

Harvester Rake.

No. 21,869.

Patented Oct. 26, 1858.

Fig. 1.

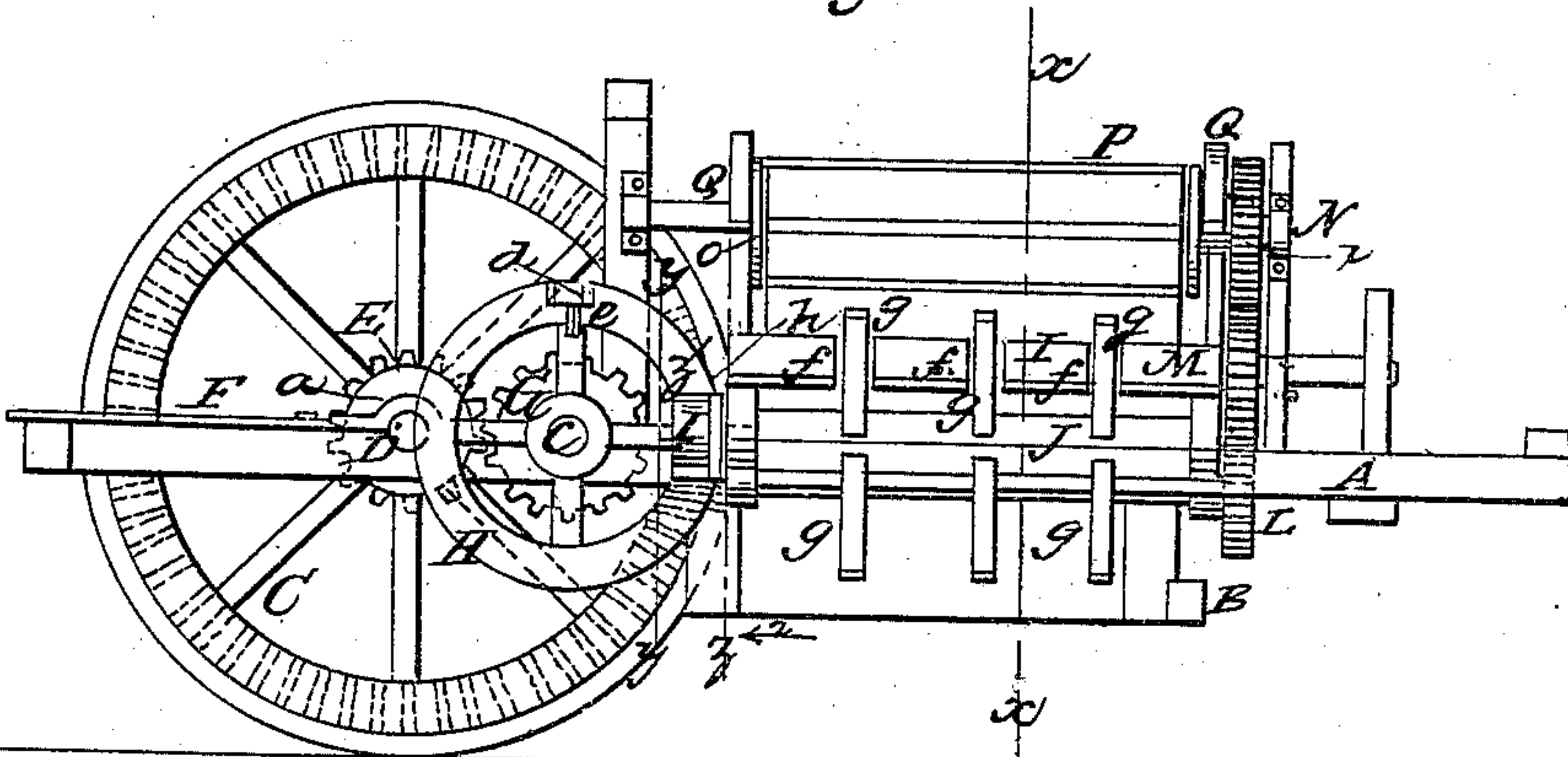


Fig. 2.

