No. 850,390.

PATENTED APR. 16, 1907.

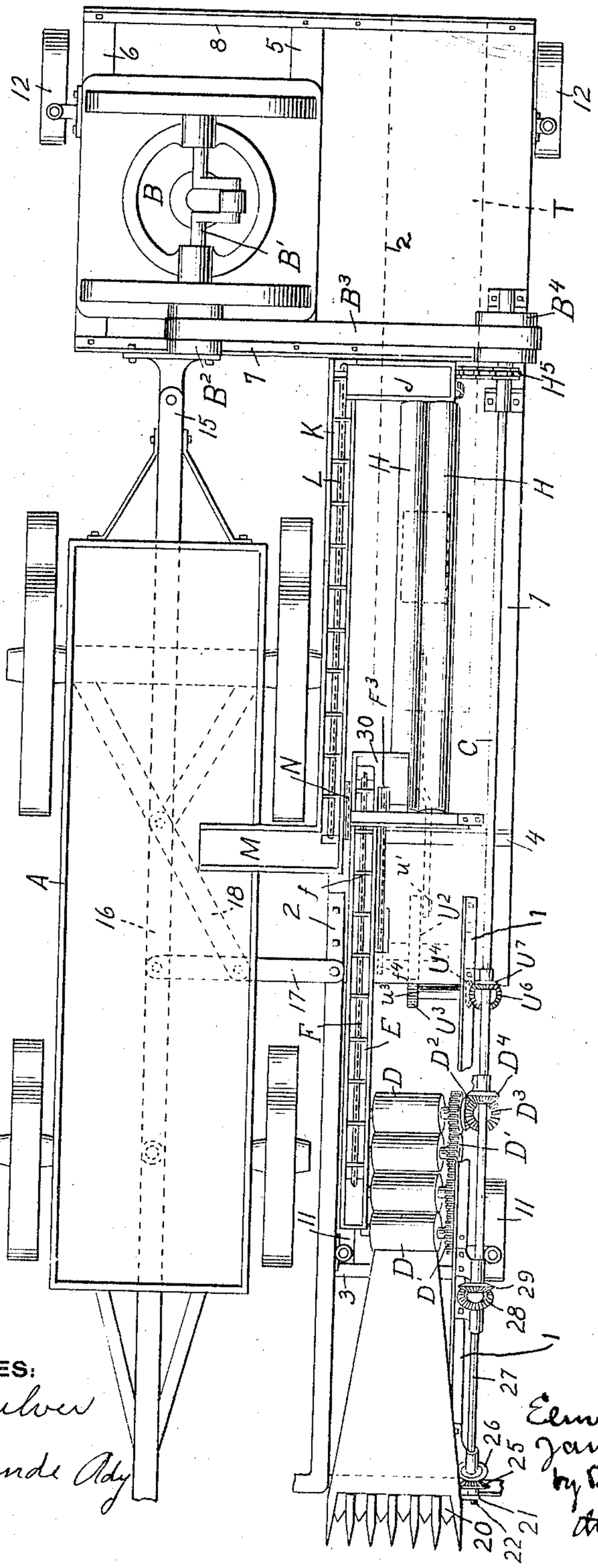
E. P. McCLURE & J. B. LOEWENSTEIN.

CORN GATHERING MACHINE.

APPLICATION FILED MAR. 10, 1906.

