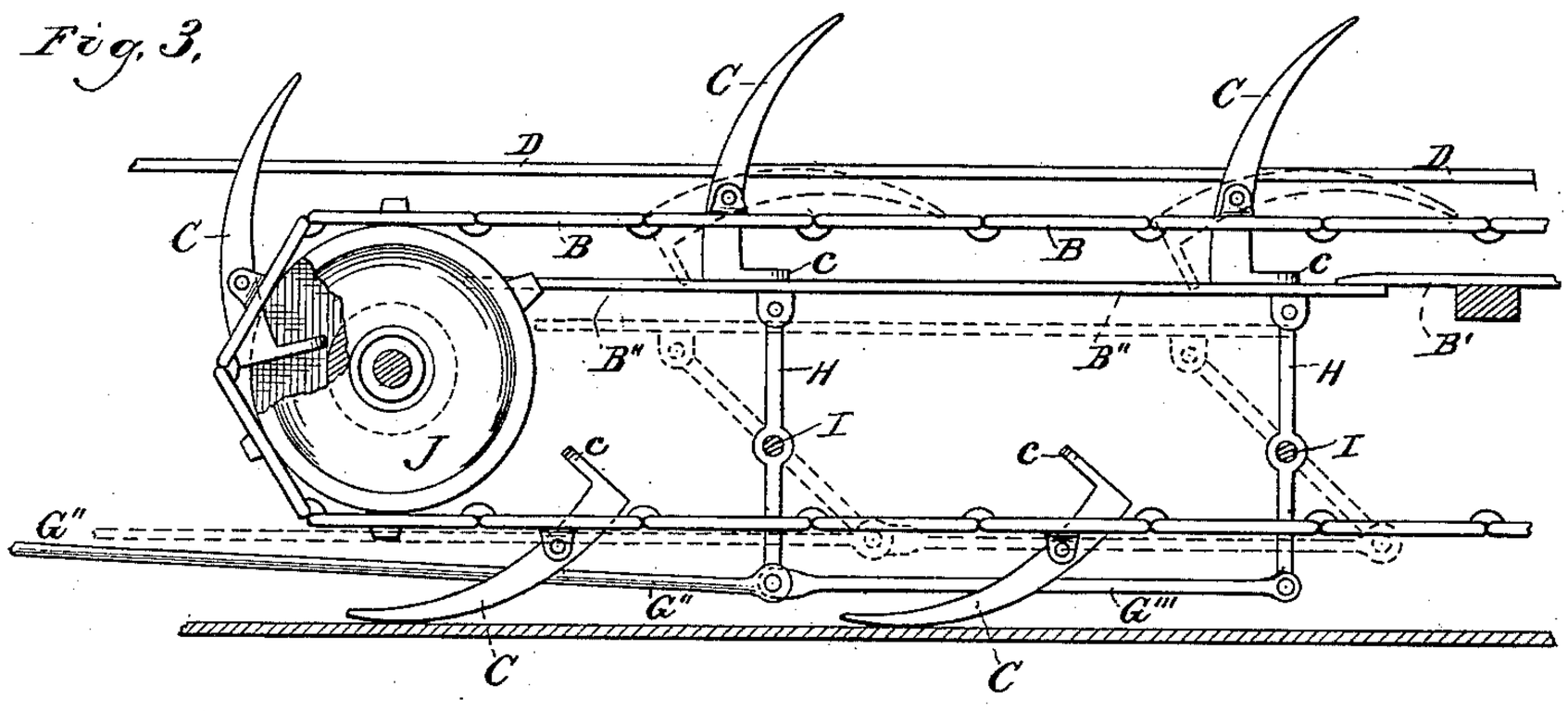

Fig. 4.

