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A. L & G. M. Peters.

Imp^d Harvester-Dropper.

No 84133 Patented Nov. 17. 1868

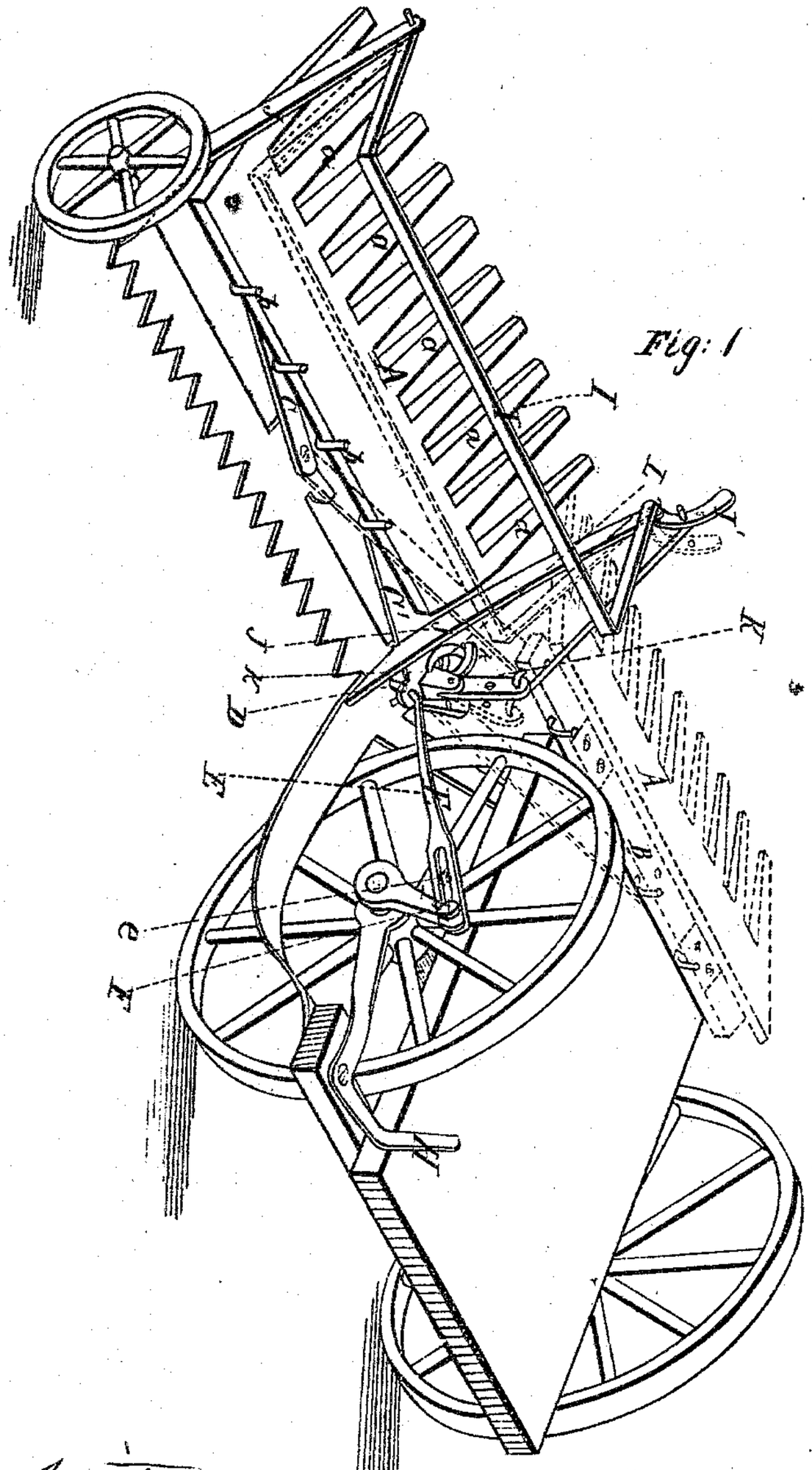

Fig: 1

Witnesses

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Sheet 2. 2 Sheets.

