

(No Model.)

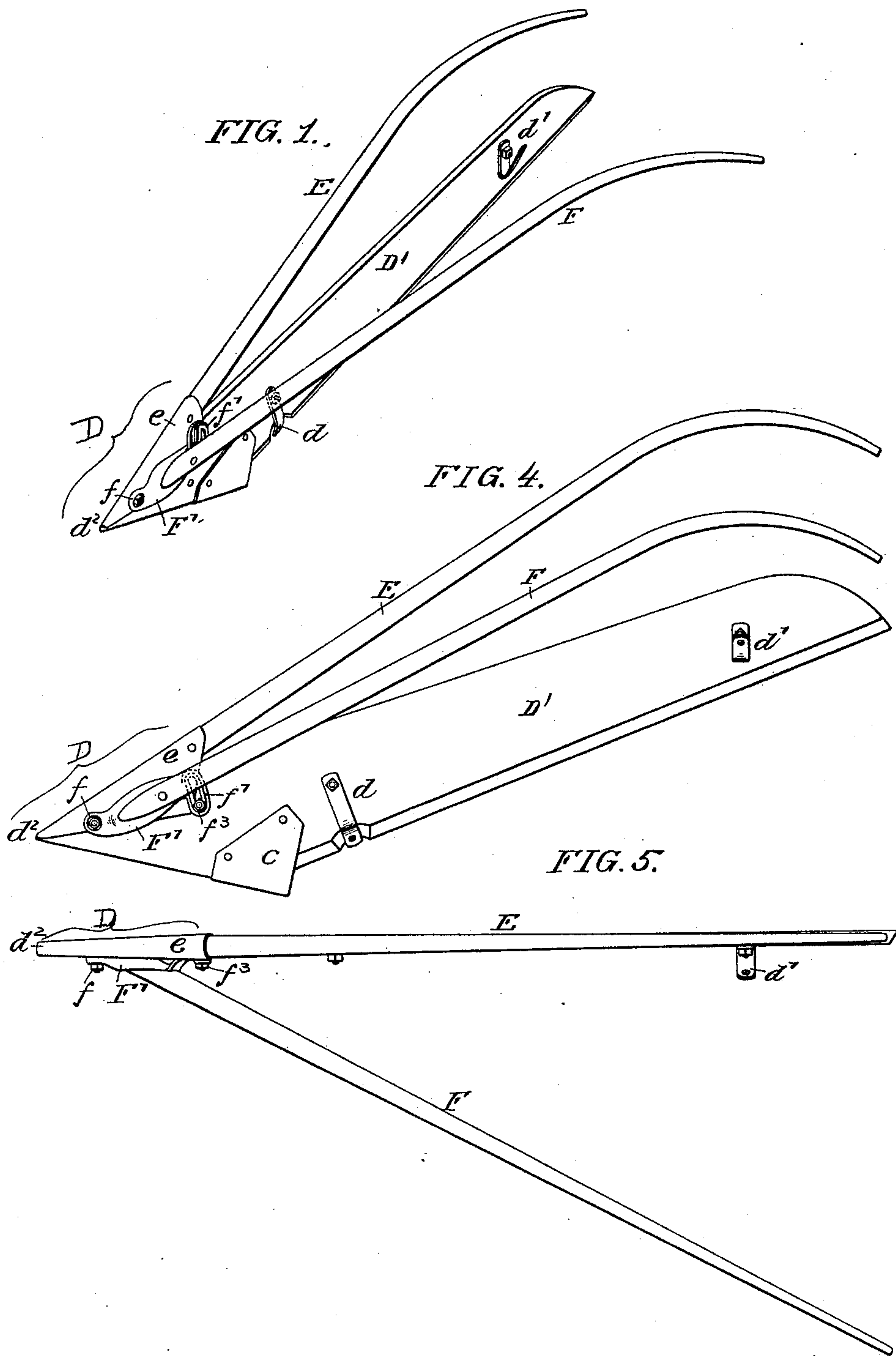
2 Sheets—Sheet 1.

A. A. HAMILTON.

TANGLED GRAIN SEPARATOR FOR HARVESTING MACHINES.

