No. 734,322. PATENTED JULY 21, 1903.

A. A. HAMILTON.

TANGLED GRAIN SEPARATOR.

APPLICATION FILED MAR. 14, 1903.

NO MODEL. 3 SHEETS—SHEET 1.

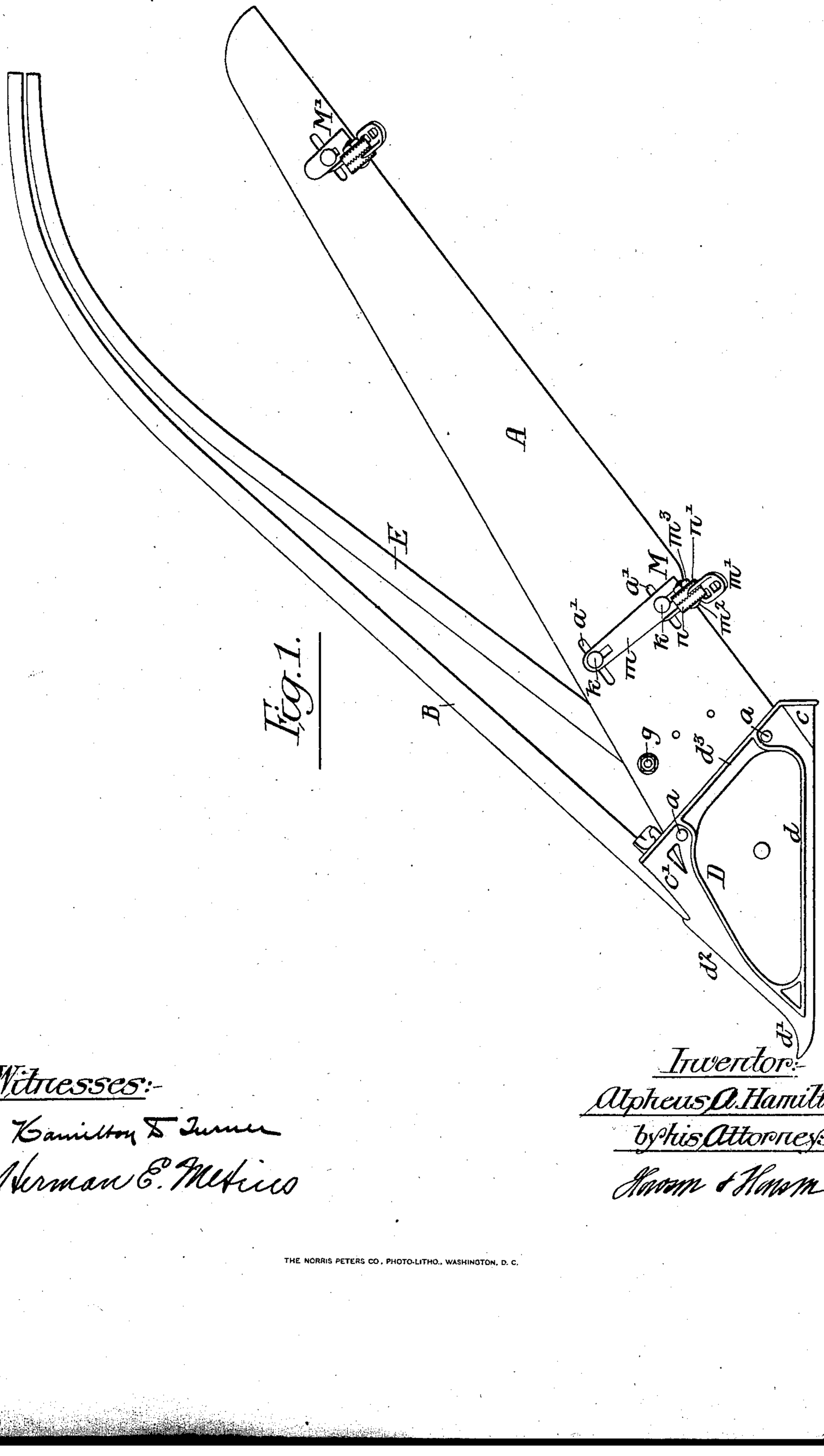

Fig. 1.