3 SHEETS—SHEET 1.

Fig. 1



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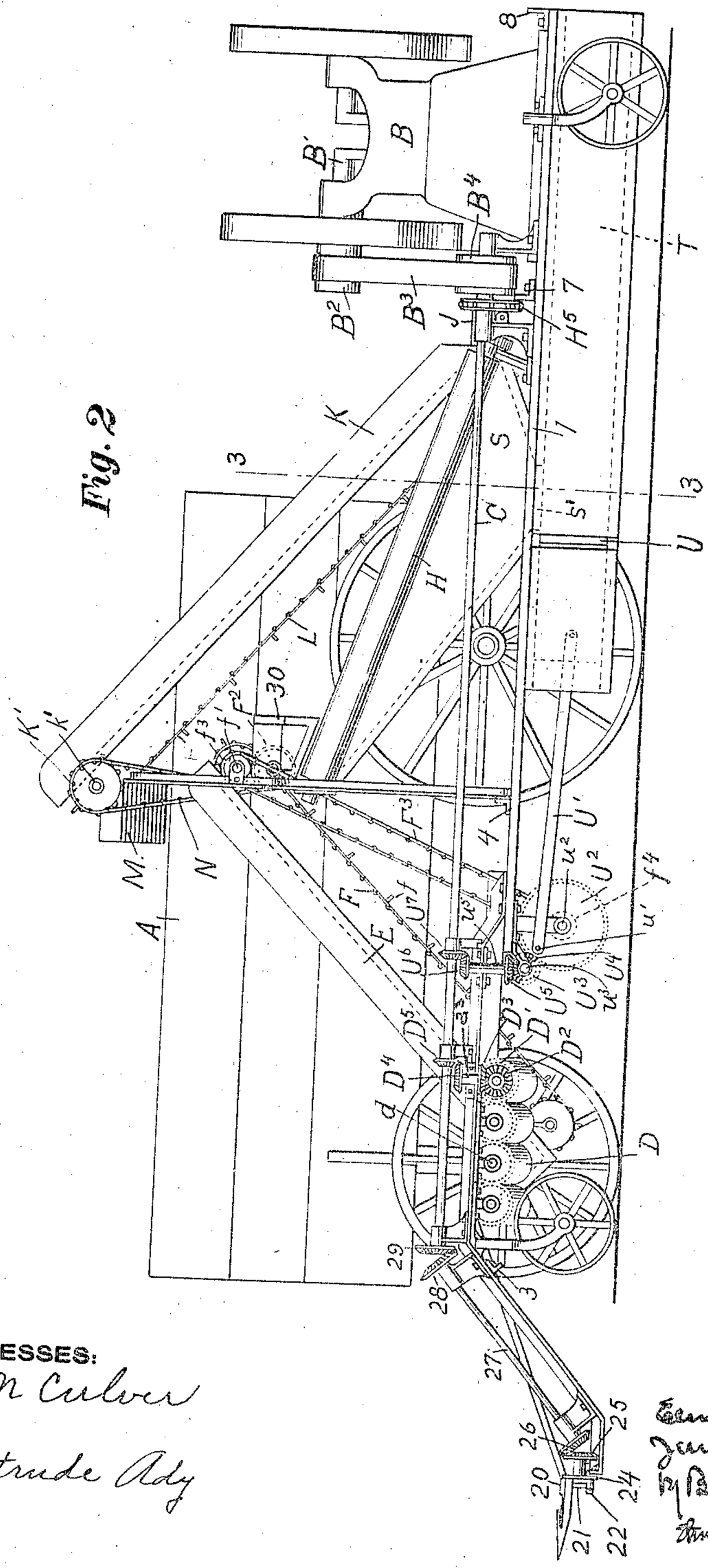
3 SHEETS—SHEET 2

Fig. 2



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3 SHEETS—SHEET 3.

