(No Model.)

2 Sheets—Sheet 1.

J. MACPHAIL.

HORSE HAY RAKE.

No. 470,300. Patented Mar. 8, 1892.

Fig. 1.

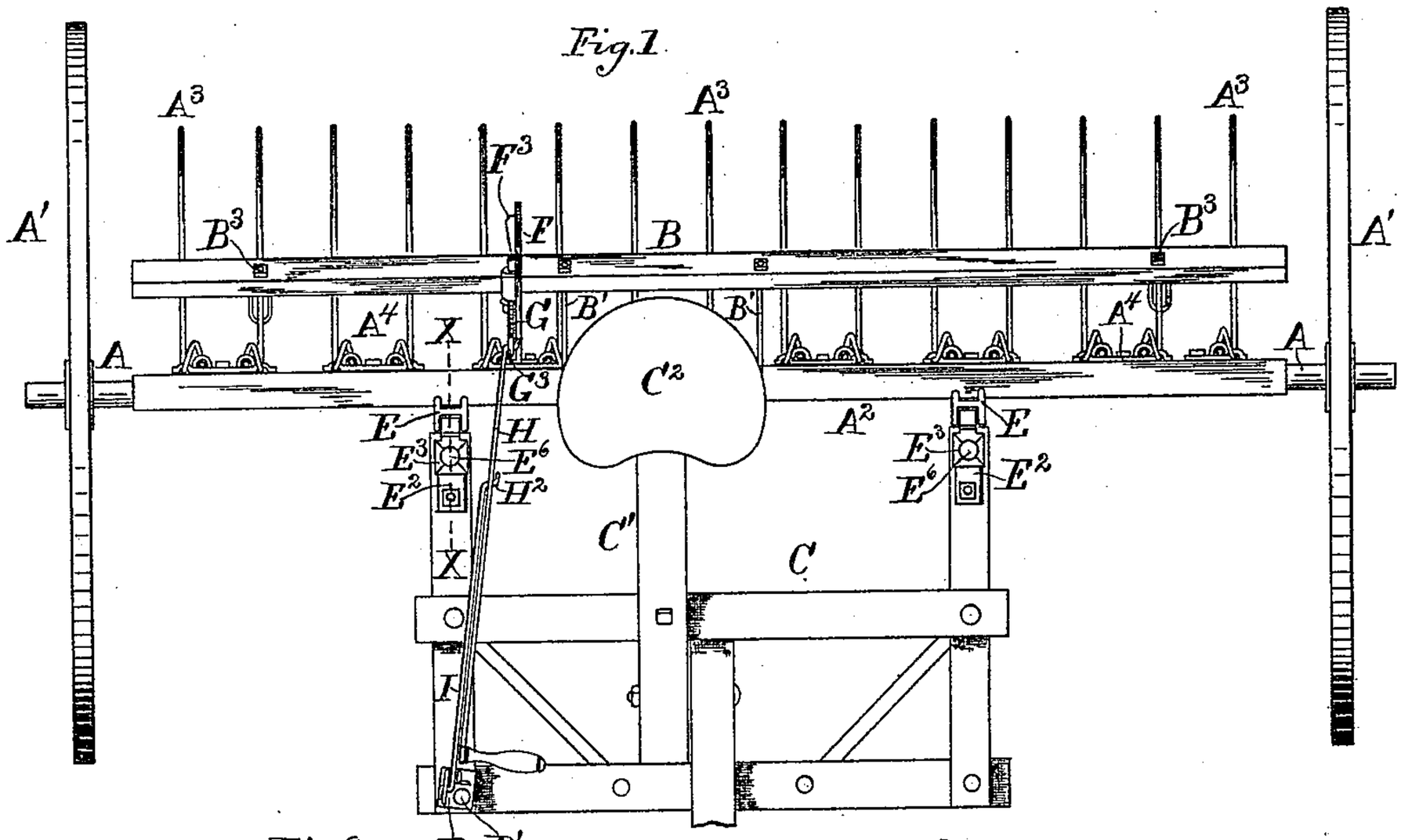


Fig. 8.

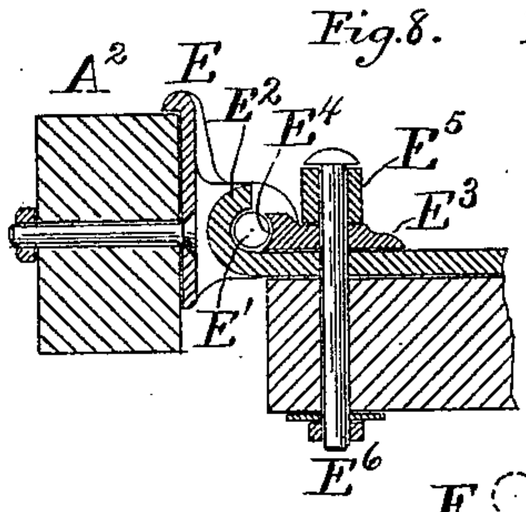


Fig. 9.