No. 606,137.

Patented June 21, 1898.



Witnesses:  
*Wm. A. Barr*  
*Chas. D. Goodwin*

Inventor:  
*Alpheus A. Hamilton*  
by his Attorneys  
*Howson & Howson*

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FIG. 2.

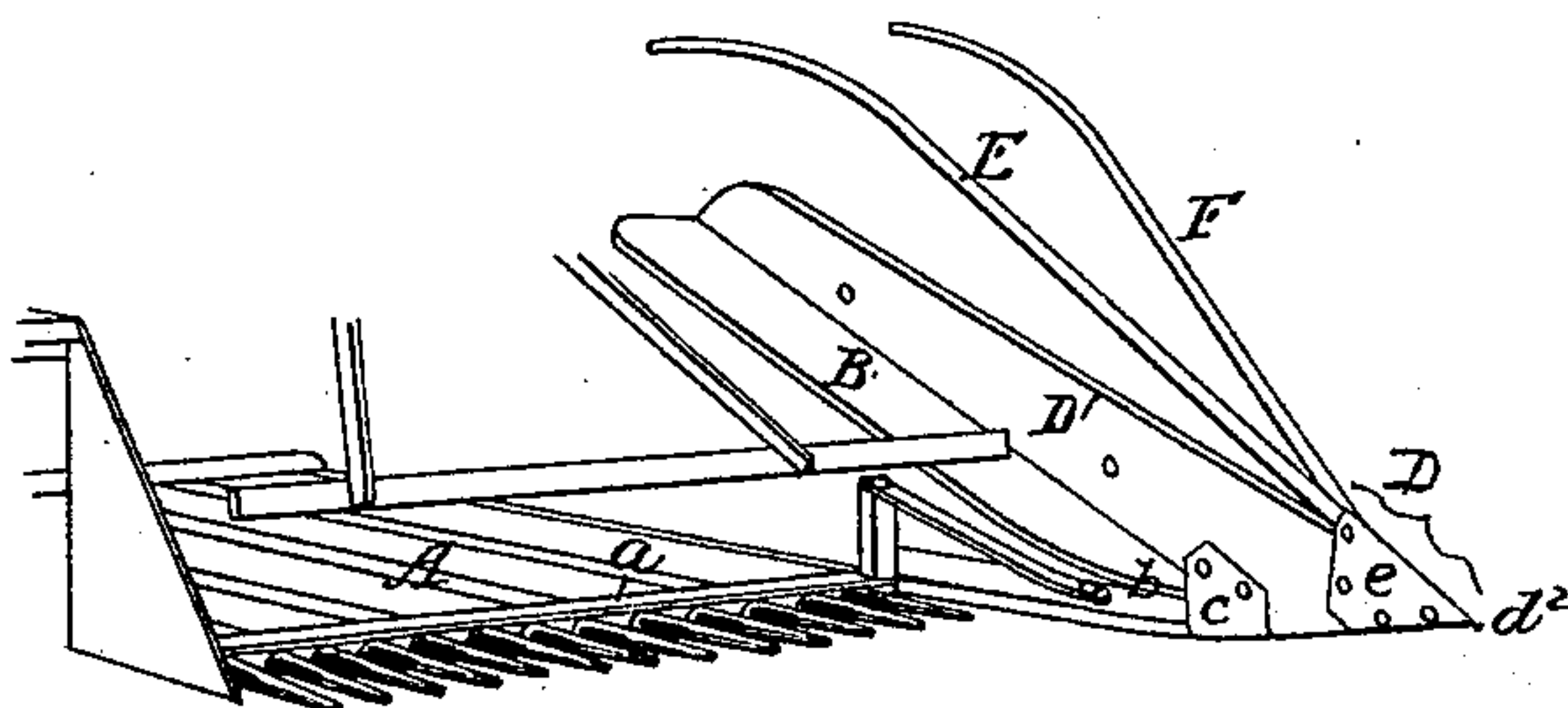
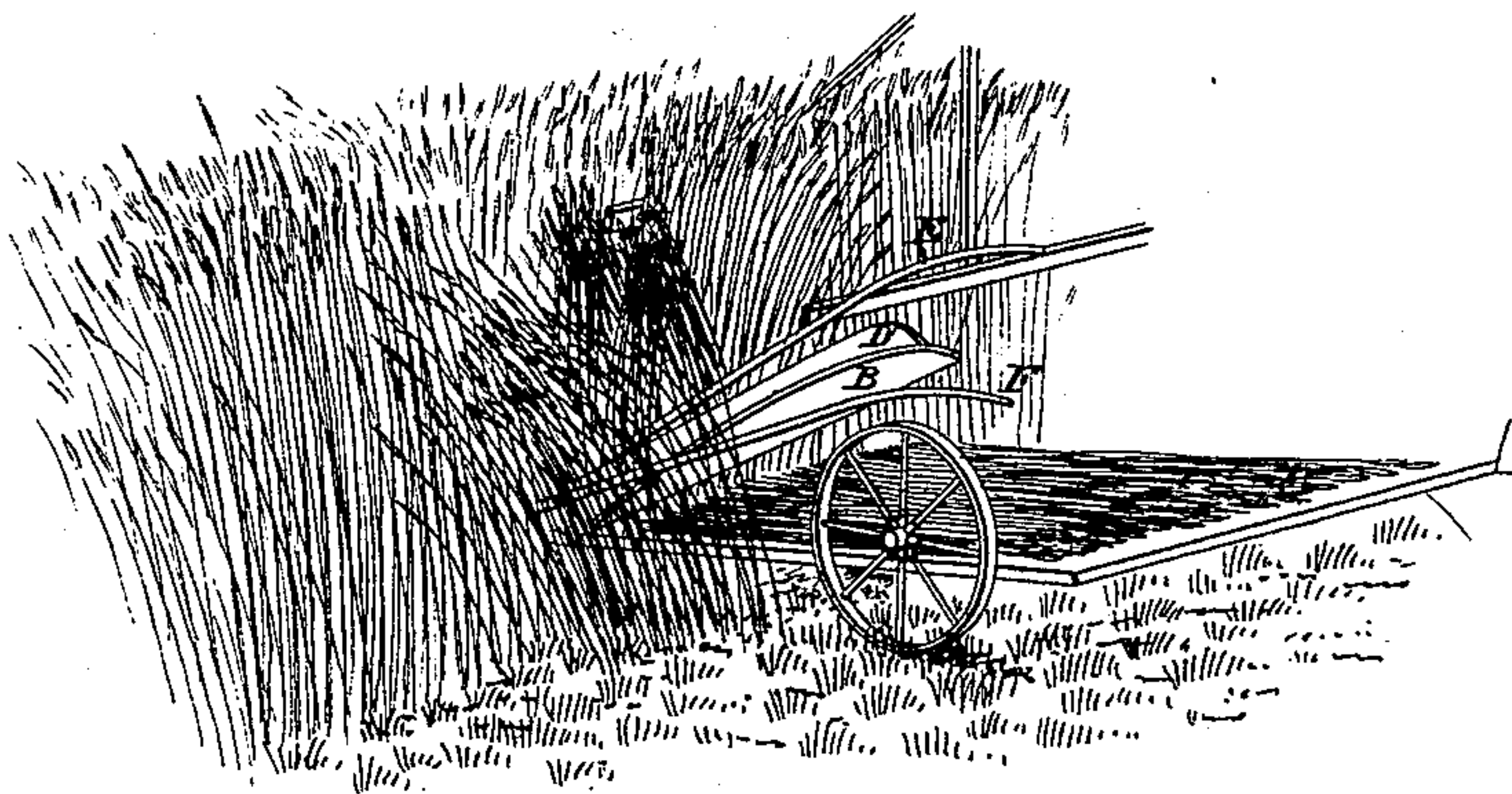