Fig. 3

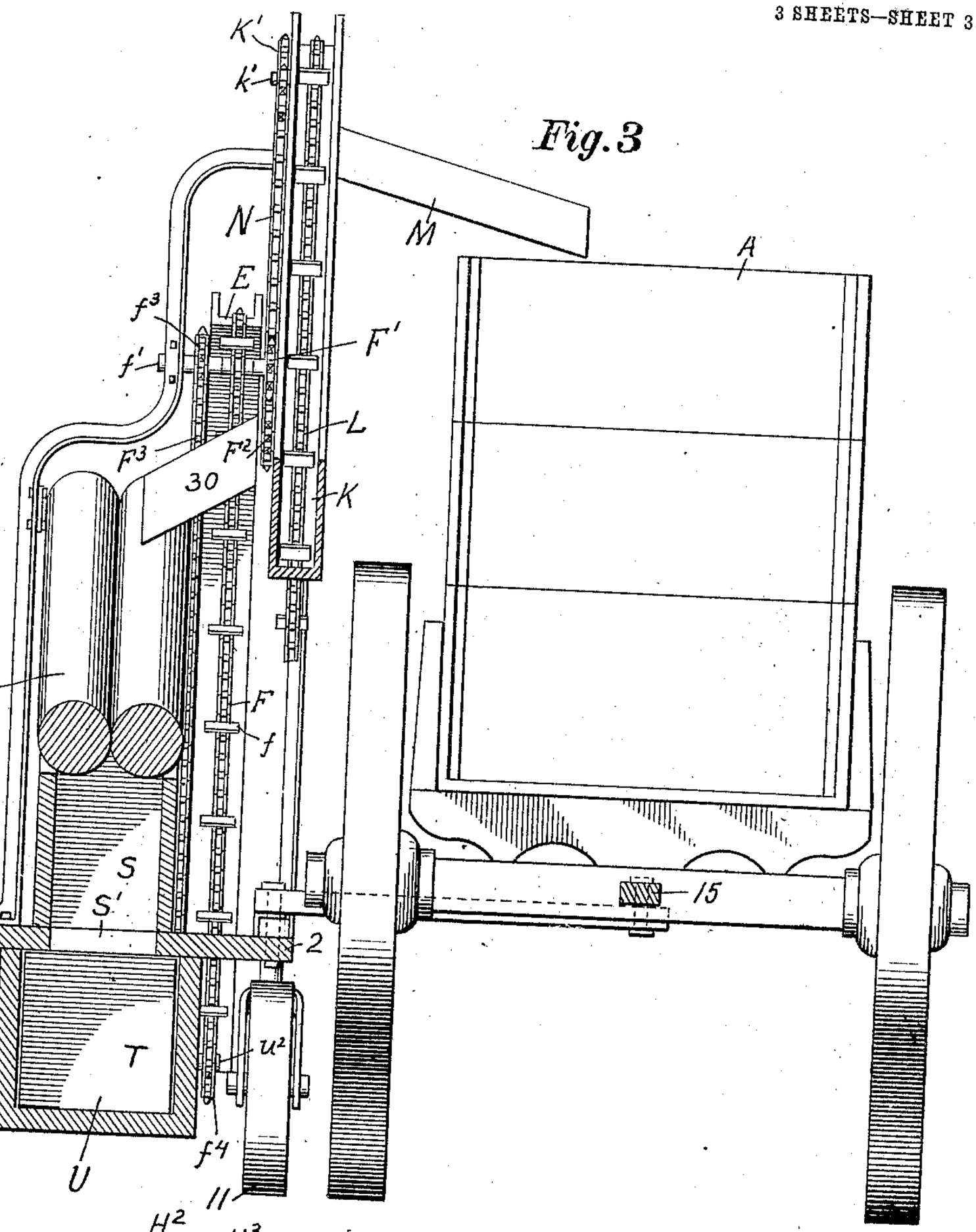
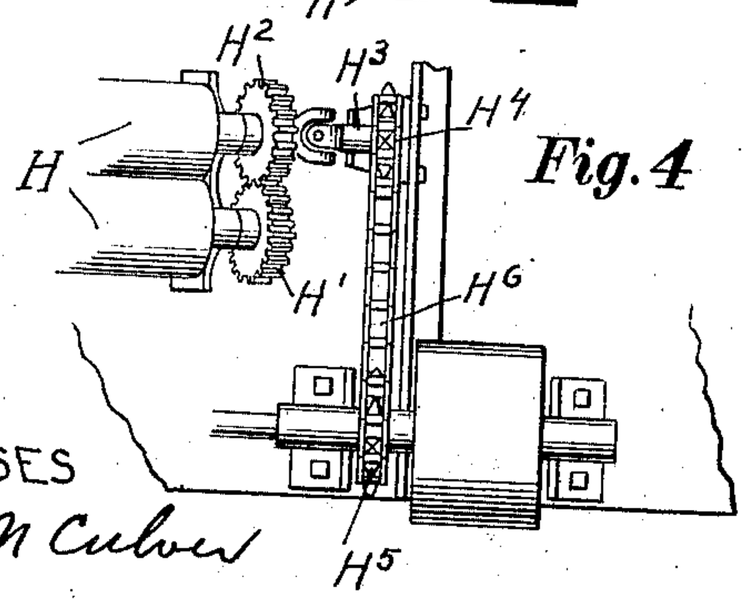