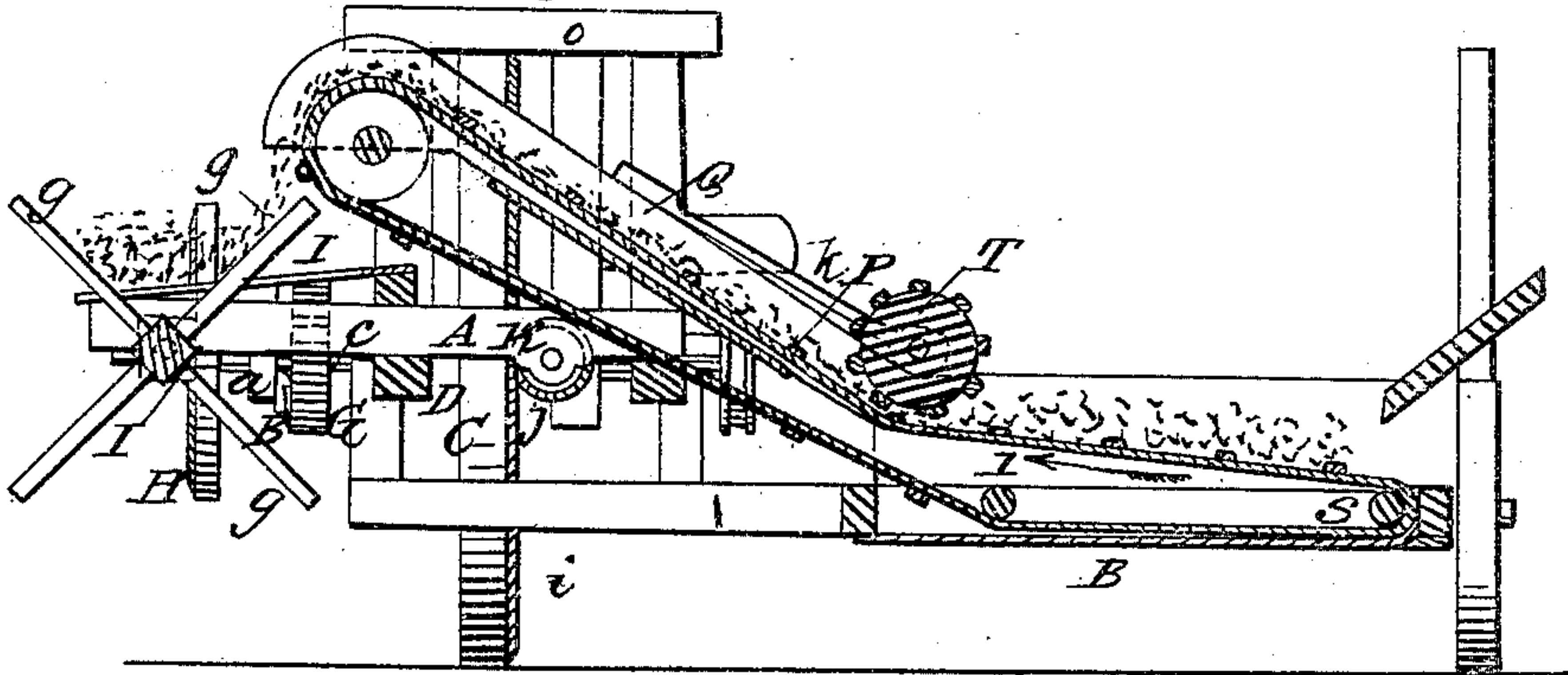


Fig. 3.

