

(No Model.)

2 Sheets—Sheet 1.

R. B. ROBBINS.
CORN AND CANE HARVESTER.

No. 407,244.

Patented July 16, 1889.

Fig. 1.

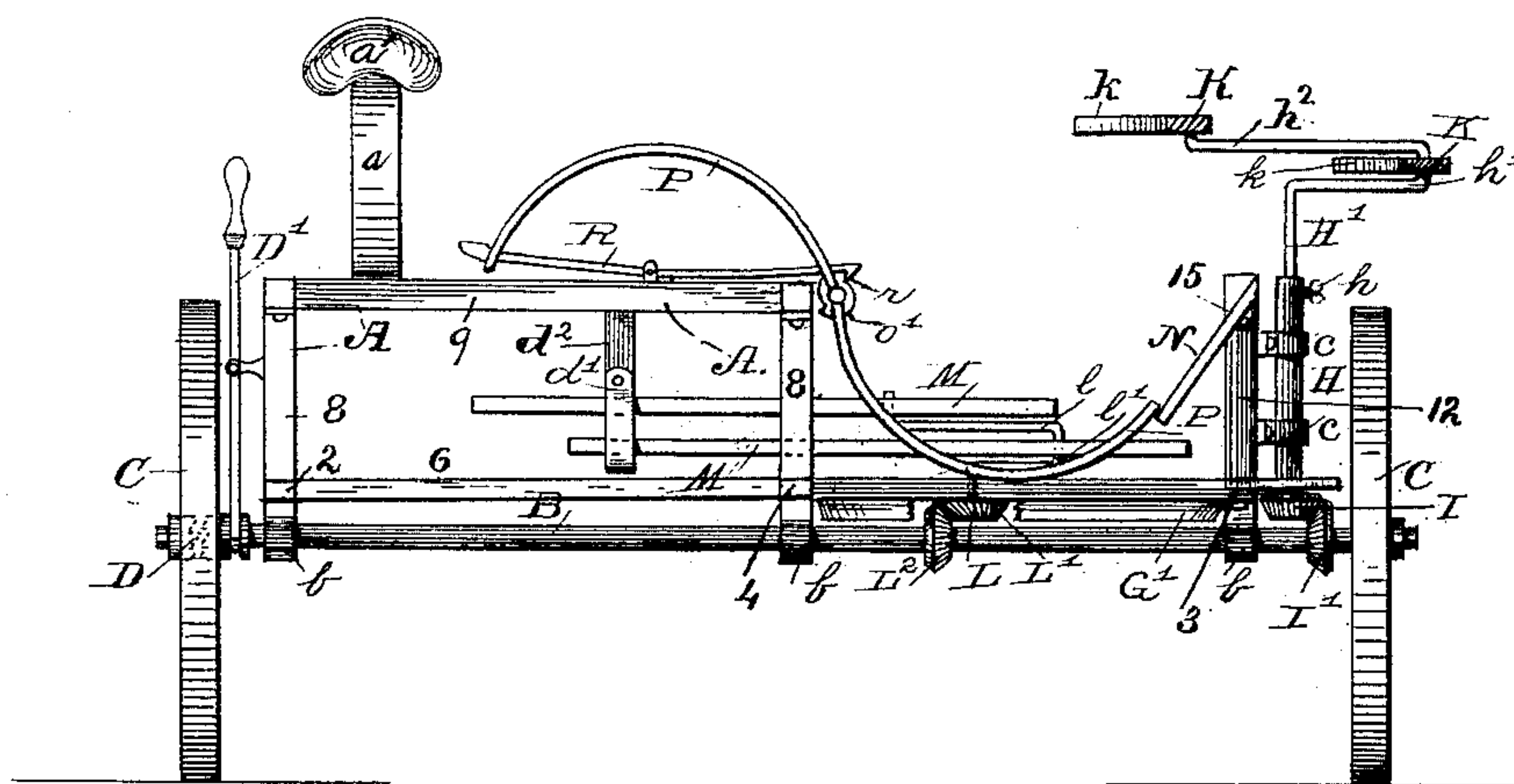
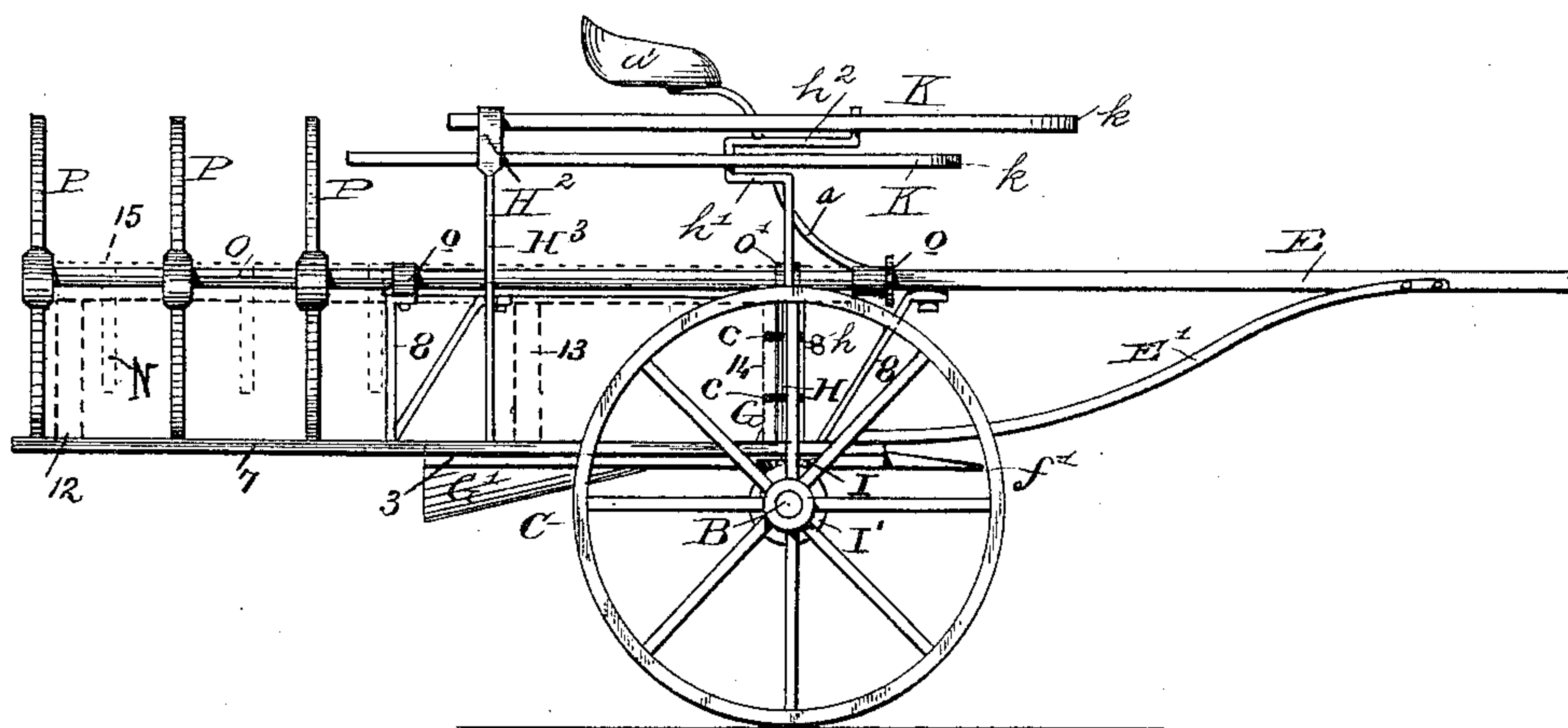


