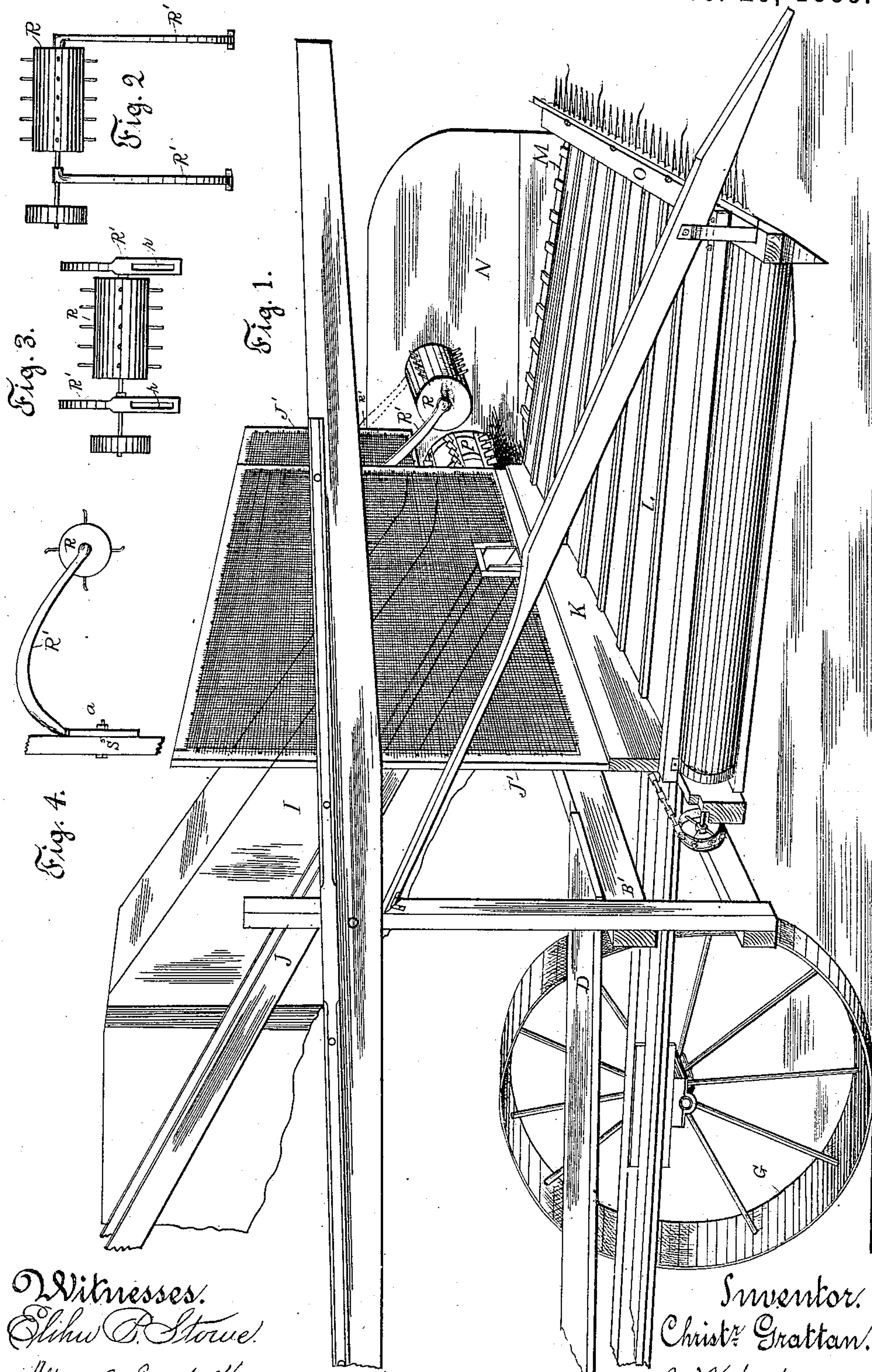


3 Sheets—Sheet 1.

Patented Dec. 29, 1885.

No. 333,124.



Witnesses.
Elihu P. Stowe.
Myrel B. Inadwell

Inventor.
Christ: Grattan.
By J. B. Webster Atty.

