(No Model.) 2 Sheets—Sheet 1.

C. M. GATES.

HAY LOADER.

No. 513,996. Patented Feb. 6, 1894.

Fig. 3.

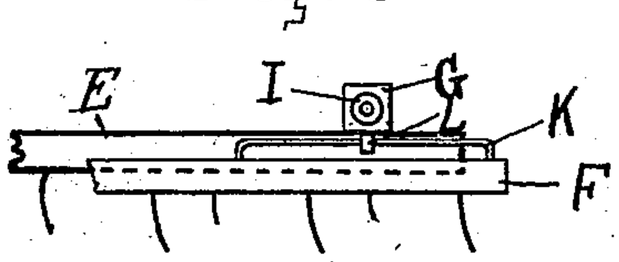
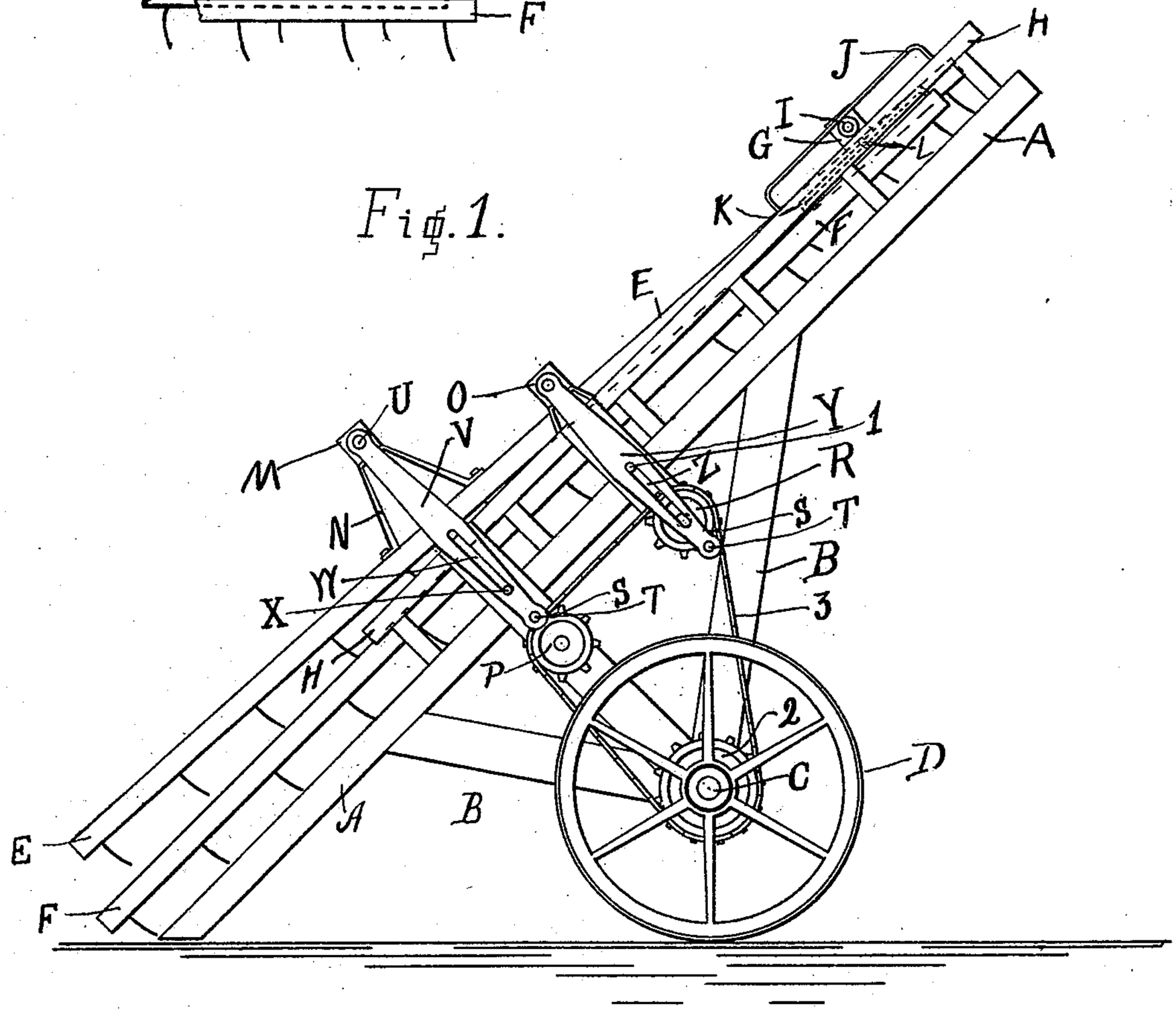


Fig. 1.