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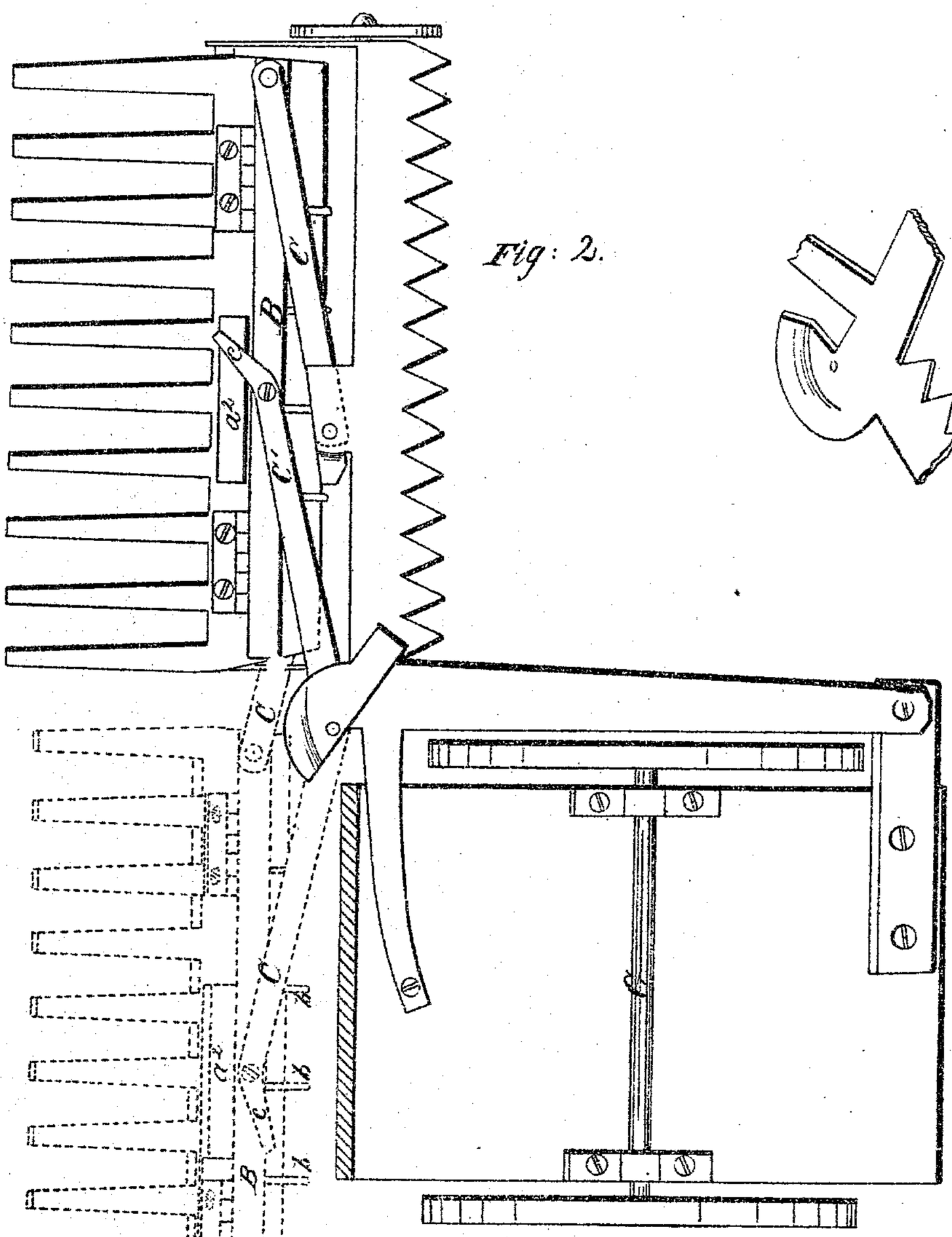

Fig: 2.

Fig: 3.

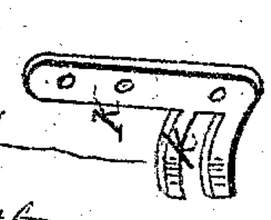

Fig: 5.

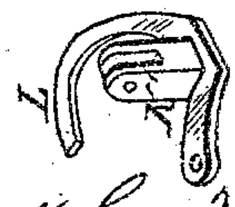

Fig: 4.

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UNITED STATES PATENT OFFICE.

A. L. PETERS AND G. M. PETERS, OF LANCASTER, OHIO.

IMPROVEMENT IN DROPPERS FOR HARVESTERS.

Specification forming part of Letters Patent No. **84,133,** dated November 17, 1868.

To all whom it may concern:

Be it known that we, A. L. PETERS and G. M. PETERS, both of Lancaster, county of Fairfield, and State of Ohio, have invented certain new and useful Improvements in Droppers or Discharging-Platforms for Harvesters; and we do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a perspective view of a harvesting-machine, taken from the front grain-corner of the machine, and showing, in black and red lines, the receiving and discharging positions of the platform and cut-off. Fig. 2 is an inverted plan or bottom view of the same; and Figs. 3, 4, and 5 are detached views of parts of the machine, hereinafter described.

Similar letters of reference denote corresponding parts in all the figures.