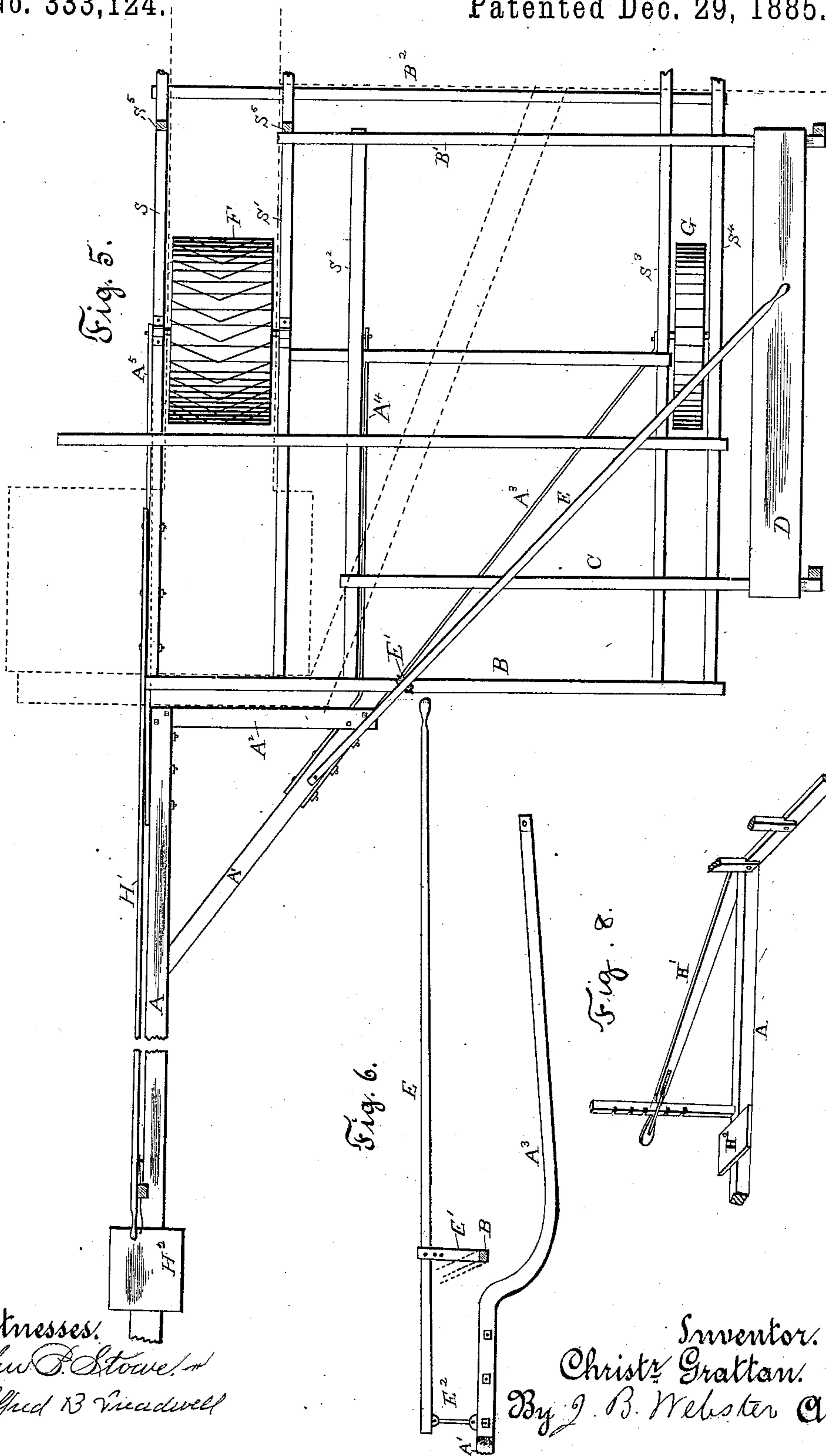
(No Model.)

3 Sheets—Sheet 2.

C. GRATTAN.
HARVESTER.

No. 333,124.