Fig. 4



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UNITED STATES PATENT OFFICE.

ELMER P. McCLURE, OF WESTERN SPRINGS, AND JAMES B. LOEWENSTEIN, OF CHICAGO, ILLINOIS.

CORN-GATHERING MACHINE.

No. 850,390. Specification of Letters Patent. Patented April 16, 1907.

Application filed March 10, 1906. Serial No. 305,255.

To all whom it may concern:

Be it known that we, ELMER P. McCLURE and JAMES B. LOEWENSTEIN, citizens of the United States, residing, respectively, at Western Springs, in the county of Cook and State of Illinois, and Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Corn-Gathering Machines, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

The purpose of this invention is to provide an improved machine for gathering corn, in which for the several processes performed separate suitable mechanisms may be carried by the frame of the machine and operated by power not derived from the traction of the carrying-wheels of the machine, but from a power generator or motor mounted on the frame, the machine being drawn through the field by any convenient means, also to provide for baling the husks in and by the machine by which they are stripped from the ears.

It consists of the features of construction and combinations of mechanism set out in the claims.

In the drawings, Figure 1 is a plan view of a machine embodying our invention. Fig. 2 is a grain-side elevation. Fig. 3 is a section at the line 3 3 on Fig. 2. Fig. 4 is a detail plan view of certain power-transmitting devices.

The structure shown in the drawings has a rigid frame comprising a long and relatively narrow fore-and-aft main portion consisting of suitable fore-and-aft bars 1 and 2, rigidly framed together by cross-bars 3 and 4 at convenient points intermediate the front and rear ends and a stubbleward offset portion comprising fore-and-aft bars 5 and 6 and transverse bars 7 and 8, rigidly uniting them to each other and to the fore-and-aft bars 1 and 2 of the longer fore-and-aft main portion of the frame. The frame is mounted on caster-wheels 11 11 at opposite sides of the forward end of the main portion and 12 12 at opposite sides of the rear end, one at the stubbleward side of the offset portion and the other at the extreme grainward side of the main fore-and-aft portion. All these wheels should preferably be caster-wheels, for the reason that the structure is designed to be attached to a wagon A, located at the stubbleward side of the main fore-and-aft portion of the frame and forward of the offset portion in the angle between the two, such wagon being designed to be drawn over the field by any convenient means and to constitute the means of propelling the machine over the field, the husked corn being delivered from the machine into the wagon as the work proceeds. The machine is attached to the wagon by a link or draw-bar 15, connected to the forward side of the offset rear portion of the machine-frame and to the rear end of the reach 16 of the wagon-frame and also by a bar or arm 17, extending off rigidly from the reach 16 and braced thereto by the brace-bar 18, said arm 17 being made fast at its grainward end to the stubbleward fore-and-aft bar 2 of the main frame. The entire rigid frame of the machine is thus connected for travel with the wagon-frame, and in turning corners or otherwise moving out of a straight path the wheels which support the machine-frame are necessarily adapted to accommodate themselves to a curved path of travel which requires caster construction.