Fig. 2.



WITNESSES

Joseph Blackwood
E. F. Munro

INVENTOR

Richard B. Robbins
by Francis W. Jones
his Attorney

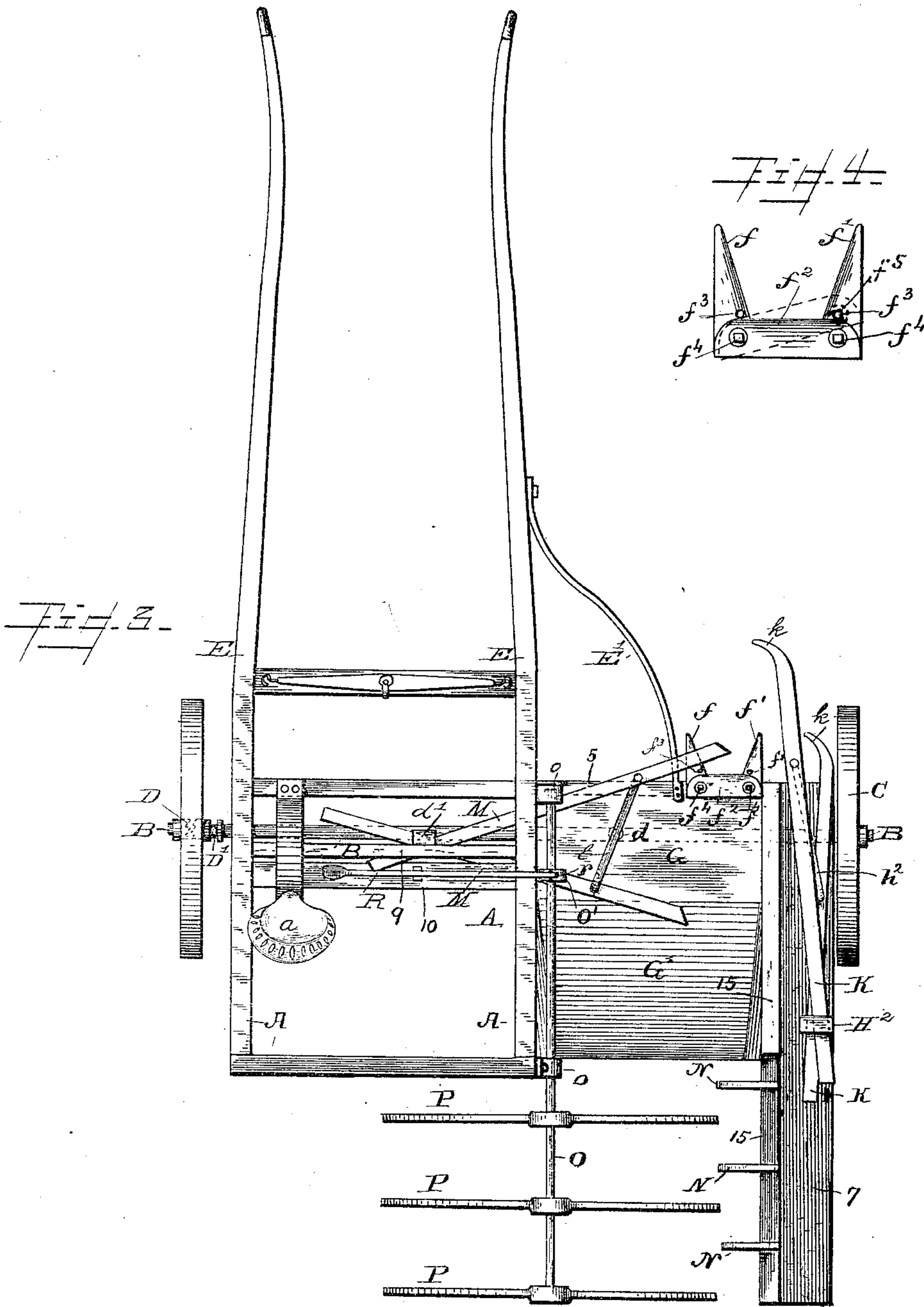
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WITNESSES

John Blackwood
E. J. Mendenhall

INVENTOR

Richard B. Robbins
by Frank W. Jones
his Attorney

UNITED STATES PATENT OFFICE.

RICHARD B. ROBBINS, OF ADRIAN, MICHIGAN.

CORN AND CANE HARVESTER.

SPECIFICATION forming part of Letters Patent No. 407,244, dated July 16, 1889.

Application filed May 12, 1888. Serial No. 273,682. (No model.)

To all whom it may concern:

Be it known that I, RICHARD B. ROBBINS, a citizen of the United States, residing at Adrian, in the county of Lenawee and State of Michigan, have invented certain new and useful Improvements in Corn and Cane Harvesters; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in corn and cane harvesters; and it consists in certain novelty in the construction and arrangement of the various parts, all of which I will now proceed to point out and describe, reference being had to the accompanying drawings, in which—

Figure 1 is an end elevation of a harvester embodying my invention; Fig. 2, a side elevation of the same; Fig. 3, a plan view; and Fig. 4 is a detail.

Referring to said drawings, the main frame of the machine is composed of side bars 2 and 3 and a central longitudinal bar 4, connected at their forward ends by a cross-bar 5. (Shown in dotted lines, Fig. 3.)

6 is a rear cross-bar connecting the bars 2 and 4.

7 is a timber secured to the top of the side bar 3 and extending back of the frame.

A is a rectangular frame mounted on uprights 8, secured to the bars 2 and 4. Said frame A is provided with cross-bars 9 and 10.

a is a seat-bar secured to the forward portion of the frame A, on which is mounted the driver's seat a'.