FIG. 3.



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# UNITED STATES PATENT OFFICE.

ALPHEUS A. HAMILTON, OF PHILADELPHIA, PENNSYLVANIA.

## TANGLED-GRAIN SEPARATOR FOR HARVESTING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 606,137, dated June 21, 1898.

Application filed July 17, 1896. Serial No. 599,539. (No model.)

*To all whom it may concern:*

Be it known that I, ALPHEUS A. HAMILTON, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Tangled-Grain Separators for Harvesting-Machines, of which the following is a specification.

The object of my invention is to separate grain to be cut from standing grain, so that the reaper or binder will readily pass through and properly cut and reap tangled and fallen grain as readily as the untangled straight grain.

My invention is adapted to be attached to any ordinary harvester-binder or single or combined reaper, so that an ordinary machine can be used without the attachment when cutting straight grain, but when fallen grain is to be cut it can be readily secured in position on the machine and will completely separate the grain to be cut from the fallen grain at the side.

In the accompanying drawings, Figure 1 is a perspective view of my improved attachment for harvesting or reaping machines. Fig. 2 is a perspective view looking toward the knives of the reaper, showing the attachment in position. Fig. 3 is a rear view of sufficient of a machine to show the manner in which my improved device separates the tangled grain. Fig. 4 is a side view of the attachment, and Fig. 5 is a plan view.

A is the bed of an ordinary reaping-machine. *a* is the cutter-bar, and B is the inclined separator-board, with a pointed nose *b*, which ordinarily extends a short distance in advance of the knives, so as to separate the grain to be cut from the standing grain near the roots; but this separator, even when rearwardly-extending arms are used in the place of the board, does not entirely separate the grain to be cut from the standing grain.

The above-described parts are common and are found on all the modern reapers and harvester-binders.

A binder or reaper of the ordinary construction will not cut fallen or tangled grain without the aid of one or more persons to separate the grain in advance of the machine by walking directly back of the separator-board and using a long pole and by an upward movement of the pole to break the grain apart. By my

invention I dispense entirely with the extra help and can make such a complete separation that the reel will deliver all the cut and tangled grain quickly and uniformly upon the platform conveyer at the instant the grain reaches the cutters, so that the machine will bundle tangled grain cut with the use of my attachment as readily as the machine without my attachment will cut ordinary standing grain.

While the device is termed an "attachment," it may be permanently attached in some instances to the machine without departing from the main feature of my invention.

Referring to Figs. 1, 4, and 5, D is the head of the attachment, having in the present instance a rearwardly-extending board D', which forms a continuation of the ordinary separator-board B of the machine; but this board D' is arranged on edge, as shown, the base of the board being beveled so as to fit upon the surface of the inclined board B. In the present instance I secure the attachment to the machine by means of two knee-irons *d d'*, which are fixed to the board D' and are arranged to aline with bolts which secure the board B to the frame of the machine, although other fastenings may be used without departing from my invention.

The under side of the head D is beveled upward from the socket *c* to the point *d*<sup>2</sup>, and the bevel is such that it will allow for the free movement of the platform of the machine on its pivot, so that the machine can be adjusted for a low or a high cut without adjusting the attachment or forcing the nose into the ground.

Projecting rearwardly from the head, preferably directly above the board B, is a long arm E, extending to a point higher than the intersection of the stalks of the tangled grain when upright, as shown in Fig. 3, and made of a material that will have a certain spring, so as to yield to the tangled grain, preventing the breaking of parts and the uprooting of the grain. In the present instance this arm is tapered and is secured only at the head, being adapted to a socket *c*, formed by a bent plate of sheet metal, which also forms the nose of the attachment. Projecting from the side of the head D, directly back of the nose and on the outside of the machine, is an in-



clined arm F. This arm is mounted in an adjustable bracket F', pivoted to the head D by a bolt  $f$ , and is slotted at  $f'$ , and is secured in the adjusted position by a bolt  $f^3$ , which passes through the slot. On loosening the bolt  $f^3$  the arm can be raised or lowered to accommodate the device to grain of different height. The two arms are preferably tapered and curved downwardly at their rear ends and are only connected to the head of the device, so that the grain will not be cut by the arms.