On the main fore-and-aft frame there is mounted a mechanism for severing the stalks, a mechanism for detaching the ears from the stalks, a mechanism for separating the husks from the ears, and a mechanism for baling the husks. The particular construction of these several mechanisms is not claimed in this application, and such mechanisms are shown in conventional form with chief attention to their relative positions rather than to their specific details. All these mechanisms are driven by a motor B, which is conventionally shown in outline only, the drawing being intended to represent in such conventional way a gas-engine, on whose main crank-shaft B′ there is a pulley B^2, which actuates a belt B^3, passing around a pulley B^4 on the main power-shaft C, which is a fore-and-aft shaft mounted on the fore-and-aft main frame and extending to the several mechanisms mentioned for communicating power for driving them respectively.

The stalks are severed by a vibrating sickle 20, actuated by a pitman 21, connected to a crank 22 on the forward side of a crank-wheel 24, having rigid with it a beveled gear 25, meshing with a beveled gear 26 on the lower forward end of an inclined shaft 27 and at whose upper rear end there is fast a bev-

eled gear 28, which meshes with and is driven by a beveled gear 29 on the forward end of said main power-shaft C, suitable bearings for all the shafts mentioned being provided in any convenient way not requiring particular description on the main frame or parts extended therefrom. The stalks being severed by the sickle, are designed to move rearward relatively to the machine as the latter advances until their butt-ends pass over the transversely-extended and grainwardly-inclined picking-rolls D D D D, which are arranged in pairs, the two rolls of each pair revolving toward each other for carrying the stalks down between them and snapping off the ears on the upper side of the rolls, the ears descending along the inclined rolls stubbleward into a trough E, in which they are engaged by the carrying-fingers *f* of an endless carrier F.

The shafts *d* of the rolls D are geared together by equal gears D′ D′ D′ D′, mounted on the grainward end of said shafts, respectively, and intermeshing successively the shaft of the rearmost of said rolls having a beveled gear D^2 meshing with a beveled gear D^3 on the lower end of a counter-shaft concealed in a bearing d^3, at whose upper end said counter-shaft carries rigid with it a beveled gear D^4, which meshes with a beveled gear D^5 on the shaft C.

The endless carrier F delivers the ears over its upper end into a deflecting-spout 30, from which they are discharged upon the upper side of the husking-rolls H H, which are of familiar type and are mounted in inclined position extending from a point underhanging the said spout down rearward to a point a little forward of the belt B^3, where they are connected together by two intermeshing gears H′ and H^2 on their shafts, respectively. A short shaft H^3 in the vertical plane of the shaft of the stubbleward of the two husking-rolls (see Fig. 4) has a universal-joint connection with the shaft of said roll, and a sprocket-wheel H^4 on said shaft is driven by a chain H^6 from the sprocket-wheel H^5 on the shaft C for driving the husking-rolls.

At the lower end of the husking-rolls on the upper side thereof the ears, stripped of the husks, are received by a chute or spout J, (see Fig. 1,) which conducts them transversely stubbleward into a trough K, in which an endless carrier L operates to carry the ears up forwardly to the point above the upper end of the carrier F, where the ears are delivered into a transversely-extending delivering spout or chute M, which projecting stubbleward and extending downward overhangs the box of the wagon which receives the ears from said spout.

The two carriers F and K have their upper shafts *f′ k′*, respectively, provided with sprocket-wheels F′ K′, and a chain N, passing around the sprocket-wheel K′ and around a retaining-wheel F^2, is deflected inward about the sprocket-wheel F′, with which it is held in positive engagement by said retaining-wheel F^2, and thereby drives the wheel F′ in the opposite direction from the wheel K′, as is necessary for proper direction of travel of the carriers F and K. Power for driving both these carriers is derived from the shaft u^2, hereinafter described, by means of a chain F^3 passing about the sprocket-wheel f^4 on the shaft u^2 and around the sprocket-wheel f^3 on the shaft *f′*.