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Elihu P. Stowe, Jr.
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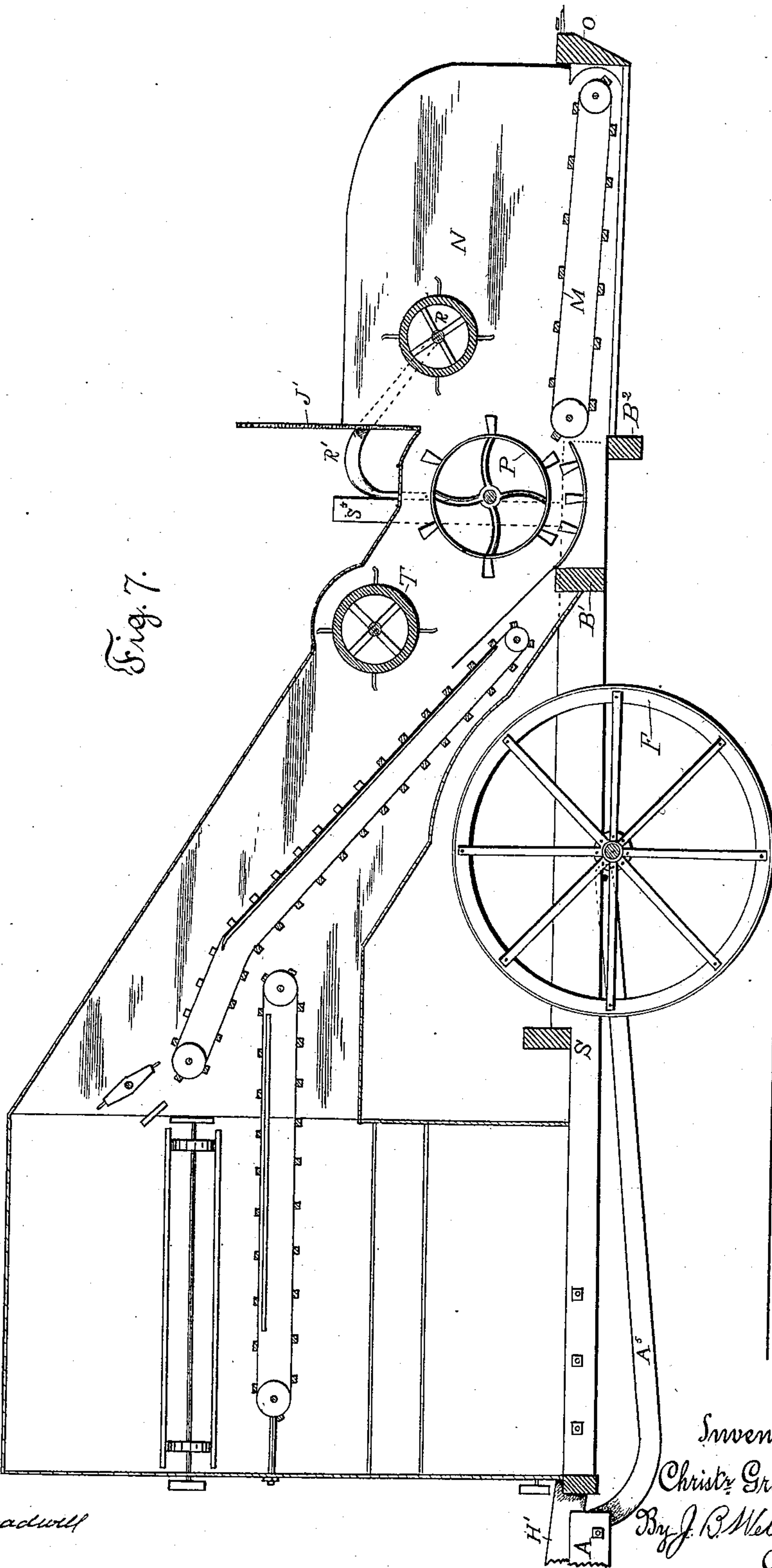
C. GRATTAN.
HARVESTER.

3 Sheets—Sheet 3.

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Patented Dec. 29, 1885.

Fig. 7.



Witnesses.
Edw. B. Stone.

Alfred B. Meadwell

Inventor.

Christy Grattan.

By J. B. Webster.
Atty.

UNITED STATES PATENT OFFICE.

CHRISTOPHER GRATTAN, OF STOCKTON, CALIFORNIA.

HARVESTER.

SPECIFICATION forming part of Letters Patent No. 333,124, dated December 29, 1885.

Application filed May 20, 1884. Serial No. 132,156. (No model.)