The operation of the device is as follows: If the farmer finds that he has a field of tangled grain, he simply attaches the device shown in Fig. 2 to the separator-board of the harvester-binder or reaping-machine and adjusts the arm F to the length of the grain, and as he passes through the uncut grain the nose  $d^2$  of the attachment will separate the grain to be cut from the fallen grain, and if the tops of the grain at the side of the machine should be entangled with the tops of the grain directly in advance of the cutters the nose will enter into the space between the two, and the two arms E and F will separate the stalks, gradually traveling upward toward the heads of the grain, and will finally pull the tangled heads apart before the cutter-bar cuts the grain in its path. The cut grain will then fall upon the platform or conveyor at the proper time, so as to enable the tangled grain to be bundled in a satisfactory manner. The arm F also forces the uncut tangled grain away from the side of the machine, and I find in practice that the grain will remain in such a position that when the machine makes a second cut it can be guided much nearer the standing grain than heretofore, and thus a gain of about six inches to a foot is made in each cut.

It will be understood that in some instances the board D may be extended to a greater height than shown, so as to dispense with the arm E, and that the arm F may be fixed instead of adjustable, and that when the device is permanently attached to the harvester or reaper the boards B and D' may be combined in one structure; but in every case the device should separate the entangled grain before it is cut.

I claim as my invention—

1. The combination in a harvesting or reaping machine, of a tangled-grain separator having an upturned nose extending a considerable distance beyond the cutter-bar and having arms projecting rearwardly and extending to a point higher than the intersection of the tangled grain when upright so as to completely separate the tangled grain to be cut from the grain at the side of the machine, substantially as and for the purpose set forth.

2. An attachment for application to a harvester or reaper for separating entangled grain, of a head having a rearward extension, means for securing said extension to the machine and arms extending upwardly and rear-

wardly from the head and to a point higher than the intersection of the tangled grain when upright so that they will completely separate the grain before it is cut by the cutter-bar of the machine, substantially as described.

3. The combination in an attachment for harvesting or reaping machines for separating entangled grain, of a head adapted to be secured to the machine and having a socket on its under side to receive the nose of the machine, the under side of the head being beveled from the said socket to the nose so that the machine can be adjusted to make a low cut, and arms projecting upwardly and rearwardly from the head to a point higher than the intersection of the tangled grain when upright so that they will completely separate the tangled grain before it is cut, substantially as described.

4. The combination in an attachment for harvesting and reaping machines for separating entangled grain, of a head having a socket on its under side adapted to receive the nose of the permanent separator, a vertically-arranged board extending rearwardly from the head and adapted to be secured on edge to the separator-board of the machine, the under side of the head being beveled from the socket up to the nose, and arms projecting rearwardly and upwardly from the head to a point higher than the intersection of the tangled grain when upright so that the tangled grain will be completely separated thereby before it is cut, substantially as described.

5. The combination in an attachment for harvesting and reaping machines for separating entangled grain, of a head adapted to be secured to the separator-board of the machine having a socket on its under side in which the nose of the separator-board rests, the under side of the head being beveled, a fixed arm projecting rearwardly and upwardly from the head and an adjustable bracket pivoted to the head at the outer side, means for securing the bracket after adjustment, and an arm attached to said bracket and extending rearwardly, said arms extending to a point higher than the intersection of the tangled grain when upright, so that the tangled grain will be completely separated thereby before it is cut, substantially as described.

6. The combination in an attachment for harvesting and reaping machines for separating entangled grain, of a head having a separator-board extending rearwardly therefrom and means for securing said board to the separator-board of the machine, a socket on the under side of the head to secure the nose of the separator-board of the machine, said head being inclined upward to this nose to allow the machine to be adjusted for a low cut, a plate secured to the upper edge of the head forming the nose of the attachment and a socket, a rearwardly-extending arm secured in the said socket, a bracket pivoted at its forward end to the head and slotted, a bolt adapt-



ed to the slot in the bracket and a rearwardly-  
extending arm secured to the bracket, said  
arms extending to a point higher than the in-  
tersection of the tangled grain when upright  
5 so that they will completely separate the  
tangled grain before it is cut, substantially as  
described.

In testimony whereof I have signed my  
name to this specification in the presence of  
two subscribing witnesses.

ALPHEUS A. HAMILTON.

Witnesses:

WILL. A. BARR,

JOS. H. KLEIN.