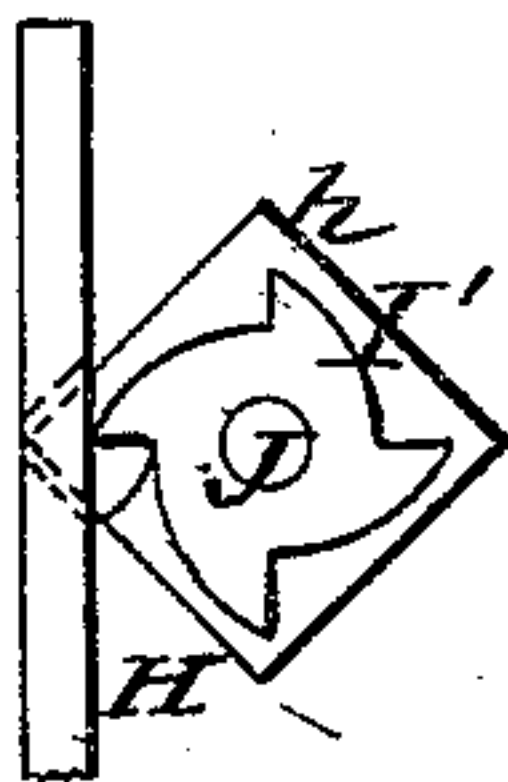
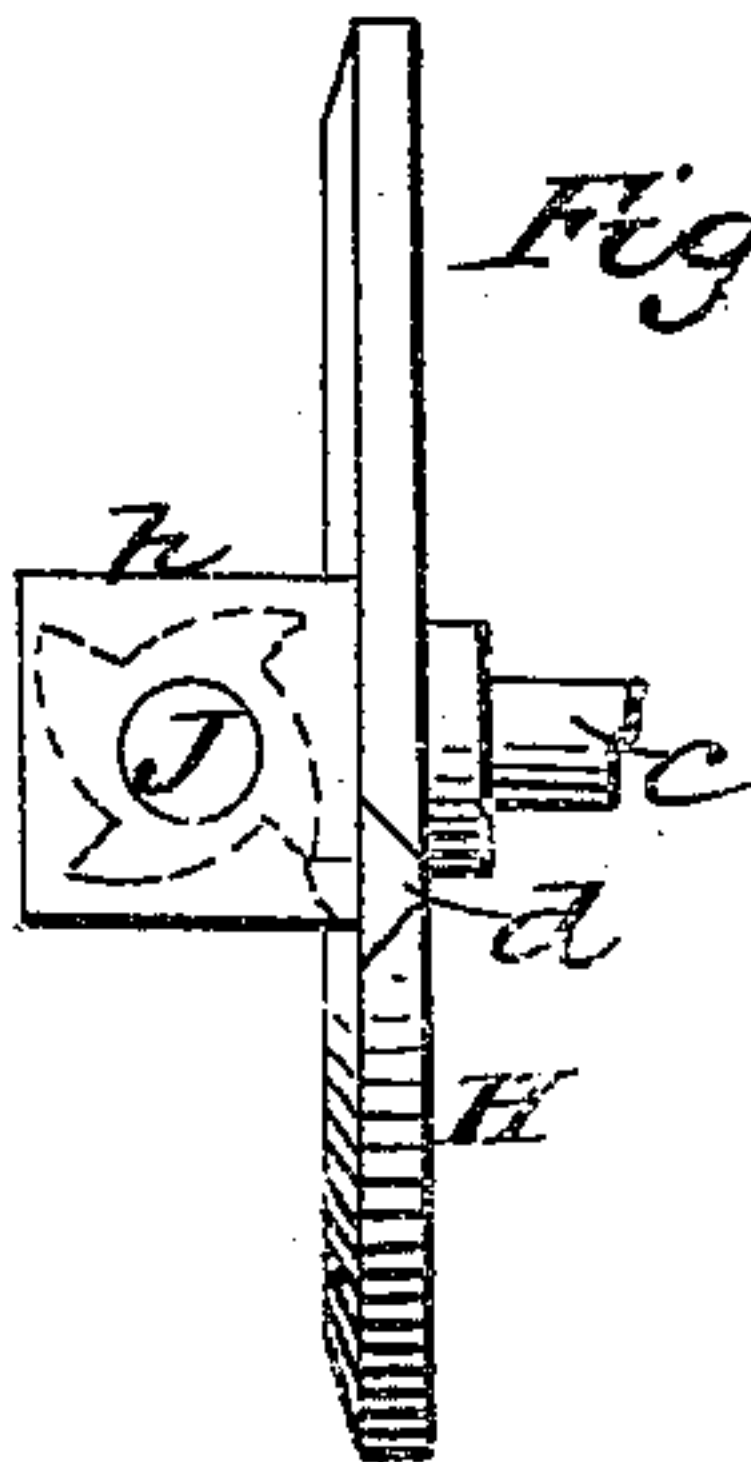


Fig. 4.



UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN GRAIN-DISCHARGING ATTACHMENTS TO HARVESTING-MACHINES.

Specification forming part of Letters Patent No. 21,869, dated October 26, 1858.

To all whom it may concern:

Be it known that I, J. F. BLACK, of Lancaster, in the county of Cass and State of Illinois, have invented a new and Improved Grain-Discharging Attachment for Reapers; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a back view of a reaper having my improvement attached to it. Fig. 2 is a longitudinal section of the same, taken in the line *xx*, Fig. 1. Fig. 3 is a section of the same, taken in the line *yy*, Fig. 1, and looking in the direction of arrow 1. Fig. 4 is a section of the same, taken in the line *zz*, Fig. 1, and looking in the direction of arrow 2.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to an improvement in that class of raking or, rather, grain-discharging attachments for reapers in which an endless apron is used for carrying the cut grain from the platform.

