74. MACHINE ELEMENTS
AND MECHANISMS.

396

(No Model.) 2 Sheets—Sheet 1.

J. F. STEWARD.

HARVESTER GEARING.

No. 361,465. Patented Apr. 19, 1887.

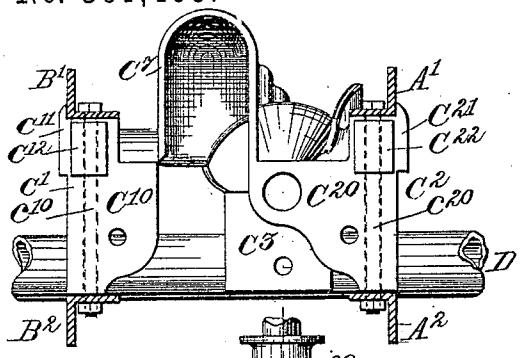


Fig. 2.

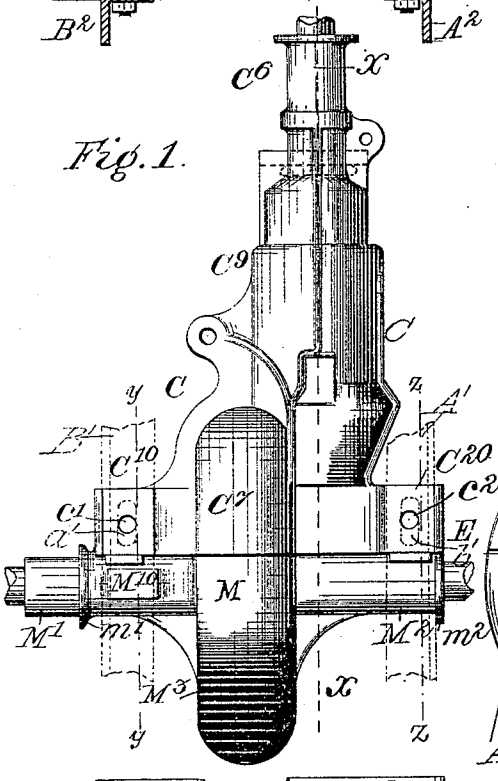


Fig. 1.

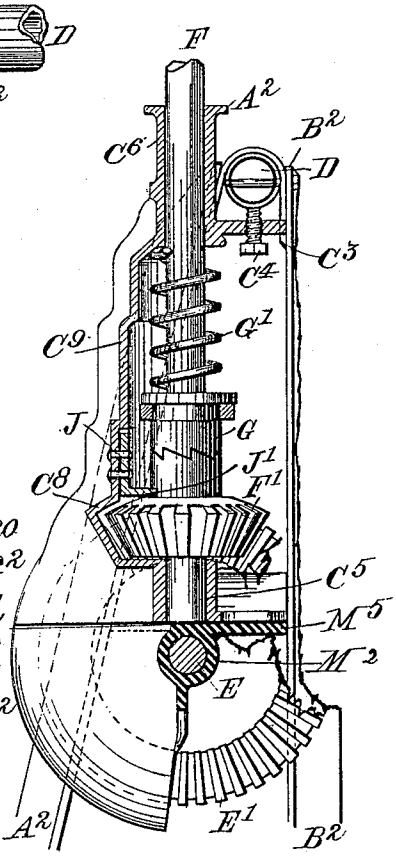


Fig. 4.

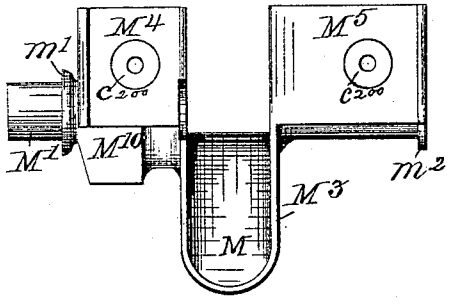


Fig. 3.

