

(No Model.)

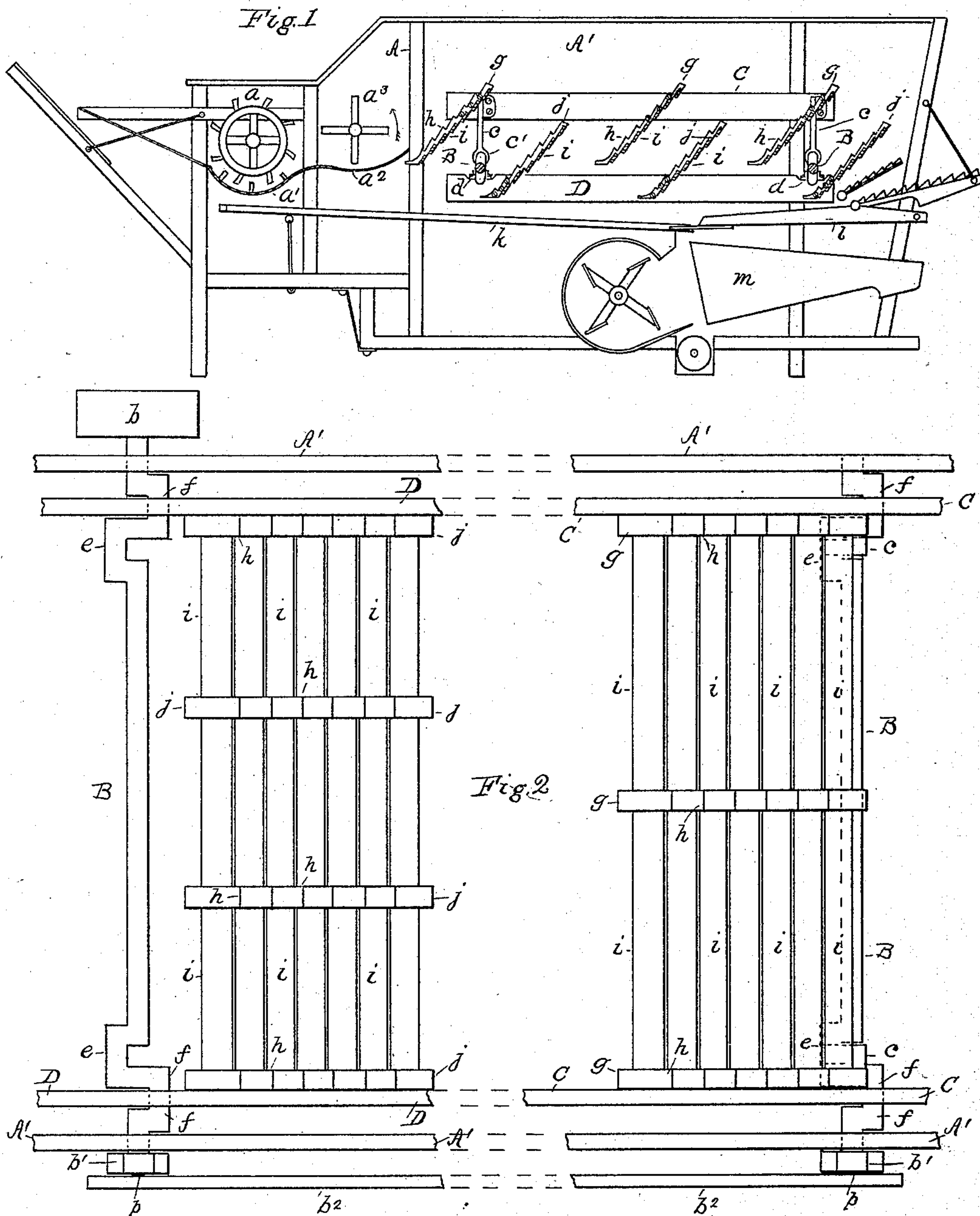
2 Sheets—Sheet 1.

R. R. HOWELL.

STRAW CARRIER FOR THRASHING MACHINES.

No. 416,785.

Patented Dec. 10, 1889.