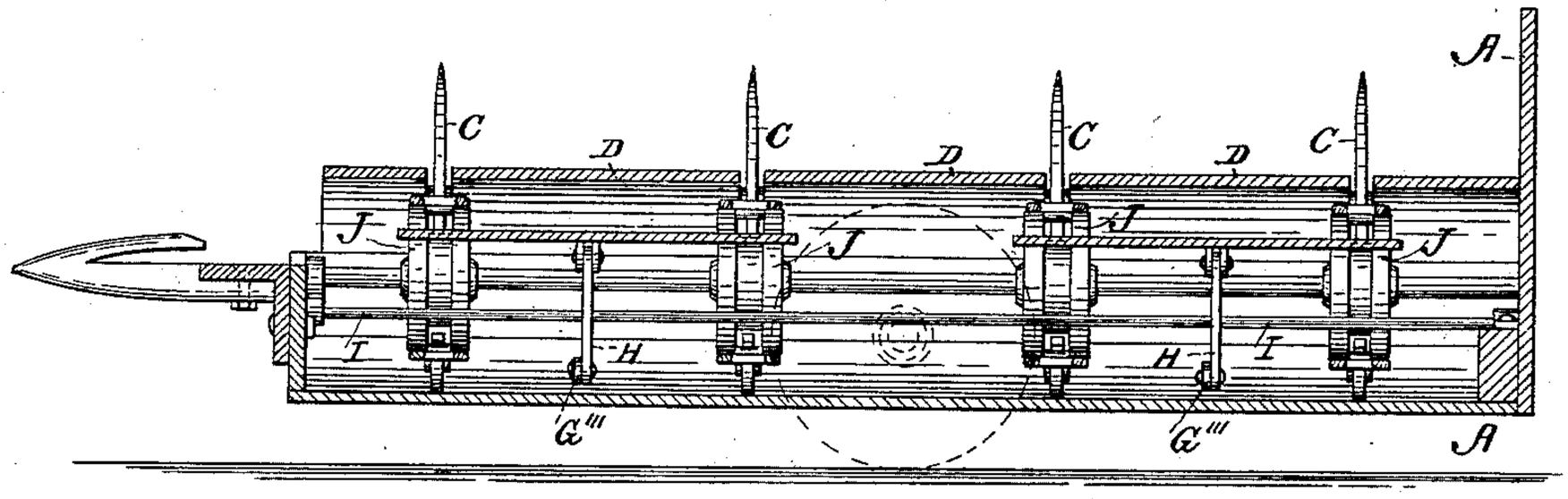

Fig. 5.

Fig. 6.

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Charles Colahan

UNITED STATES PATENT OFFICE.

CHARLES COLAHAN, OF CLEVELAND, OHIO.

GRAIN-BINDER.

SPECIFICATION forming part of Letters Patent No. 358,920, dated March 8, 1887.

Application filed October 29, 1883. Serial No. 110,276. (No model.)

To all whom it may concern:

Be it known that I, CHARLES COLAHAN, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Grain-Binders, of which the following is a specification.

Reference is hereby made to the accompanying drawings, forming a part of the same, in which similar letters of reference indicate corresponding parts in all of the figures.

Figure 1 is an elevation of my improvement, showing the process of gathering the grain as it is being cut and its accumulation into the receiver and binding apparatus. Fig. 2 is a similar view of the same while forming a sheaf, also showing the temporary stopping of the packing function of the raking and packing fingers during this period of the operation. Fig. 3 is an elevation on a larger scale. Fig. 4 is an end sectional view. Fig. 5 is a sectional view of the rake fingers and chain. Fig. 6 is an end view of the same.

My invention relates to that form of harvester and binder where the grain is received on a horizontal continuously-revolving chain-rake and platform and conveyed to the inner end and beyond the cutting device to a receiver, where it is bound in sheaves of any predetermined size, and while the sheaf is being bound the inner gathering end of the rake may be withdrawn from the grain by the action of the tripping-finger and its connecting-lever when a sufficient quantity of grain has been raked into the receiver to cause the same to trip the binder and place the same in operation to gather and bind the sheaf. The wheels on which the chain or rake runs are mounted on two parallel shafts, which are journaled at the ends of the platform in any convenient manner. The chain is composed of a series of ordinary links, of malleable iron, having pivoted therein fingers of an L shape, and said fingers being held in a perpendicular position, when carrying the grain, by their lower surface being sustained horizontally on a guide, over which they travel, and when said fingers are not held in contact with the plane or guide on the upper side of the platform the point of the raking-fingers, being heavier, will by their own gravity be caused to rock on their pivots and assume positions parallel with their carrying-links and drop below the surface of the platform and away from the grain.