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Inventor:
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by Chas. D. Burton
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N. PETERS. Photo-Lithographer. Washington, D. C

74. MACHINE ELEMENTS AND MECHANISMS.

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Fig. 5.

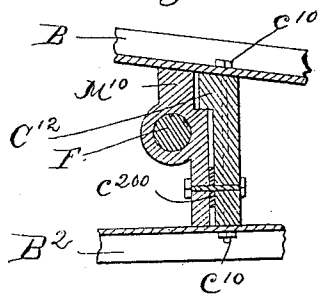
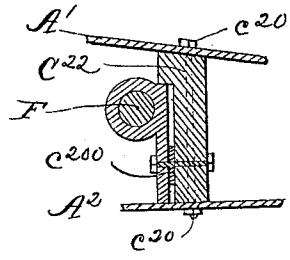


Fig. 6.



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UNITED STATES PATENT OFFICE.

JOHN F. STEWARD, OF CHICAGO, ILLINOIS.

HARVESTER-GEARING.

SPECIFICATION forming part of Letters Patent No. 361,465, dated April 19, 1887.

Application filed July 28, 1886. Serial No. 209,340. (No model.)

To all whom it may concern:

Be it known that I, JOHN F. STEWARD, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Harvester-Gearing, which are fully set forth in the following specification, reference being had to the accompanying drawings, forming a part thereof.

This invention relates to the frame in which the main gearing of a harvester is journaled; and it consists in forming such frame so that it shall serve as a cover or case to protect the gearing from straw and dirt, and so that each of the shaft-bearings in said frame shall be wholly in one piece of it, in order that as said bearings become worn separate pieces of the frame may be replaced to accommodate the separate shafts without replacing the entire frame.

In the drawings, Figure 1 is a plan of the gearing-frame and case. Fig. 2 is an elevation of the forward piece of said frame as seen looking at its rear end, showing also its connection to the harvester-frame. Fig. 3 is an inverted elevation of the rear piece. Fig. 4 is a section through X X, Fig. 1. Fig. 5 is a section at the line Y Y on Fig. 1; and Fig. 6 a section at the line Z Z on Fig. 1.

A′ and B′ are the upper bars, A^2 and B^2 are the lower bars, of two trusses of the main frame. C is one portion of the gearing-frame. It is formed to furnish struts for both trusses, and for that purpose has the upright posts C′ and C^2, which fit between the upper and lower bars of said trusses, respectively. At the upper ends said posts merge in the pads C^{10} and C^{20}, respectively, which bear against the under surfaces of the upper bars of said trusses. Through the entire length of the posts C′ and C^2 are formed the bolt-holes c' and c^2, through which are inserted the bolts c^{10} and c^{20}, which pass also through the horizontal flanges of the angle-irons which form the upper and lower bars, A′ B′ and A^2 B^2, of the trusses, and are fitted with suitable nuts exterior thereto, thus securing the part C of the gearing-frame firmly to the trusses.

The part C′ of the gearing-frame extends rearward over the rear sill, D, and obtains support upon it. For a purpose hereinafter explained, it is provided directly in front of the rear sill with a depending lip or flange, C^3, through which the adjusting-screw C^4 is screwed against the forward side of the rear sill, D. The remaining parts of the portion C of the gearing-frame are the journal-boxes C^5 and C^6, for the sickle crank-shaft F, the former at the forward end and the latter at the rear end of said portion C; the cylindrical quadrantal shell C^7, which covers the rear part of the bevel gear-wheel E′, which is fixed on the main driving-pinion shaft E, journaled as hereinafter explained; the shell C^8, which covers the bevel-pinion F′ on the sickle crank-shaft F, and the remaining portion of the shell C^9 covering the clutch G and its spring G′ on the inner side of the portion C^9. Immediately rearward of the bevel-pinion F′ there is secured the angle-guard J, whose depending lip J′ projects down behind said pinion to keep it in mesh with the bevel gear-wheel E′.