The object of the various constructions of droppers in use has been to effect the discharge of the cut grain deposited upon the platform of the machine by the operation or movement of said platform itself, in such manner as to dispense with the complicated and frequently cumbrous mechanism consequent upon the employment of the various raking attachments in use. The platform itself is, of course, indispensable to either process; and if such platform can be made to accomplish both functions—viz., that of receiving and holding the grain until a sufficient quantity to form a gavel or sheaf has accumulated thereon, and then of discharging it in compact form on the ground—the advantage of such construction would be obvious, for, aside from the great additional weight of the machine provided with any of the various raking attachments in use, the vexatious delays to which farmers, in the hurry of the grain-harvest, are subjected by the disarrangement or breakage of parts of the complicated machinery usually employed to drive these raking attachments, and which it is frequently beyond the skill of the farmer and the reach of the manufacturer to remedy, are such as often to lead the farmer to regard them as of doubtful utility, and to cause many, in preference to being subjected thereto, to dispense with them, and to depend entirely upon the reliable but more laborious process of discharging the grain by hand.

The simplicity of the operation of discharging the grain by the simple movement or tilting of the platform, on the other hand, is such as to predispose the farmer to regard it with favor, and many attempts have consequently been made to so construct and operate the platform as to dispense with the usual process of raking off the grain therefrom. In these dropping-platforms, as ordinarily constructed, after a quantity of grain sufficient to form a gavel had accumulated thereon, said platform was made to vibrate upon a fixed pivot or shaft, arranged in line parallel with the finger-bar of the machine, until it was sufficiently inclined to the rear to cause the grain to slide off upon the ground behind the cutting apparatus and platform, and directly in the path of the team and machine on the next round, and the grain had to be bound and removed as fast as it was cut, thereby necessitating the employment of a larger force than would otherwise have been necessary, or it was liable to be run over and trampled upon in such manner as to cause great waste of the grain.

Attempts have been made to construct a dropper which would effect the discharge of the grain upon one side, at a point out of the way of the machine on the next round; but in all of these with which we are acquainted the operation was not performed and the discharge of the grain was not effected in such manner as to warrant their adoption by manufacturers or meet the approval of the farming community.

The object of our invention is to effect the delivery of the grain by the movements of the platform itself, in such manner as to leave the grain deposited upon the ground in a neat and compact form for binding until properly cured, and out of the way of the team and machine on the next round, whereby the waste consequent upon the usual modes of discharging the grain by the movement of the platform is avoided; and this object, it is believed, is fully attained by this invention, the nature of which will be understood from the following description, reference being had to the drawings, in which—

A represents the platform, composed, in this instance, of a number of light slats or rods, *a*, arranged in rear of the cutting apparatus, and in lines parallel with the path of the machine,

though, if preferred, any other construction, such as a solid platform, or one composed of slats lying parallel with the finger-bar, may be employed; but, for the purpose of lightness and easy discharge of the grain, we prefer the arrangement shown. These slats are secured, at their forward end, to a bar arranged in a line parallel with the finger-bar, and the platform thus constructed is pivoted or hinged, on its under surface and at a point forward of its center, to a platform-bar, B, as shown in Fig. 2, also in red lines, Fig. 1.

The bar B is provided on its forward edge with a series of teeth, *b*, which project upward in front of the platform when the latter is in position to receive the grain, and while it is being moved to its point of discharge, said teeth (only a few of which are shown) extending the entire width of the platform, and serving to hold the grain properly thereon until the platform is tilted to discharge it.

The bar B is supported upon the ends of two parallel arms, C C′, and is connected thereto by means of vertical pivots, and the opposite ends of arms C C′ are pivoted in like manner to horizontal lugs on the finger-bar, or bar and shoe, in such manner as to allow said arms to vibrate freely thereon, and to operate like the links of a parallel rule, so as to allow the platform to vibrate in the arc of a circle from a position in rear of the cutting apparatus to one in rear of the main frame of the machine. (Shown in red lines, Figs. 1 and 2 of the drawings.)

In the drawings, Fig. 3, we have shown the inner supporting ear or lug formed on the shoe or heel-extension thereof and made in the form of a cam or inclined plane, so that as the platform is swung outward to its position behind the frame it will be slightly raised, sufficiently to give it ample room to be so tilted as to quickly and effectively dump or discharge the grain, and to permit its return to its position to receive the grain without danger of being obstructed by the surface over which the machine is drawn.

An angular extension, *c*, of one or both the arms C C′ projects underneath a metallic bar or rib on the under side of the platform, and serves to hold the platform in proper position to receive the grain until said platform reaches its point of discharge behind the main frame, when the withdrawal of said extension by the movement of the arm, as represented in Fig. 2, allows the platform to tilt and discharge the grain; and as the platform starts back to receive another gavel said extension is pressed back underneath the rib a^2, and the platform is again raised to receive and retain another load.