Underneath the husking-rolls H H a hopper S is arranged to receive the husks, said hopper having its ends converging to the mouth S′, through which the husks are delivered into a baling-chamber T, which extends horizontally underneath the main frame. A follower U operates in the baling-chamber, reciprocating from a point forward of the mouth S, past under said mouth to pack the husks as they are delivered into the rear portion of the baling-chamber. This follower is reciprocated by a pitman U′, connected to it and to a crank-wrist *u′* on a gear-wheel u^2, which is fast on a counter-shaft u^2, having suitable journal-bearings on the frame, said gear being meshed with a pinion U^3 on a counter-shaft u^3, which has also a beveled gear U^4 meshing with a beveled pinion U^5 on a vertical shaft u^5, at whose upper end there is a second beveled pinion U^6, meshing with a beveled gear U^7 on the shaft C.

The particular construction of the baling-chamber and details of means for securing and removing the bales are not designed to be claimed herein and are not fully shown nor further described.

We claim—

1. In a corn-gatherer, in combination with a frame having supporting-wheels and means for attaching it to draft appliances, stalk-cutting mechanism, ear-detaching mechanism and husking mechanism mounted on the frame successively one behind another; a motor mounted on the frame in the rear of all said other mechanisms, and a fore-and-aft power-shaft extending forward from the motor and operatively connected with said other mechanisms for driving them.

2. In a corn-gatherer, in combination with a frame having wheels on which it may be mounted for travel and means by which it may be attached to a wagon for drawing it over the ground, stalk-severing mechanism, ear-detaching mechanism and husking mechanism mounted on the frame one behind another, the frame having a portion offset stubblewardly from said detaching, severing and husking mechanisms, and a power-generator mounted on said offset portion.

3. In a corn-gatherer, in combination with a frame having wheels on which it is mounted for travel and means for attaching it to draft appliances, stalk-severing mechanism, ear-

picking mechanism, husking mechanism and husk-baling mechanism, all said mechanisms being mounted on the frame in the fore-and-aft path of the stalk-gathering devices, and a motor for driving all said mechanisms also mounted on the frame.

4. In a corn-gatherer, in combination with a frame having wheels on which it is mounted for travel and means by which it may be attached to a wagon for drawing it over the ground, stalk-severing mechanism, ear-detaching mechanism and husking mechanism mounted on the frame one behind another, the frame having a portion offset stubblewardly from the fore-and-aft line of said severing, detaching and husking mechanisms; a power-generator mounted on said offset portion, the means for attaching the wagon to the frame for drawing it being adapted for locating the wagon in the angle between said fore-and-aft portion and said offset portion of the frame directly forward of the motor-supporting portion thereof.

5. A corn-gathering machine comprising a frame provided with wheels for supporting it in travel, having a fore-and-aft extending portion and a stubblewardly-offset portion; stalk-severing, ear-detaching and husking mechanisms mounted one behind another on said fore-and-aft portion; a wagon located at the stubbleward side of said fore-and-aft portion and forward of the offset portion and means connected with both said portions for drawing the machine; a motor mounted on said offset portion of the frame operatively connected with the husking, picking and stalk-severing mechanisms, and means for delivering the ears from the husking mechanism to the wagon.

6. A corn-gathering machine comprising a frame having a fore-and-aft extending portion and a stubblewardly-offset portion at the rear end thereof; means for attaching a wagon to said frame in the angle forward of said offset portion and stubbleward of the fore-and-aft extending portion; stalk-severing, ear-detaching, husking and ear-delivering mechanisms, and a motor for driving them mounted on said frame, and caster-wheels on which said frame is carried during travel.

7. A corn-gathering machine comprising a rigid frame consisting of a fore-and-aft portion and a stubblewardly-offset portion at the rear thereof; means for attaching a wagon thereto for drawing it in the angle between said stubblewardly-offset portion and said fore-and-aft extending portion; a motor mounted on the stubblewardly-offset portion; ear-detaching and husking mechanisms mounted on the fore-and-aft extending portion; means for delivering the ears stubblewardly from the husking mechanism and connections from the motor for driving all said mechanisms.

In testimony whereof we have hereunto set our hands, at Chicago, Illinois, this 7th day of March, 1906.

ELMER P. McCLURE.
JAMES B. LOEWENSTEIN.

Witnesses:
CHAS. S. BURTON,
M. GERTRUDE ADY.