B is an axle loosely mounted in bearings b on the under side of the bars 2, 3, and 4.

C C are suitable supporting-wheels loosely mounted on the axle. One of said wheels is provided with a clutch D, one section of which is splined to the axle and is provided with an operating-lever D', located within convenient reach of the driver. By means of this lever the machine may be thrown in or out of gear as desired.

E E are shafts secured to the rectangular frame A. In the present instance they are formed as extensions of the side bars of said frame.

E' is a brace connecting the inner shaft with the front cross-bar 5 at a point near the cutter, and is arranged to equalize the side draft of the machine.

G is a receiving-table secured on and connecting the bars 3 and 4. Said table is located to one side of and below the level of the rectangular frame A. On said table the butts of the stalks rest when cut, as hereinafter described. The rear portion G' of said table is downwardly inclined. Said inclined part of the table may be hinged, so as to permit its adjustment at any desired inclination. The cutter is located at the outer forward corner of the receiving-table at the point where it is desired to have the same engage with the stalks, and it is composed of two independent blades f f', secured to and projecting in front of the receiving-table, so as to leave a space between said blades, which have diagonal cutting-edges approximate to each other, converging rearwardly and connected at their rear ends by an adjustable transverse blade f², having its cutting-edge projecting beyond the receiving-table. Said blades f f' are provided with two or more bolt-holes f³, and when the blade f² is adjusted parallel with the front edge of the table it is secured to the blades f f' by suitable bolts and nuts f⁴, which also serve to secure said blades f f' to the table. When it is desired to set the blade f² at a different angle—for instance, as shown in Fig. 4 in dotted lines—one bolt f⁴ is simply used to attach the blade f' to the table and another bolt f⁵ is used to attach the outer end of the blade f² to the blade f'. From this description it will be apparent that the cutting-edges of said blades can be adjusted at different angles to each other.

Secured to the timber 7 are uprights 12, 13, and 14, on which is secured a bar 15, said bar being substantially parallel with the inner side of the rectangular frame A and extending back of the rear end of the receiving-table. The uprights 12, 13, and 14 and bar 15 are shown in dotted lines in Fig. 2. To the upright 14 are secured bearings c, in which is mounted an upright hollow shaft II, carrying on its lower end a bevel-gear I, which engages with a bevel-gear I', rigidly mounted on the axle.

H' is a telescopic extension of the shaft H, secured to said shaft by a set-screw *h*. Said extension has formed on its upper end a double crank *h'* *h*², to which are pivotally secured gathering-arms K K, having inwardly-curved outer ends *k* *k*. The rear ends of said arms are mounted in a guide H², formed on the upper end of a standard H³, secured to the timber 7. When the axle is in gear with the wheels, the shaft H and its extension are rotated, and through the double crank of said extension impart an elliptical movement to the curved ends of the gathering-arms, causing them to pass alternately in front of and back over the cutter and thus gather the stalks toward said cutter. By means of the telescopic extension of the shaft H the gathering-arms may be raised or lowered to suit the height of the stalks.

L is a short vertical shaft mounted in a bearing *d*, formed in the receiving-table and carrying on its lower end a bevel-gear L', which engages with a bevel-gear L², rigidly mounted on the axle. On the upper end of the shaft L is formed a double crank *l* *l'*, to which is pivotally secured straight arms M M, the rear ends of which are mounted in a guide *d'*, formed on the lower end of a hanger *d*², secured to the cross-bar 9 of the frame A. As the shaft L is rotated, the outer ends of the arms M M are given an elliptical movement, passing alternately in front of and back over the cutter, thus engaging with the stalks and forcing them against said cutter. As said stalks are severed, they are carried back by the arms K and M onto the receiving-table, their butts resting on said table, until said stalks fall into the carrier, hereinafter described.

The extended portion of the bar 15, back of the receiving-table, is beveled on its inner side, and to said extended portion are secured downwardly-projecting inclined fingers N.

O is a horizontal shaft mounted in bearings *o*, secured to the inner side of the frame A. Said shaft is parallel with the bar 15 and extends back of said frame A. On the extended portion of the shaft O are secured two sets of oppositely-disposed curved fingers P. Said fingers form with the fingers N the bundle or gavel carrier.

o' is a ratchet on the shaft O.