Witnesses

Ch. Churchill
F. J. Conston

Inventor

Robert R. Howell

By His Attorney

P. H. Gunckel

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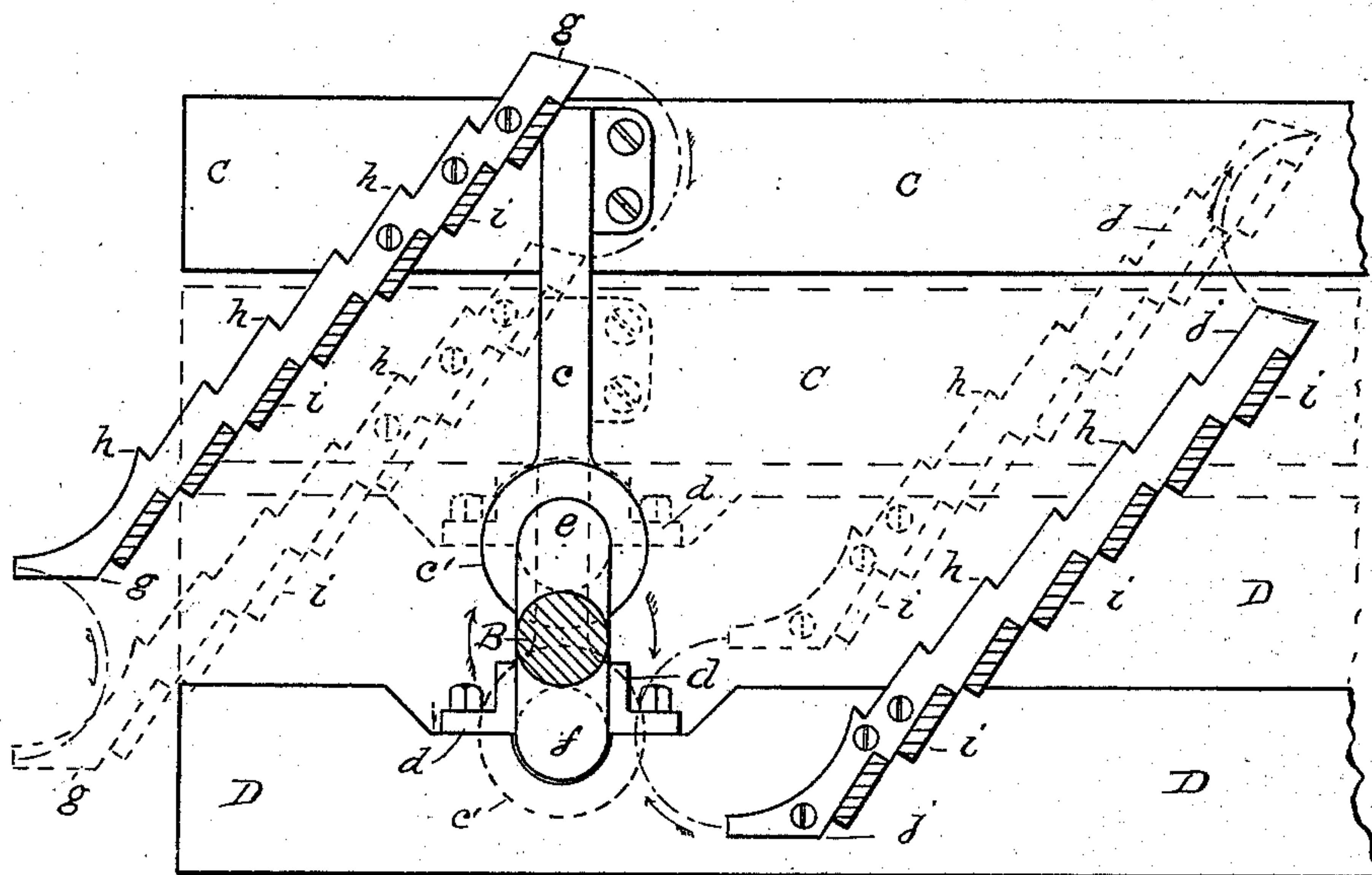
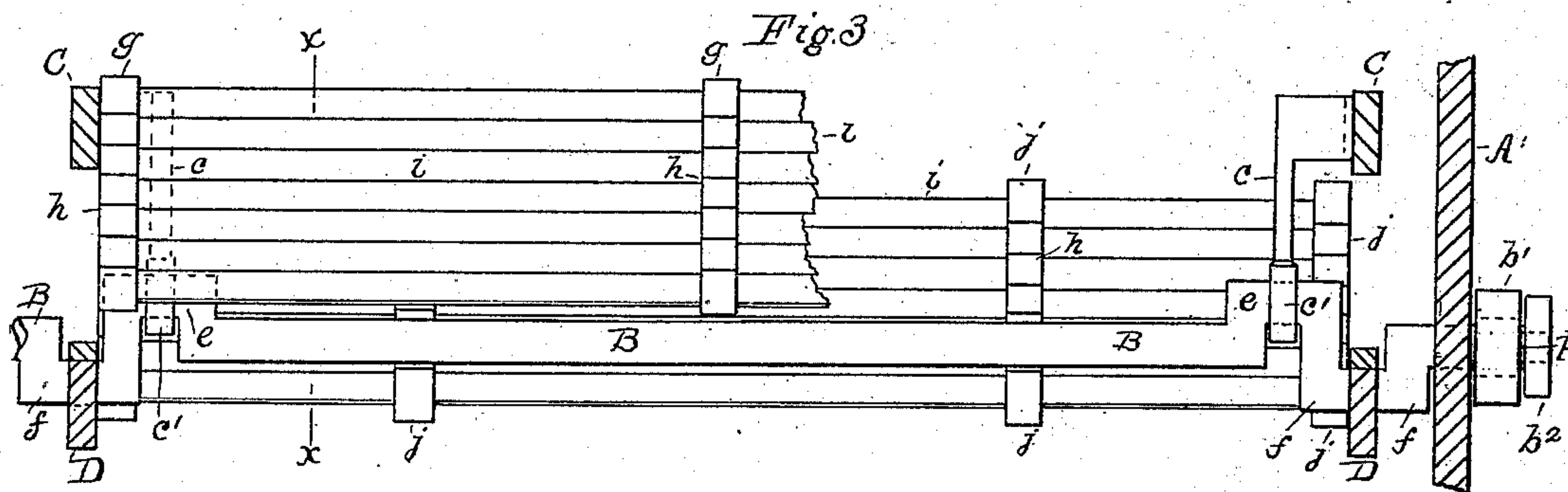