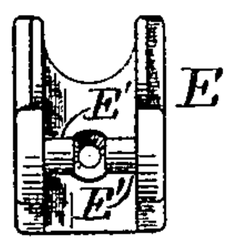
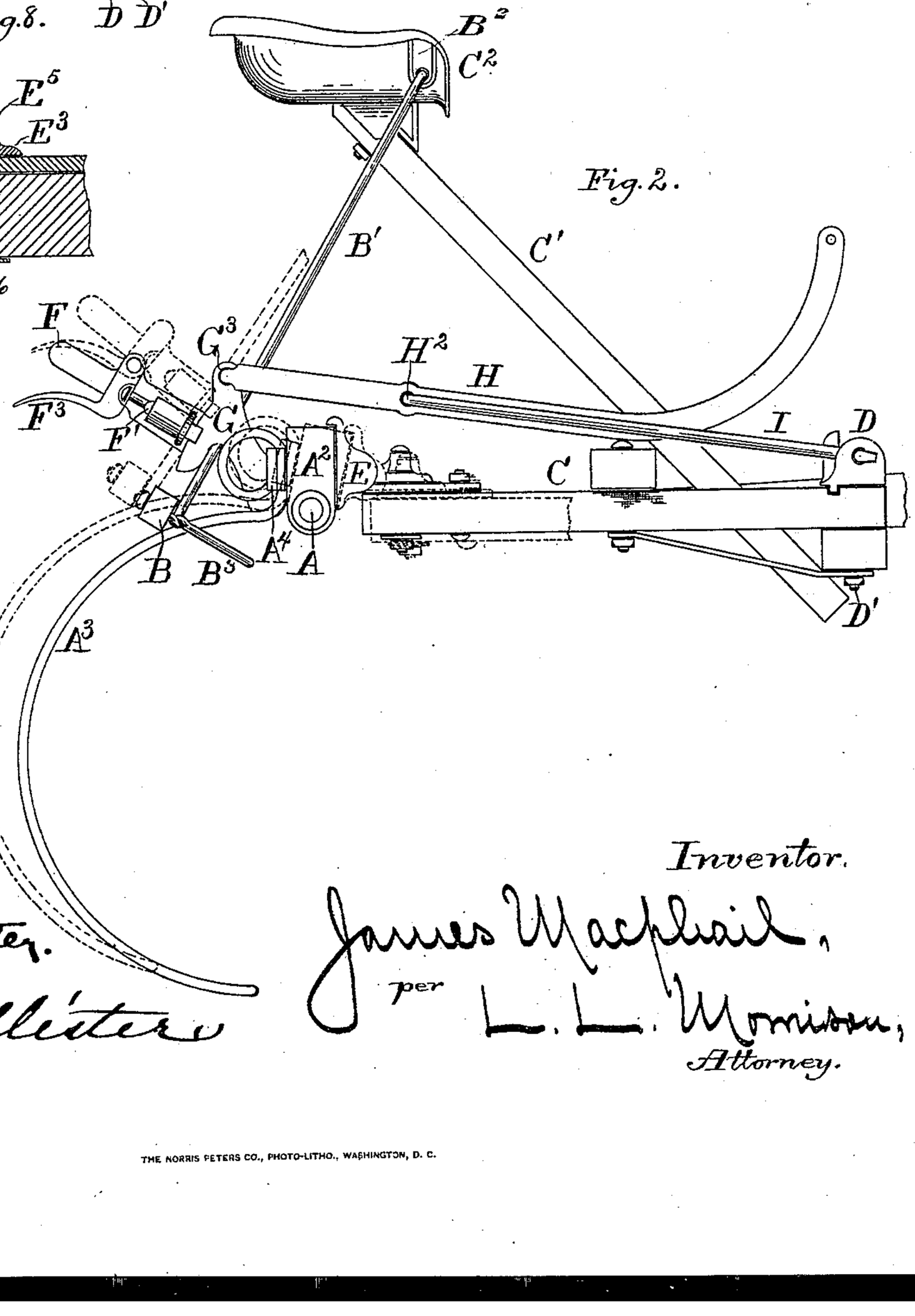


Fig. 2.