Witnesses:-

Hamilton & Turner

Norman E. Mitchell

Inventor:-

Alpheus A. Hamilton,

by his Attorneys;

Hamm & Hamm

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NO MODEL. 3 SHEETS—SHEET 2.

Fig. 2.

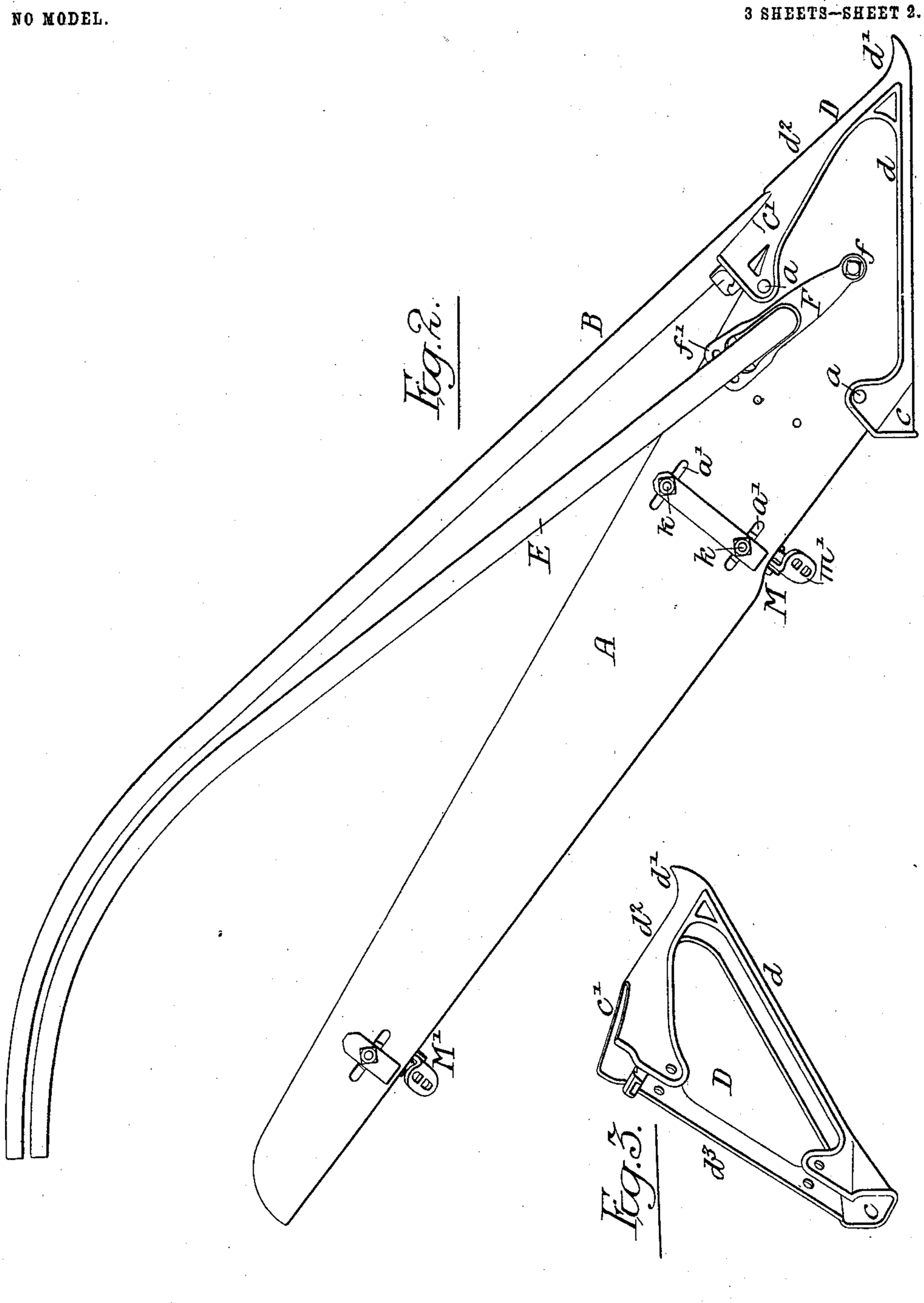

Fig. 3.