The sprocket-wheel over which the chain travels and by which it is carried is grooved in the center to allow the elbow of said tooth a free passage in its continuous revolution.

In the drawings, A, Fig. 1, represents the main harvester. A′ is the binder-receiver. B is the carrying-rake. C C are the pivoted rake-teeth. D is the slotted platform through which the rake-teeth travel in gathering the grain.

B′ is the stationary portion of the guide or track, which serves to maintain the rake-teeth in a perpendicular position. B″ is a movable portion of said guide, which sustains said fingers when gathering and packing the grain against the automatic tripping device. E is the binder-arm. F is the compressing-arm. G is the tripping-finger. G′ is its rocking crank. G″ is a rod connecting said tripping device with the rocking arms H H. The rocking arms H are hinged to each end of the portion B″ of the guide, and are pivoted to the main frame at I.

J are the grooved sprocket-wheels carrying the rake-chain.

In operation the cut grain falls on the platform D, and is raked therefrom by the continuously-revolving chain B and its pivoted teeth C and packed under the guide or shield *a*, which is bolted to the frame of the inside divider, and the fixed portion B′ of the guide is located in the rear of the cutting apparatus, so the rake-teeth will continuously carry the cut grain from this point to prevent accumulation of the falling grain on the platform to clog or obstruct the cutting device, and when the grain has been conveyed beyond this point of objectionable detention it may safely be permitted to accumulate to a certain extent, and which I do by allowing the raking-teeth, after having packed the grain required for a bundle in the receiver and actuating the tripping device, to start the binder, which will simultaneously cause the rocking crank G′, that trips the binder, to force the rod G″ backward and rock the standards H H on their pivots I I, and which operation will withdraw bodily the movable portion B″ of the guide or support from its position of supporting the

raking teeth or fingers C, and admit of their closing back and passing under the grain while a bundle is being formed. After the discharge of the bound bundle the binder-arm and compressor fall back under the platform of the receiver, and the tripping-arm assumes its position in the receiver, which causes the guide B″ to assume its position to support the raking-teeth C, so that they will again perform their function of packing the grain into the receiver.

Having thus described the operation of my invention, what I claim, and desire to secure Letters Patent for, is—

1. The combination, in a platform-harvester and automatic grain-binder, of a horizontal platform-carrier composed of a continuous chain or chains extending entirely across the rear end of the cutting apparatus and to the binding-table, the raking and packing teeth pivoted to the chains, the stationary guide-plate B′ and movable guide-plate B″, hinged at each end to the rocking arms H, and connections between the rocking arms and the binding mechanism, whereby the movable guide-plate B″ is withdrawn from the teeth at the inner end of the carrier during the binding, substantially as set forth.

2. The combination, in a platform-harvester and automatic grain-binder, of a horizontal platform-carrier composed of a continuous chain or chains extending entirely across the rear end of the cutting apparatus and to the binding-table, the raking and packing teeth pivoted to the chains, the stationary guide-plate B′ under the top of the carrier, extending from the outer end of said carrier to the inner end of the rear of the cutting apparatus, and the movable guide-plate B″, extending from the inner end of the rear of the cutting apparatus to the binding-table, said plate being hinged at each end to rocking arms H, and connections between the rocking arms and the binding mechanism, whereby the movable guide-plate B″ is withdrawn from the teeth at the inner end of the carrier, substantially as set forth.

CHARLES COLAHAN.

Witnesses:
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E. P. HANSON.