Witnesses:

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(No Model.)

2 Sheets—Sheet 2.

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HORSE HAY RAKE.

No. 470,300. Patented Mar. 8, 1892.

Fig. 6.

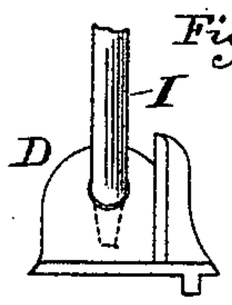


Fig. 3.

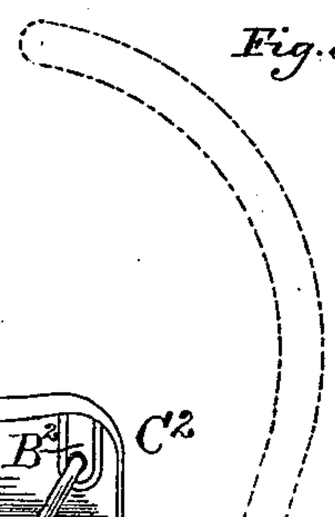
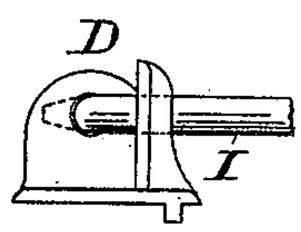


Fig. 7.