Witnesses:-

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Herman E. Metius

Inventor:-

Alpheus A. Hamilton,

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Howson & Howson

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NO MODEL. 3 SHEETS—SHEET 3.

Fig. 6.

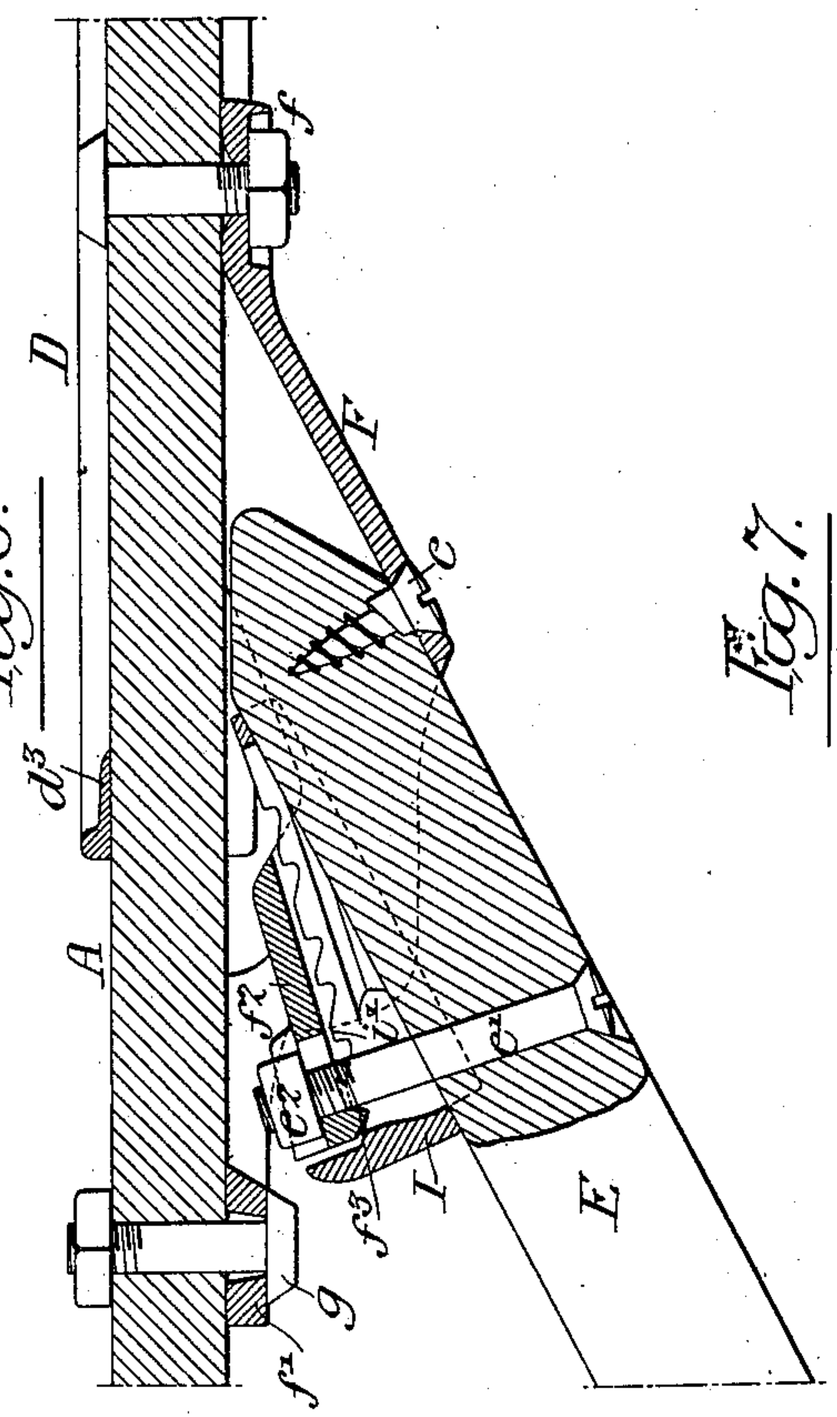


Fig. 7.