The object of the invention is to obviate, by a very simple means, a difficulty hitherto attending the simplest form of the above class of discharging devices—to wit, the irregular discharge of the gavels, due to the casual movement of the intermittingly-moving parts.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A represents the main frame of a reaper, and B is the platform of the same, attached to the frame A in the usual or any proper way.

In the back part of the main frame A a driving-wheel, C, is placed, on the axle D of which a pinion, E, is placed loosely, and a ratchet, *a*, is placed permanently on the axle.

On the outer side of the pinion E ratchet-teeth *b* are formed, and a lever, F, is attached to the pinion, by which the pinion may be thrown in and out of gear with the ratchet *a*, and consequently connected and disconnected from the axle D, as may be desired. The pinion E gears into a corresponding pinion, G, which is placed on a shaft, *c*, in the main frame A, and to the outer end of shaft *c* a wheel, H, is attached, said wheel having a recess, *d*, in its periphery, and a projecting ledge or tooth, *e*, attached to one of its arms and just at the inner side of recess *d*. (See Figs. 1 and 4.)

I is a platform, which projects from the outer side of the main frame A, just in front of the driving-wheel C. This platform is slotted longitudinally, as shown at *f*, Fig. 1, and underneath the platform I there is a shaft, J, having four sets of radial arms, *g*, attached, the several sets being at equal distances apart.

On the back end of the shaft J there is placed a pinion, I', having four teeth only, and this pinion is attached to or cast with a square plate, *h*, which is by the side of the rim of wheel H. (See Figs. 1, 3, and 4.)

On one side of the driving-wheel C a gear, *i*, is formed, and this gear meshes into a pinion, *j*, which is placed on a longitudinal shaft, K, in the main frame. The front end of shaft K has a pinion, L, on it, and this pinion gears into a pinion, M, which gears into a pinion, N, placed on one end of the axis of a roller, O, which is the upper roller of an endless apron, P. The roller O is placed at the upper ends of inclined bars Q Q, which are attached to the platform B, and the roller O extends over the inner end of the platform B. The lower roller, S, of the endless apron is placed in the outer end of the platform B, and T is a pressure-roller, the axis of which is fitted in the ends of springs *k k*, attached to the lower parts of the bars Q Q, said roller bearing on the apron P and keeping its lower portion horizontal, or nearly so, with the platform. The apron P may be constructed in any proper way. Strong cloth with leather straps secured to its edges and transverse slats attached to the cloth would make a good apron.

I would remark that any proper sickle may be used, and also the usual reel.

The operation is as follows: As the machine is drawn along a continuous motion is given the endless apron P in the direction indicated by the arrow 1, and the cut grain falls on the horizontal portion of the apron P, and is carried up underneath the roller T and discharged on the platform I, between the arms *g*, that extend along it, the roller T pressing the stalks or straws together and causing them to pass up the inclined portion of the apron in good order. The cut grain is discharged by the apron P between the arms of the shaft J, and this shaft is rotated intermittingly by the wheel H and pinion I', the latter being turned one-quarter of a revolution for every revolution of the wheel H. The projection *e* of wheel

H strikes the teeth of the pinion I', and the recess *d* in wheel H receives the corners of the plate *h* and permits the turning of the pinion I' and shaft J when the recess *d* passes the ends of the plate. Said plate is kept stationary in consequence of the side of the plate *h* bearing against the rim of wheel H. Each time the shaft J and arms *g* are turned the grain that the apron P discharged between the upper arms, *g*, above the platform, is thrown off, and the succeeding arms that pass above the platform receive the grain that is likewise thrown off at the following revolution of wheel H, the "dwells" or interim between the movements of the arms *g* being of sufficient duration to allow the arms *g* to receive enough grain to form a proper-sized gavel.

From the above description it will be seen that the arms *g* cannot be casually moved, and the grain will consequently be discharged in uniform gavels.

I do not claim the employment or use of the endless apron P; nor do I claim an intermittently rotary-discharging device in connection with said apron, for they or their equivalents have been previously used for the purpose specified; but,

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

Operating the gavel-discharger—that is to say, the rotating arms *g* of shaft J—from the driving-wheel C through the medium of the wheel H, provided with the slot *d* and tooth *e*, and the pinion I', provided with a quadrilateral plate *h*, as and for the purposes herein shown and described.

J. F. BLACK.

Witnesses:

JOHN SYBRANT,
JOHN MATHIS.