M is the forward portion of the gearing frame and case. It comprises the bearings M′ and M^2 for the main driving-pinion shaft E, the quadrantal hood or case M^3, to cover the forward portion of the bevel gear-wheel E′, and the two vertical flanges or pads M^4 and M^5, which abut face to face against the flanges C^{10} and C^{20}, respectively, of the rear frame, C, all said flanges being provided with bolt-holes, through which may be inserted suitable clamping-bolts to bind the two parts of the gearing-frame rigidly together.

It will be observed that of the two shafts E and F, which are journaled in the gearing-frame made up of the parts C and M, one has its bearings wholly in one of said parts of the frame and the other has its bearings wholly in the other part. Whenever, therefore, the journal-boxes in either part become worn, that part only need be replaced; also, that by reason of the same feature of construction, whenever, by reason of wear or for any other cause, it becomes necessary to adjust the gear-wheels E′ and F′, to cause them to mesh more or less closely, such adjustment may be effected by adjusting the two parts of said frame to each other. In order to permit this latter adjustment, the pads M^4 and M^5 may be separated from the pads C^{10} and C^{20}, respectively, when the machine is first put together, by thin

washers C^{200}, placed on the clamping-bolts, one or more of which may be removed when it is necessary to adjust the gear-wheels into closer mesh. In order that such adjustment may not interfere with proper meshing of other wheels on the shaft E with their driving-wheels not journaled in the gearing-frame, the part C of the gearing-frame is adapted to be adjusted toward the part M.

The bolt-holes a' and b', through the horizontal lips of the truss-bars, are slightly elongated to allow the necessary movement; and when the necessary number of washers are removed the bolts c^{10} and c^{20}, having their nuts loosened, the adjusting-screw C^4 is screwed against the sill D, and the part C′ of the gearing-frame is thus forced forward until the bevel-pinion F′ is properly meshed with its driving-gear wheel E′, and the several clamping-bolts are again tightened.

In order that the part M may not be crowded or permitted to slip laterally while the part C is being adjusted longitudinally, and so defeat the purpose of said longitudinal adjustment, the pads M^4 and M^5 are provided with flanges m' and m^2, which engage outside the pads C^{10} and C^{20}; and said latter pads have similar flanges, C^{11} and C^{21}, which engage outside the truss-bars B′ and A′, respectively, thereby preventing any lateral displacement of the said parts C and M relatively to each other or to the truss-bars. To prevent vertical displacement, the flanges m' and m^2 project under the lower edges of the flanges C^{11} and C^{21}, and the pads C^{10} and C^{20} have projecting from their faces, respectively, the rectangular bosses C^{12} and C^{22}, which project over the upper edges of the pads M^4 and M^5, and from the upper side of the bearing M′ projects the boss M^{10} to the under surface of the upper truss-bar, B′.

I claim—

1. A gearing-frame composed of two separable parts having the bearings for the primal shaft wholly in one part and the bearings for the secondary shaft wholly in the other part, and having formed integral with each part a portion of a gearing-case, said portions matched to form a continuous cover when the two parts of the frame are joined, substantially as set forth.

2. A gearing-frame and cover having bearings for two shafts at right angles, divided, and having the bearings for one of the shafts wholly in one part and the bearings for the other shaft wholly in the other part, and having its parts secured together at a plane parallel to one of the shafts and located between said shaft and the nearest bearing of the other, substantially as set forth.

3. A gearing-frame and cover composed of two separable parts, the bearings for the primal shaft being wholly in one part and the bearings of the secondary shaft being wholly in the other part, also means, substantially as described, for adjustably securing said frames together.

4. In combination, substantially as set forth, the partial gearing-frame C, having bearings for one shaft, the truss-bars and the rear sill, D, of the harvester-frame, and the adjusting-screw C^4, set through a flange on the partial frame C, against the rear sill, for the purpose of adjusting said partial frame.

In testimony whereof I have hereunto set my hand, this 9th day of July, A. D. 1886, in the presence of two witnesses, at Chicago, Illinois.

JOHN F. STEWARD.

Witnesses:
BURR A. KENNEDY,
H. J. NEEL.