WITNESSES:
A. M. Hood,
F. B. Stratford

INVENTOR
Charles M. Gates
BY
H. P. Hood.
ATTORNEY.

THE NATIONAL LITHOGRAPHING COMPANY,
WASHINGTON, D. C.

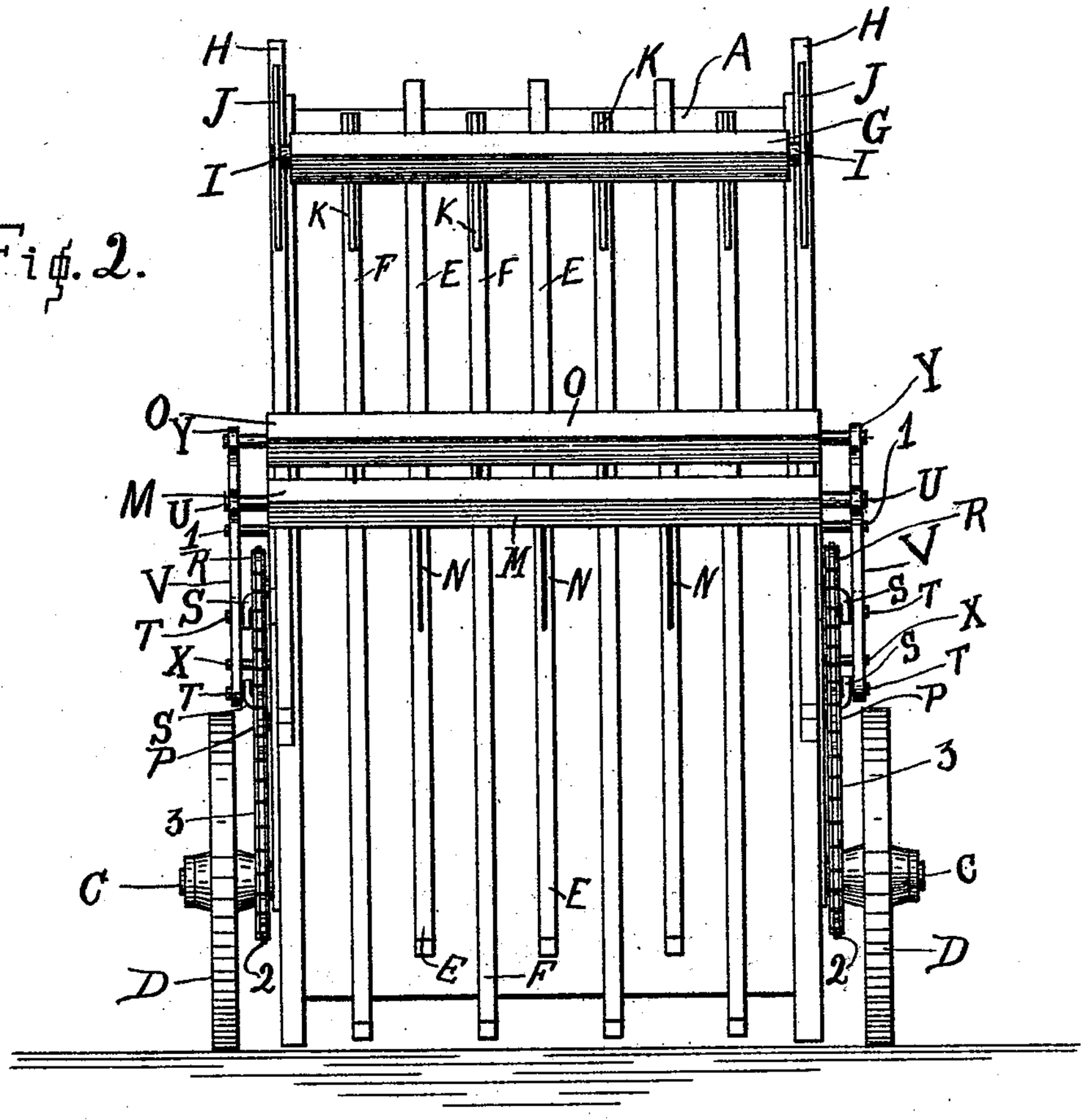
(No Model.) 2 Sheets—Sheet 2.

C. M. GATES.

HAY LOADER.

No. 513,996. Patented Feb. 6, 1894.

Fig. 2.



WITNESSES:

A. M. Hood.
F. B. Stafford

INVENTOR
Charles M. Gates
BY
H. P. Hood.
ATTORNEY.