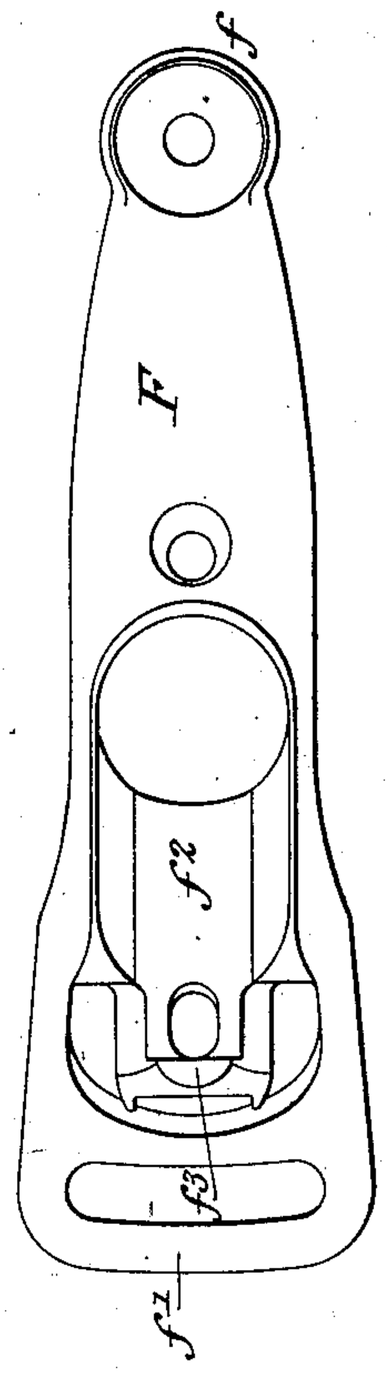


Fig. 8.

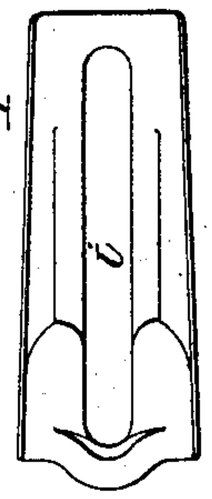


Fig. 9.

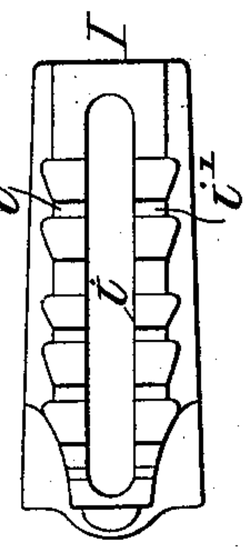


Fig. 4.