Fig 4

Witnesses
O. Churchill
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UNITED STATES PATENT OFFICE.

ROBERT R. HOWELL, OF MINNEAPOLIS, MINNESOTA.

STRAW-CARRIER FOR THRASHING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 416,785, dated December 10, 1889.

Application filed June 25, 1888. Serial No. 278,103. (No model.)

To all whom it may concern:

Be it known that I, ROBERT R. HOWELL, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Straw-Carriers for Thrashing-Machines, of which the following is a specification.

My invention relates to thrashing-machines in which devices having rising and falling and rearward movements are used to convey the straw and aid in the separation of the grain therefrom.

The object of the invention is improvement of the devices for carrying the straw, so that while being conveyed rearward it will be thoroughly agitated to prevent clogging or bunching and effect a thorough separation of the grain.

The improvements consist in the devices hereinafter fully described, and particularly pointed out in the claims, and which are illustrated in the accompanying drawings, in which—

Figure 1 represents a longitudinal sectional elevation of a thrashing-machine containing my improvements. Fig. 2 is a broken top view of portions of the improved straw-carrier and grain-separating devices. Fig. 3 is a broken end view of the same, and Fig. 4 is an enlarged sectional view on the line $x x$ of Fig. 3.

In the several views, A represents the frame of a thrashing-machine, and A' its side casing.

a is the thrashing-cylinder; a' , the concave; a^2 , a grating extending a short distance rearward from the concave, and a^3 the usual beater over the grating.

B B are two-throw crank-shafts extending laterally through the machine and suitably journaled at its sides, and on the projecting end of one of them is a pulley b , to be belted to a driving-pulley. On the opposite projecting ends of the shafts are disks b' , connected by pins p to a connecting-rod b^2 , whereby the two shafts are simultaneously rotated.

C and D are respectively upper and lower bars extending longitudinally within the machine. The upper bars C are supported on arms c , which have bosses c' on their lower ends, in which turn the inner pair of cranks

e of the shafts B, and the lower bars D have journal-boxes d , by which they are connected to the outer pairs of cranks f of the shafts B. The cranks e and f being on opposite sides of the shafts B, the simultaneous rotation of the shafts causes the cranks e to lower the upper bars when on their downward throw, and the cranks f , being then on their upward throw, raise the lower bars D, and when the throws of the cranks are in opposite direction the movements of the bars C and D are opposite. The horizontal position of the bars is maintained, as will be obvious, by reason of their connections at both ends to the cranks, while there is permitted the revolution of their points of attachment around the respective crank-centers.

To the bars C are attached the upper ends of a series of shaker-sections g , slanting downward toward the head of the machine.

On the upper surfaces of the guides or risers are notches or teeth h , and to their under surfaces are secured suitably-separated slats i , extending across the machine. Similar guides or risers j , set at the same inclination as the guides g , have their lower ends attached to the sides of the bars D, and are provided with notches or teeth h on their upper surfaces and cross-slats i on their lower sides. A suitable number of like guides or risers g and j are provided intermediate of the sides and secured to the slats i to add strength and aid in carrying and tossing the straw.

In operation the straw thrown toward the rear by the beater a^3 is caught up by the first set of risers and slats $g i$ and carried onward, to be caught by the next set of risers and slats $j i$ as the latter rise and the former descend, and so on with the successive sets of risers and slats to the tail of the machine. The separated grain falls between the slats onto the pans k and l , and is conducted to a shoe m to be cleaned in the usual manner.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A thrashing-machine straw-carrier consisting of two parallel horizontal frames carrying inclined overlapping shaker-sections composed of separated cross-slats, and shafts having crank-arms at opposite angles, where-

on said frames are carried, to move the shaker-sections in opposite directions, substantially as set forth.

2. In a thrashing-machine, the combination,
5 with two series of shaker-sections placed in alternation and provided with grain-separating slats, the one series being connected together at their upper ends and the other at their lower ends by independent frames, of

shafts having opposite cranks, to which said frames are respectively connected, and means for operating said crank-shafts, substantially as set forth.

ROBERT R. HOWELL.

Witnesses:

F. D. CULVER,
P. H. GUNCKEL.