THE NATIONAL LITHOGRAPHING COMPANY,
WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

CHARLES M. GATES, OF LA SALLE, ILLINOIS, ASSIGNOR OF ONE-HALF TO JOSIAH C. SMALLEY, OF LAFAYETTE, INDIANA.

HAY-LOADER.

SPECIFICATION forming part of Letters Patent No. 513,996, dated February 6, 1894.

Application filed June 28, 1893. Serial No. 479,009. (No model.)

To all whom it may concern:

Be it known that I, CHARLES M. GATES, a citizen of the United States, residing at La Salle, in the county of La Salle and State of Illinois, have invented a new and useful Improvement in Hay-Loaders, of which the following is a specification.

My invention relates to an improvement in hay-loaders.

The object of my invention is, to provide improved means for operating the rake-bars.

The accompanying drawings illustrate my invention.

Figure 1 represents a side elevation. Fig. 2 represents a rear elevation. Fig. 3 represents a section at —*a*— Fig. 1.

In the drawings, A, indicates an inclined platform which is mounted by means of a suitable frame-work, B, on an axle, C, which is provided with a pair of carrying-wheels, D, D, which are secured to the axle so as to revolve therewith.

Two sets of rake-bars, E, and F, arranged alternately, are mounted upon the platform A so as to have a longitudinal reciprocating and vertically vibrating movement thereon.

The upper ends of rake-bars E, are rigidly secured to the under side of a cross-bar, G, the ends of which rest and slide upon ways, H, H, erected at the opposite edges of the platform, the ends of the cross-bar being provided with pivots, I, I, which project beneath raised guide-bars, J, J, secured to the ways, H, H.

The rake-bars F are suspended at their upper ends from the cross-bar G, so as to have a longitudinal sliding motion thereon, by means of rods, K, which slide in eyes, L, secured to the under side of the cross-bar and are bent downward at the ends and secured to the upper edges of the rake-bars, as shown in Fig. 3.

The lower ends of the rake-bars E are rigidly connected together by means of a cross-bar, M, which is secured to the upper edge of each of said rake-bars by means of a bracket, N. The intermediate parts of the rake-bars F, are secured together in a similar manner by means of a cross-bar, O.

A pair of sprocket-wheels, P, and R, are mounted upon each side of the main-frame upon studs projecting therefrom, each of said sprocket-wheels being provided with a crank-arm, S, and a wrist-pin T. The wrist-pins of sprocket-wheels P, are connected with journals, U, U, projecting from the opposite ends of cross-bar M, by means of connecting-rods V, V, each of which is provided with a longitudinal slot, W, into which a pin, X, projects from the side of the main-frame. The wrist-pins of sprocket-wheels R, are connected in like manner with the ends of cross-bar O, by means of connecting-rods, Y, Y, each having a longitudinal slot, Z, which engages a pin, 1, projecting from the side of the main-frame.

The sprocket-wheels P, and R, are rotated during the movement of the carrying-wheels D, by means of sprocket-wheels, 2, 2, secured to the axle C, and chain-belts 3, 3, passing over said sprocket-wheel.

In operation, the connecting-rods Y, V, operate as levers having shifting fulcrums, to convert the rotary movement of the sprocket-wheels P, and R into a vertically vibrating and longitudinally reciprocating movement of the rake-bars E, and F, whereby the material is raked from the ground upon and is elevated along the platform, A; the two sets of rake-bars moving simultaneously in opposite directions.

I claim as my invention—

1. In a hay-loader, the main-frame, the series of rake-bars loosely attached at one end to said frame so as to slide thereon, the cross-bar connecting the lower ends of said rake-bars, the pair of sprocket-wheels each provided with a wrist-pin and revolubly mounted on opposite sides of the main-frame, the longitudinally slotted connecting-rods, the pins projecting from the main-frame and engaging the slots in the connecting-rods, carrying-wheels arranged to support the main-frame, and intermediate connecting mechanism con-

necting the carrying-wheels and the sprocket-wheels whereby the sprocket-wheels are rotated by the rotation of the carrying-wheels, all combined and arranged to co-operate in the manner and for the purpose set forth.

2. In a hay-loader, the combination of the main-frame, the cross-bar G mounted so as to slide thereon, the series of rake-bars rigidly secured to said cross-bar, the rake-bars suspended from said cross-bar so as to slide longitudinally thereon substantially as set forth, and means for imparting a reciprocating movement in opposite directions to the two sets of rake-bars, substantially as set forth.

CHARLES M. GATES.

Witnesses:
ADAM O. BEHM,
G. C. JONES,
FREDK. O. EVANS.