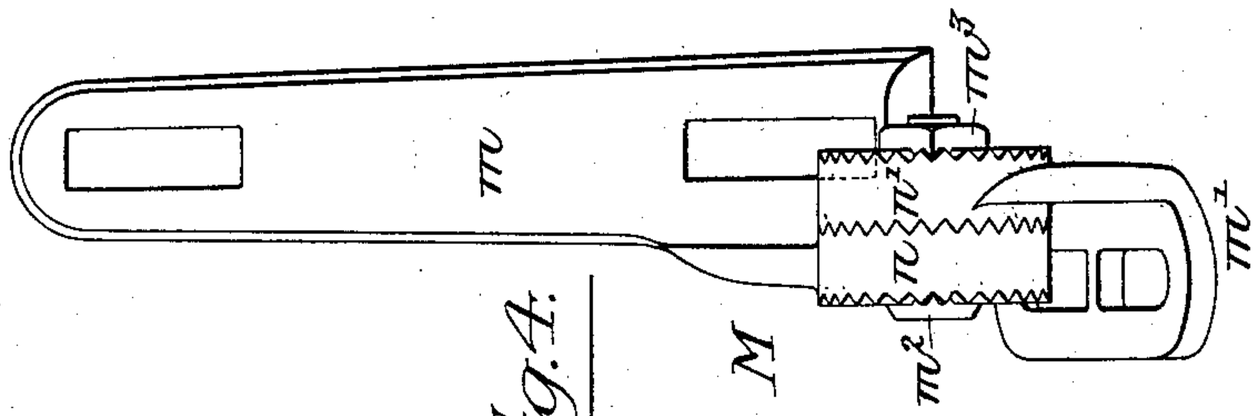
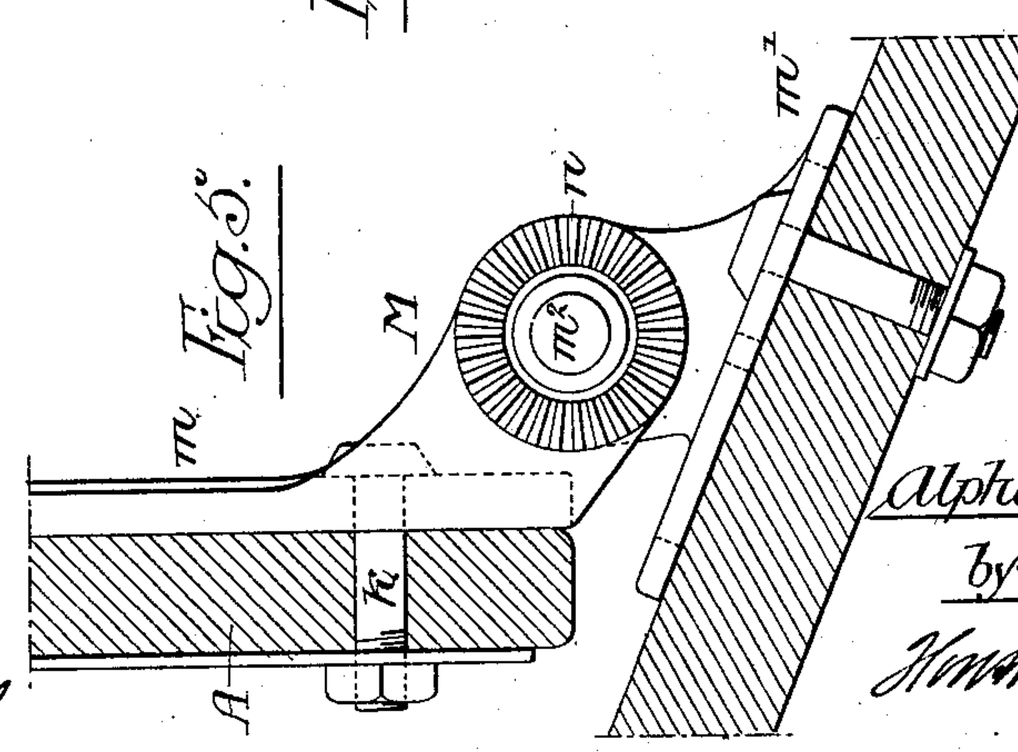


Fig. 5.



Witnesses:

Hamilton D. Turner

Herman E. Mellus

Inventor:

Alpheus A. Hamilton,

by his Attorneys:

Howard & Howson

No. 734,322. Patented July 21, 1903.

UNITED STATES PATENT OFFICE.

ALPHEUS A. HAMILTON, OF PHILADELPHIA, PENNSYLVANIA.

TANGLED-GRAIN SEPARATOR.

SPECIFICATION forming part of Letters Patent No. 734,322, dated July 21, 1903.

Application filed March 14, 1903. Serial No. 147,791. (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, of which the following is a specification.

My invention relates to certain improvements in tangled-grain separators for harvesting-machines, for which Letters Patent were granted to me on June 21, 1898, No. 606,137.