R is a foot-lever fulcrumed on the cross-bar 10 and having on its end a pawl *r*, which engages with the ratchet *o'* and holds one set of fingers in position to co-operate with the fingers N to receive the stalks as they fall on said fingers P and N. When a sufficient quantity of stalks have accumulated to form a bundle or gavel, the driver pressing with his foot upon the lever R, releases the pawl from the ratchet and the weight of the bundle causes the shaft O to make a half-revolution and dump said bundle, the other set of fingers P on said shaft coming into position to receive the next bundle.

My machine is especially adapted for one

horse, as it can be made of very light weight. Of course by simply attaching a tongue, instead of the shafts, two horses may be used.

The construction of the cutter enables the cutting-edges of the knife-blades to be adjusted at any desired angle, and also prevents said cutter from becoming clogged. Should any one of the blades require sharpening, it may readily be removed, or a new blade may be substituted in its place.

My improved harvester is very light, is simple in its construction, can be manufactured cheaply, and thoroughly accomplishes the object for which it is constructed.

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

1. In a corn and cane harvester, the combination, with a main frame, a receiving-table secured on said frame, a stalk-cutter secured to and projecting in front of the receiving-table, an axle mounted in bearings on the frame, suitable wheels mounted on said axle, and a clutch connecting one of said wheels with the axle, of an upright hollow shaft mounted in suitable bearings and located to one side of and back of the cutter, and having a bevel-gear on its lower end engaging with a bevel-gear rigidly mounted on the axle, a telescopic extension mounted in the hollow shaft and provided with a double crank on its upper end, gathering-arms pivotally secured to said double crank, a suitable guide in which said arms rock, and a set-screw mounted in the upright hollow shaft and adapted to engage with the telescopic extension and secure it to the hollow shaft at any desired vertical adjustment, all constructed, arranged, and operating substantially as shown and described, whereby the forward ends of the gathering-arms will have an elliptical movement, passing alternately in front of and back over the cutter.

2. In a corn and cane harvester, the combination, with a main frame, a receiving-table secured on said frame, a stalk-cutter secured on and projecting in front of said receiving-table, an axle B, mounted in bearings on the frame, wheels C C, mounted on the axle, and a clutch D, connecting one of said wheels with said axle, of an upright hollow shaft H, mounted in suitable bearings and located to one side of and back of the cutter, and having a bevel-gear I on its lower end engaging with a bevel-gear I', rigidly mounted on the axle, a telescopic extension H', mounted in the hollow shaft and provided with a double crank on its upper end, a set-screw *h*, mounted in the hollow shaft and adapted to engage with the telescopic extension and secure it to said hollow shaft at the desired vertical adjustment, gathering-arms K K, pivotally secured to the double crank and working in a guide H², a short upright shaft L, mounted in a bearing in the receiving-table located back of and on the opposite side of the cutter from the shaft H, and having a double crank on its

upper end and a bevel-gear L' on its lower end engaging with a bevel-gear L^2 , rigidly mounted on the axle, and arms $M M$, pivotally secured to said double crank and working in a guide d' , all constructed, arranged, and operating substantially as shown and described.

3. In a corn and cane harvester, the combination, with a main frame, an elevated rectangular frame A , secured on suitable uprights, a receiving-table secured on said main frame to one side of and below the elevated frame, a cutter mounted on and projecting in front of the receiving-table, a bar 15, secured to suitable uprights on the outer side of the receiving-table, said bar being parallel with the inner side of the elevated frame and extending back of the receiving-table, and having inwardly and downwardly projecting fingers N formed on its extended portion, of a shaft O , mounted in bearings formed on the inner side of the elevated frame and extending back of said elevated frame parallel with the bar 15, and having two oppositely-disposed sets of curved fingers $P P$, secured to its extended portion, a ratchet o' , rigidly

mounted on said shaft O , a foot-lever R , having a pawl r , adapted to engage with the ratchet and alternately hold the oppositely-disposed sets of fingers $P P$ in position to cooperate with the fingers N to receive the stalks, all constructed, arranged, and operating substantially as shown and described.

4. In a corn and cane harvester, a main frame, a cutter comprising two blades secured to and projecting in front of the frame so as to leave a space between the blades, said blades having diagonal cutting-edges converging inwardly toward each other, and a transverse blade connecting the inner ends of the projecting blades and adjustably secured thereto, whereby its cutting-edge may be adjusted at different angles to the cutting-edges of said projecting blades, substantially as shown and described.

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

RICHARD B. ROBBINS.

Witnesses:

WM. B. THOMPSON,
E. N. SMITH.