To all whom it may concern:

Be it known that I, CHRISTOPHER GRATTAN, a citizen of the United States, residing at Stockton, in the county of San Joaquin and State of California, have invented certain new and useful Improvements in Harvesters, of which the following is a specification, reference being had therein to the accompanying drawings.

10 My invention relates to an improvement in harvesters for gathering and thrashing grain; and it consists, first, in a frame for the machine, which is suitable to have the thrashing and cleaning mechanism placed upon it, and
15 the cutting and conveying apparatus secured to its front; second, in a lever apparatus for conveniently handling the entire machine; third, in levers and attachments by means of which the pitch of the machine may be controlled simultaneously or independently from
20 either one of the platforms; fourth, in a rotary self-feeder; and, fifth, in the combination and arrangement of devices that will be more fully set forth hereinafter, and particularly
25 pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective of the front of a machine embodying my invention, showing the cutting and conveying apparatus attached thereto
30 complete, with the exception of the reel. Figs. 2, 3, and 4 are respectively plan, end, and side elevation views of the rotary feed-cylinder and its supporting-arms. Fig. 5 is a top
35 plan view of the frame of the machine, showing the lever apparatus. Fig. 6 is an elevation of the handling-lever and iron beam connecting the pushing-tongue of the machine with the main frame. Fig. 7 is a vertical
40 section of the machine from front to rear, showing certain parts of it, in connection with those features claimed as new. Fig. 8 is a perspective of the rear operating-lever.

The frame of my machine, upon which the operating apparatus is supported, consists,
45 preferably, of the main cross rear beam, B, and the main cross front beam, B', and the longitudinal beams S, S', S², S³, and S⁴. All of the longitudinal beams are bolted at their rear ends to the cross-beam B, and at their front
50 ends to the beam B', with the exception of the beam S², which at its front end bolts to a cross-

beam, B'. To the beams S and S' are secured the journal-bearings of the axle of the carrying-wheel F, which also operates the driving mechanism of the machine. The journal-
55 bearings of the carrying-wheel G are upon the beams S³ and S⁴. An angular iron brace, A³, is pivoted to the beam S³ near the end of the axle of the wheel G. Another, A⁴, in a direct line therefrom to the beam S², and a third, A⁵, in a direct line therefrom to the beam S,
60 at the end of the axle of the wheel F. These three iron braces extend rearwardly, and are rigidly attached, as follows: A³ and A⁴ to a diagonal brace, A', extending from one end
65 of a cross-brace, A², (which is attached at its other end to the pushing-tongue A,) to the tongue A, and the third iron brace, A⁵, is attached at its rear end to the side of the tongue A, these three iron braces being really exten-
70 sions of the tongue A, and serving to attach it flexibly to the machine-frame, so as to permit the tilting movement necessary in this class of machines to change their slope or pitch when in operation in the harvest-field.
75 The tongue A has a guide and supporting wheel (not shown in the drawings) at its rear; also, a platform, H², as a standing place for the machine-operator, who handles the machine from that point by means of a lever,
80 H', which is above the tongue A, and is attached at its front end to the machine-frame, just at the rear of the wheel F, upon the beam S. This last described leverage apparatus is usually employed to directly control and di-
85 rect the pitch or slope of the machine; but it often happens that on rough and uneven land it is desirable to provide an auxiliary device, by means of which the pitch of the machine may be more readily changed. This I accom-
90 plish by attaching a platform, D, outside of the wheel G, at the ends of supporting cross-beams C and B'. The beam C is attached to the beams S², S³, and S⁴, and the beam B' to beams S', S², S³, and S⁴. A lever, E, has its
95 handling end over this platform D, in reach of the operator, and the back end is flexibly attached by connecting-iron E² to diagonal brace A', and has its fulcrum in vertical post E', seated upon beam B. By means of these
100 devices the pitch of the machine may be controlled simultaneously or independently from

platforms D and H². To the tongue A the horses for propelling and actuating the machine are attached.

Upon the frame-work above described is also constructed the thrashing and cleaning apparatus, the former of which is indicated by the dotted lines on Fig. 5, a vertical section of which is shown in Fig. 7. The cutting and conveying apparatus is attached to the front of the beams B' and B². No particular method of construction is claimed for the cutting apparatus or for the thrashing and cleaning apparatus.