The object of my present invention is to improve the construction of certain details of the separator, to reduce the cost of manufacture, and to make it applicable to a right or left hand machine, as fully described hereinafter, reference being had to the accompanying drawings, in which—

Figure 1 is a view looking toward the inner side of the separator. Fig. 2 is an outside view of the separator. Fig. 3 is a perspective view of the metallic head-frame. Figs. 4 and 5 are views showing the means for attaching the separator to the separator-board of the machine. Fig. 6 is a sectional view showing the method of securing the arms to the head. Fig. 7 is a detached side view of the socket, and Figs. 8 and 9 are views of the wedge-piece.

As set forth in my above-mentioned patent, the 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 the separator will completely separate the grain to be cut from the fallen grain at the side.

D is the head of the attachment, made in the form of a triangular frame, as shown in Fig. 3. The base portion d of the frame is pointed at the forward end and slightly turned up to form a nose d'. At the rear is a socket c for the nose of the inclined separator-board of the harvesting-machine. The portion d^2 of the frame D forms the front of the separator and is also shaped to form a socket c' for the reception of the arm B. The method of coupling this arm to the frame will be described hereinafter.

A is the separator-board, shaped to fit into the space between the sides of the frame D, the board being secured to the frame by bolts $a\ a$. One side of the frame d^3 is continued from the socket c to the socket c' in the present instance.

The frame D can be made of steel or of malleable iron, being comparatively light and having sufficient strength to withstand the strain to which it is subjected.

The side arm E is mounted in a socket F, pivoted at f to the separator-board A and adjustably secured to the separator-board by means of the bolt g, which passes through a slotted extension f' of the socket F. The board A has a series of holes for the reception of the bolt g, so that by loosening the bolt the socket F can turn on its pivot f and can be adjusted to any point desired. The socket F and its arm E can be applied to either side of the separator by simply removing the bolt and adjusting it on the opposite side. The socket is notched on its under side, so as to clear the frame d^3 of the head D.

In order to firmly secure the arm E to the socket F, I first secure the arm by means of a screw e. Then a wedge-piece I is placed between the arm and the plate f^2 of the socket. This wedge-piece, as shown in Figs. 8 and 9, has a slot i and a series of teeth i', which engage a projection f^3 on the plate f^2, and a bolt e', having a nut e^2, is passed through the arm E, through the slot i in the wedge I, and through an opening in the plate f^2. The wedge can be adjusted so as to swing the arm E toward or from the board A, and when the wedge is in proper position the screw is turned to rigidly hold the parts together. The nut on the screw-bolt is prevented from turning in the socket by flanges or other suitable means. This same construction is used in securing the arm B to the socket c' in the head-frame D, and the arm can be raised or lowered by adjusting the wedge.

In order that the attachment may be adjusted to any angle desired in respect to the separator-board of the machine, I secure adjustable hinge-brackets to the separator-board of the machine and to the separator-board of the attachment.

M is a hinge-bracket having two arms $m\ m'$. One arm has two slots in it in the present in-

stance, and bolts k k pass through these slots and through longitudinal slots a' in the separator-board A. The arm m' has slots therein, and a bolt passes through the slots and into the separator-board of the machine.

m^2 is a pivot-pin in the form of a bolt having a nut m^3.

The two hubs n n', one secured to the arm m and the other secured to the arm m', have serrated faces, so that when one arm is adjusted in respect to the other and the nut m^3 is tightened on the bolt it will draw the two serrated faces together and form a rigid lock and hold the two arms in the adjusted position. When the nut is backed off, the arm can be readily adjusted and locked again in any position desired.

M' is a hinged bracket similar to the bracket M, with the exception that the arm which is secured to the separator-board A is not as long as the arm m.

I preferably serrate both faces of each hub n n', so that either face can be used.

The brackets can be readily detached and secured to the opposite side of the board, so that the separator can be used on either a right or left hand harvester.

It will be understood that my invention need be applied to a reaping-machine only when it is desired to cut a field of tangled grain, and when straight grain is to be cut the attachment can be removed, if desired. It can be applied to the machine by simply securing the arms m m' of the hinge-brackets M M' to the separator of the machine by two bolts, and the separator-board of the attachment can be adjusted to any angle desired and locked by means of the devices illustrated. The separator-nose of the machine rests in the socket c, and the attachment is therefore held rigid in respect to the machine.