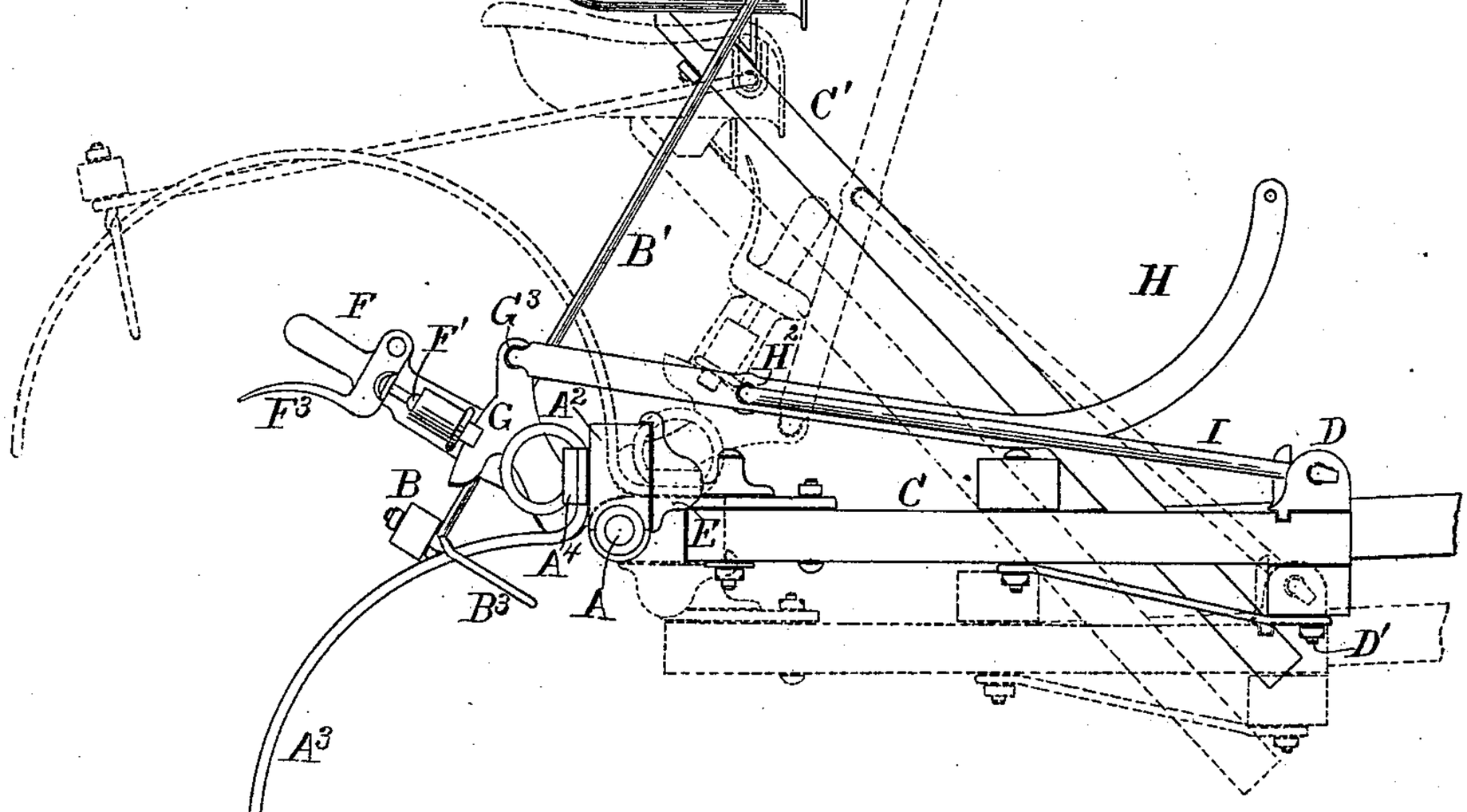


Fig. 4.

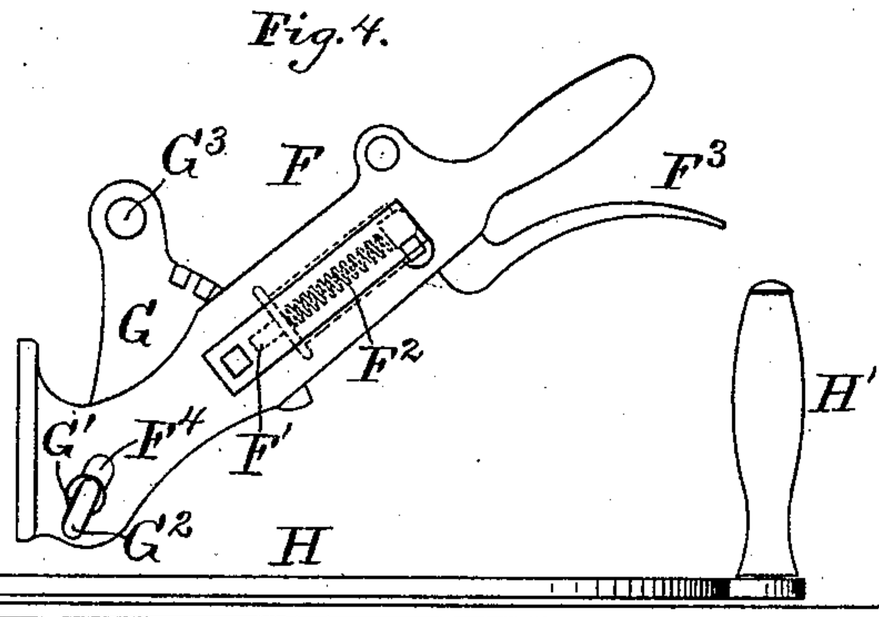
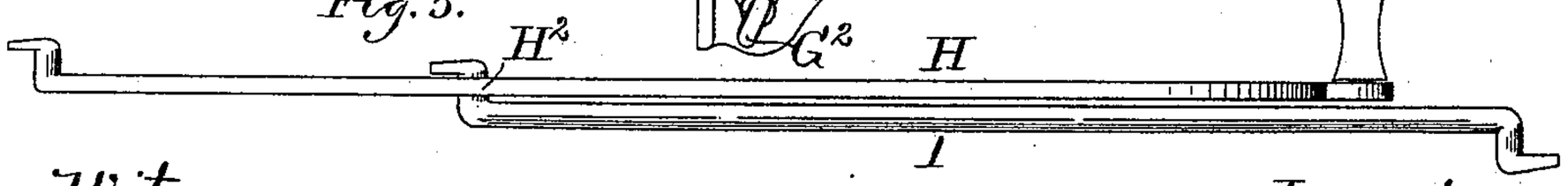


Fig. 5.



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UNITED STATES PATENT OFFICE.

JAMES MACPHAIL, OF ROCKFORD, ILLINOIS.

HORSE HAY-RAKE.

SPECIFICATION forming part of Letters Patent No. 470,300, dated March 8, 1892.

Application filed July 20, 1889. Serial No. 318,175. (No model.)

To all whom it may concern:

Be it known that I, JAMES MACPHAIL, a citizen of the United States, residing at Rockford, in the county of Winnebago and State of Illinois, have invented certain new and useful Improvements in Horse Hay-Rakes, of which the following is a specification.

The principal objects of this invention are to provide convenient and effective means of tilting the rake-teeth to pass obstructions while the rake is in operation and to dump the hay raked thereby at desired intervals into windrows.

This invention consists of certain new and useful features of construction and combination of parts hereinafter described, and pointed out in the claims.