The inner parallel link or arm, C′, has formed upon or attached to it a short perforated arm or lug, D, to which one end of a pitman, E, is connected, the opposite end of said pitman being slotted, as shown at *e*, and embracing a crank, F, on the inner end of the main drive-wheel axle G.

The platform is vibrated back and forth by this means, and the slot in the pitman allows it to rest at each end of its stroke sufficiently long to properly receive the gavel and allow for its discharge.

The crank-arm is connected with the axle by a clutch, and is placed under the control of the operator by means of a shipping-lever, H.

It will be apparent that while the platform is removed and is being operated to discharge the gavel, it is necessary to make some provision to receive and hold the falling grain, and for this purpose we provide a cut-off or rod, I. Said cut-off is made in an angular form, (see Fig. 1,) and is pivoted at its opposite ends in arms J J, at a point or points in rear of and above the finger-bar, and is provided at its inner end with a crank-arm, I′, which has connected with it one end of a pitman, the opposite end of which is connected with a bell-crank lever, K, the attachment of the pitman at either or both ends being such as to provide for the adjustment of the throw of the bail-rod or cut-off I, as may be desired.

The construction of lever K is shown in Fig. 5, the lower horizontal arm, *k*, being forked, to adapt it to receive and be operated upon by a cam-rod, L, attached to and turning with the inner platform-bar or link, C′. The crank-lever K is pivoted in lugs or an upright, K′, as shown in Fig. 1.

The operation of the cut-off is as follows: The platform being in position represented in black lines, Fig. 1, the bail or cut-off is elevated sufficiently high to allow the grain, as it is cut, to fall underneath the same and upon the platform, without obstruction therefrom. As the platform is swung away from the cutting apparatus to discharge its load, the cam-rod L acts upon the forked crank-lever, throwing the upper end forward, and forces the rod or cut-off downward and forward to a position (shown in the red lines, Fig. 1) adapting it to receive and hold the grain until the return of the platform reverses the movement of the crank-lever and raises the rod or cut-off, allowing the cut grain accumulated thereon to fall upon the platform, which is again in position to receive it.

By the construction and mode of operation described it will be seen that the first movement of the platform as it starts to discharge its load is directly backward from the cutting apparatus. This movement serves to remove it out of the way of obstruction from the falling grain and the platform and cut-off supports. Simultaneously with this first movement of the platform the cut-off is brought down and interposed to receive the falling grain. The platform is then swung to the rear of the frame, maintaining its parallel relation to the cutting apparatus, is at the same time raised out of the way of anything that

would interfere with its freedom in tilting, and is then tilted to the rear on the hinge or pivot, at right angles to the path of the machine, after which it is returned to receive another gavel.

The finger-bar may be provided on its rear edge with a ledge or rib, which will hold the stub ends of the grain, and assist the cut-off while the platform is removed, in a manner that will be readily understood.

We have shown our invention applied to that class or construction known as the "Ball" machine, and all the parts are so arranged as to adapt them to conform freely to the movements of the hinged or floating bar used in said machine; but it will be apparent that our improvement may be readily applied to any and all of the various constructions of rigid and hinged bar machines in use without the aid of other than mere mechanical skill to adapt them thereto.

Having now described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. A dumping-platform which is adapted to be swung or vibrated in the arc of a circle to a position behind the frame for discharging the gavel, while at the same time it preserves its parallelism with the finger-bar.

2. The tilting or dumping platform, in combination with means for operating the same, whereby said platform is adapted to be swung to a position behind the main frame, and there tilted upon a pivot or hinge parallel with the platform, and at right angles to the path of the machine, as set forth.

3. The parallel arms or links C C′, or their equivalent, for supporting and operating the platform, as described.

4. The combination of the parallel arms or links, platform-bar, and tilting platform, hinged or pivoted thereto.

5. The retaining-teeth, in combination with the platform-bar and tilting platform.

6. The arrangement of the fulcrum of the cut-off in rear of the cutting apparatus and above the same, so that said cut-off, in being operated to intercept the falling grain, shall be moved downward and forward in the arc of a circle, the center of which is in rear of and below said cut-off, as described.

7. The inclined way or cam on the heel of the shoe or drag-bar for raising the platform as it is swung to the rear of the frame for the discharge of the gavel, substantially as described.

8. The angular extension of the platform-arm C′, or its equivalent, operating in combination with the platform, substantially as described.

9. The forked lever, or its equivalent, for operating the cut-off, in combination with the vibrating cam or cam-rod on the platform-arm C′ or platform, substantially as described.

10. The combination of the swinging and tilting platform, cut-off, and means for operating the same, substantially as described.

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