In the present instance the arm B is only adjustable vertically; but the arm E can be raised or lowered or moved toward or from the separator-board and locked at any point desired. The arms when adjusted are held rigidly in their sockets, and the sockets need not be accurately made, as the parts can be fitted when assembled.

I claim as my invention—

1. The combination in a tangled-grain separator for harvesting and reaping machines, of a triangular head-frame having a socket at one end for the reception of the nose of the harvesting-machine and at the forward end a turned-up nose, and having at its upper end a socket, with a separator-board having its forward end mounted in the frame and secured thereto, and an arm mounted in the upper socket of the frame, substantially as described.

2. The combination of a separator-board of a harvesting-machine, a socket, an arm mounted in the socket, a wedge for adjusting the arm in respect to the separator-board, and means for securing the arm after adjustment, substantially as described.

3. The combination in a separator attachment for harvesting and reaping machines, of a triangular metallic frame, a separator-board mounted therein, said frame having a socket at the rear for the reception of the nose of the harvesting-machine and a socket in its upper end, an arm mounted in said socket, a wedge between the arm and the socket, and a bolt securing the arm to the socket, substantially as described.

4. The combination in a separator attachment for harvesting or reaping machines, of a triangular cast-metal frame open in the center and having a socket at the rear end for the reception of the nose of the harvesting-machine, a nose at the forward end of said frame, a socket at the upper end, an arm secured in the socket, and a separator-board mounted in the open frame and secured thereto, substantially as described.

5. The combination of a separator-board, a frame secured to the board, an arm secured to the frame, another arm adjustably secured to the board, with a hinge-bracket, one arm of the hinge secured to the separator-board of the attachment, the other arm arranged to be secured to the separator-board of the machine, a bolt securing the hubs of the hinge-bracket together, and means for locking the hubs in the adjusted position, substantially as described.

6. The combination of a separator-board of a harvesting-machine and a separator-board of an attachment, a hinged bracket made in two parts, one part having an arm arranged to be secured to one separator-board and a hub having a serrated face, the other part having an arm secured to the other separator-board and having a hub with a serrated face, a bolt passing through the two hubs, and a nut on the bolt for clamping the hubs together, so that the separator-board of the attachment will be held in its adjusted position, substantially as described.

7. The combination in a grain-separating attachment for harvesting-machines, of a frame, a separator-board secured thereto, a socket in the frame, an arm mounted in said socket, a wedge, and a bolt securing the arm to the frame, substantially as described.

8. The combination of a frame having a socket, an arm mounted in said socket, a projection on the frame, a wedge having a serrated face, one of the teeth of the wedge engaging the projection on the socket, and a bolt for securing the arm to the frame, substantially as described.

9. The combination of a frame having a socket, an arm mounted in the socket, a projection on the socket, a slotted wedge having teeth on one face, a projection on the frame with which the teeth engage, and a bolt passing through the wedge and the frame, substantially as described.

10. The combination of a frame, a socket, an extended plate on the socket having a projection, an arm having its end mounted in the

socket and secured thereto, a slotted wedge mounted between the plate of the frame and the arm and having teeth on one face engaging the projection on the plate, a bolt passing through the arm and through the wedge and plate having a nut on its end, substantially as described.

11. The combination in a separator attachment for harvesting-machines, consisting of a head-frame, a board extending rearwardly therefrom, detachable hinged brackets on the board by which the separator can be attached to either a right or left hand harvesting-machine, an arm mounted in a socket in the frame, a socket-bracket having an arm, said socket-bracket being detachably secured to the side of the separator, so that it can be applied to either side thereof, substantially as described.

12. The combination in a separator attachment for harvesting-machines, of a triangular head-frame, a separator-board secured in said frame, detachable hinge-brackets carried by the board and arranged to be attached to the separator-board of the machine, a socket in the rear end of the frame for the nose of the said machine, the forward end of the frame being pointed, a socket in the upper portion of the frame, an arm adjustably mounted in said socket, a bracket arranged to be secured to either side of the attachment, and an arm adjustably mounted in said bracket, 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.