Referring to the accompanying drawings, which form a part of this specification, Figure 1 is a plan view of a rake provided with my improvements. Fig. 2 is a side elevation of the rake with the wheels removed, in which the tilting movement of the teeth and the movements of the parts producing the same are indicated by dotted lines. Fig. 3 is a like view of the same, in which the dumping movement of the rake and operation of the parts producing and participating in the same are indicated by dotted lines. Fig. 4 is a rear elevation of the tilting-lever and segment-rack. Fig. 5 is a plan view of the dumping-lever and connecting-link. Figs. 6 and 7 are detailed views of a hinge-block, showing the connection therewith of the connecting-link. Fig. 8 is a view of a vertical section at the dotted line X X of Fig. 1 of the hinge connection between the head and frame of the rake. Fig. 9 is a front elevation of a component part of the latter.

Like letters of reference indicate corresponding parts throughout the several views.

A is an axle-tree having wheels A′ mounted thereon in the usual manner.

A^2 is a rocking rake-head rigidly connected with the axletree A.

A^3 are rake-teeth of the usual form, and are attached to the rake-head A^2 by means of the holders A^4 or in any other suitable manner.

B is the discharge-head of the rake, which is suspended from the seat thereof by means of rods B′, which are pivotally connected at their upper ends with lugs B^2, depending from the seat and rigidly secured at their lower ends to the discharge-head.

B^3 are discharge-teeth set into the discharge-head B, which serve to discharge a raking of hay from the teeth A^3 at each dumping of the rake.

C is the rake-frame, which is hinge-jointed to the rake-head A^2 by means of parts to be described hereinafter.

C′ is the seat-standard, fast at the lower end to the rake-frame C and provided at the upper end with a seat C^2.

D is a hinge-block secured to the rake-frame C by means of a bolt D′.

E is a hinge-plate provided with two pintles E′, integral therewith and bolted to the rake-head A^2.

E^2 is hook engaging with the pintles E′ of the hinge-plate E and bolted to the rake-frame C.

E^3 is a binding-plate having a curved depression E^4 in one end thereof to admit a portion of the pintles E′.

E^5 E^6 are a washer and bolt for securing the binding-plate E^3 to the hook E^2. The washer E^5 may be integral with the binding-plate E^3, if desired. The heads of the bolts E^6 and the washers E^5 serve as stops for the hinge-plates E and rake-head A^2 when the rake is dumped.

F is a tilting-lever secured by one end thereof to the rake-head A^2 and provided with a detent F′, actuated by a spring F^2.

F^3 is a detent-lever for disengaging the detent F′ from its segment-rack, to be described.

G is a segment-rack pivotally mounted on the tilting-lever F and adapted to engage the detent F′. The pivot G′ is preferably integral with the segment-rack G, and is retained in position in its bearing in the tilting-lever F by means of a lug G^2, which passes through the slot F^4 in the tilting-lever F at the same time the pivot G′ is inserted into its bearing.

H is a dumping-lever pivotally connected by one end thereof with the segment-rack G through an eye G^3 therein. H′ is a handle for operating the same.

I is a connecting-link, pivot-jointed at one end to the dumping-lever H at any suitable point, as at H^2, between the ends thereof, and at the other end to the frame C by means of the hinge-block D or in any other suitable manner.

Obviously a reverse construction or arrangement of the segment-rack, tilting-lever, dumping-lever, and connecting-link might be resorted to without departing from the evident spirit and scope of my invention; also, the segment-rack might be pivoted to a lug or other device secured to the rake-head at additional expense, however, without interfering with the successful operation of the rake or departing from the clear purview of my invention.

In order to tilt the rake-teeth to pass obstructions or to prevent the same from coming in contact with the earth while the rake is moving, but not in operation, the operator, reaching down from the seat, grasps the tilting-lever F and detent-lever F^3, and after releasing the detent lifts the tilting-lever F, as and with the results indicated by the dotted lines in Fig. 2. To dump the rake, the operator grasps the handle H′ and lifts it, as and with the results indicated by the dotted lines in Fig. 3.

I claim—

1. In combination, a tilting-lever secured by one end thereof to the rake-head and provided with a spring-actuated detent, a segment-rack pivotally mounted on the tilting-lever and adapted to engage the detent, a dumping-lever pivotally connected by one end thereof with the segment-rack, and a connecting-link pivot-jointed at one end to the dumping-lever at any suitable point between the ends thereof and at the other end to the frame of the rake, substantially as and for the purpose specified.

2. In combination, the hinge-plate E, provided with pintles E′, the connecting-hook E^2, the binding-plate E^3, and suitable means for securing said parts operatively together, substantially as and for the purpose set forth.

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