The cutting and conveying apparatus consists of a transverse trough composed of a back side-board, K, with a wire screen, J', over it to save the grain from falling rearward, and a front bar, O, which contains the fingers and cutting-knives, actuated by any desired mechanism. A receiving-drawer, L, propelled by suitable rollers, pulleys, and belts, runs in this trough and receives the cut grain, and conveys it to a cross feeder-drawer, M, which delivers it at the mouth of a cylinder, P, located directly at the end of the side-board, K, and at the rear of the feed-drawer M, and having the journal-bearings of its shaft in vertical posts S⁵ S⁵, attached to beams S and S'. A fender-board, N, parallel with and on the outside of the feeder-drawer M, prevents the cut grain from dropping off the machine.

In order to accelerate the flow of the grain into the cylinder P from the feeder-drawer M, and to prevent its "bunching" or becoming matted together, a rotary feed-cylinder R, provided with teeth, is suspended over the mouth of the cylinder by angular arms R', attached to the vertical cylinder-posts S⁵ S⁵ by bolts *a*. The heads of these arms R' are provided each with a slot, *r*, for reception of bolts *a*, so that the distance of the feeder R above the draper-feeder M may be readily controlled and regulated for light or heavy grain. By this device a much smaller cylinder, P, may be employed, thus reducing the weight and friction and requiring much less horse-power than is ordinarily employed in such machines.

Just back of the cylinder is a frame, I, which may contain any desired style of conveyers and straw-carriers and cleaning apparatus; but as I claim nothing new or novel in any of these features they are not fully shown or described, and are omitted, except so far as is necessary to connect my invention therewith.

Immediately back of the cylinder in the trunk I, suitably mounted in boxes, is a rotary beater, T, which serves further to stir up the grain and separate it as it leaves the cylinder.

It has been usual to return the tailings from the sieves of this class of machines to the front of the cylinder, thereby causing a stream of clear tailings to enter the cylinder simultaneously and without equal distribution through the primary grain, straw being run through it, thereby rendering the kernels of these tailings more liable to be cracked. I overcome this objection by providing a trough, J, ex-

tending diagonally from the rear of the trunk I, and having its delivery end through the screen J' over the side K of the draper-trough, so that the tailings are emptied upon the draper L at its center and mingled and distributed among the primary grain, straw being conveyed to the feeder-drawer M by the draper L.

The gearing and belting for driving the machine are common and well known; hence they are not described or shown, except to a limited extent, it being only requisite that the parts be driven in a proper direction and at suitable speeds.

I am aware that many of the separate features of the entirety of what I have shown are old; but

What I claim as new and of my invention is—

1. A frame adapted for a combined harvesting-machine, said frame composed of the cross-beams B, C, B', and B², longitudinal beams S, S', S², S³, and S⁴, pushing-tongue A with platform H², and platform D, parallel with beam S⁴, and attached to outer ends of beams C and B', all substantially as set forth.

2. The combination, with the diagonal brace A', attached to the tongue A and cross-brace A², and connected with the beams S² and S³ by the angular iron braces A³ and A⁴, of the lever E, connected to the brace A' by means of the swinging link E², and having its fulcrum in vertical post E', seated upon beam B, substantially as set forth.

3. The combination, with the cylinder P, feeding-drawer M, fender-board N at the side of draper M, of the rotary feed-roller R, attached to posts S⁵ S⁵ by means of angular arms R' R', provided with slots and attached to posts S⁵ by bolts *a*, whereby its position over the cylinder P and feeder M may be regulated, substantially as shown.

4. The combination of vertical posts S⁵ S⁵, attached to the beams S and S', with the angular arms R', having the slots *r* and attached to posts S⁵ by bolts *a*, and carrying the rotary feeder R, provided with teeth, substantially as and for the purposes shown.

5. The herein-described harvesting-machine, consisting of the tailings-trough J, screen J', platform, side bars, K, and O, the draper L, the feeding-drawer M, having the fender-board N at its side, and the cylinder P, all arranged, substantially as shown, to deliver the tailings from trough J upon draper L.

6. The combination, with beams C, attached to beams S² S³ S⁴, and beam B', attached to beams S' S² S³ S⁴, of the platform D, having the front end of the lever E over it, substantially as shown.

In testimony whereof I affix my signature in presence of two witnesses.

CHRISTOPHER GRATTAN.

Witnesses:

ELIHU B. STOWE,

JOSHUA B. WEBSTER.