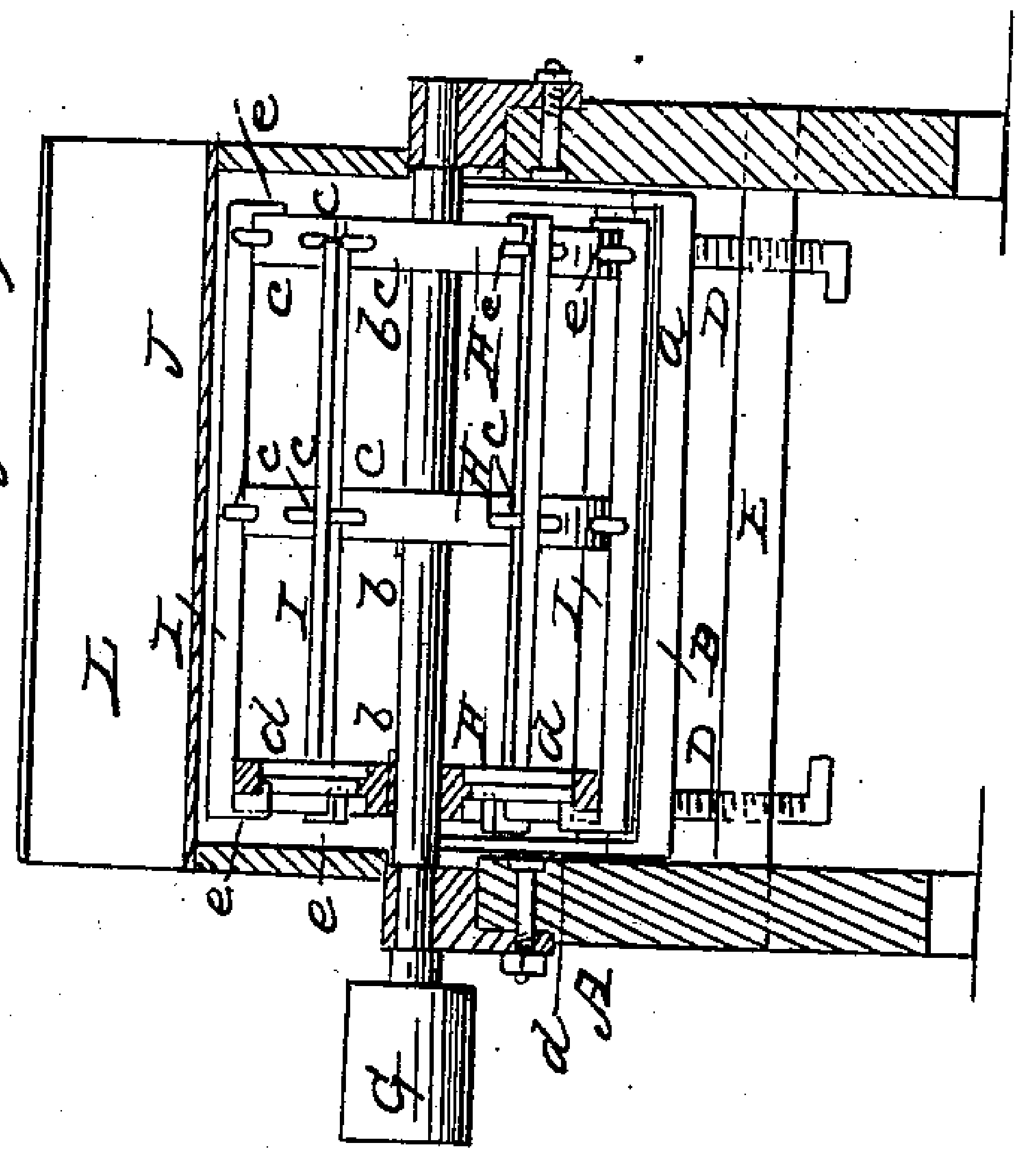
D. A. WILLBANKS.

Thrashing Machine.

No. 26,389. Patented Dec. 6, 1859.

Fig. 2,



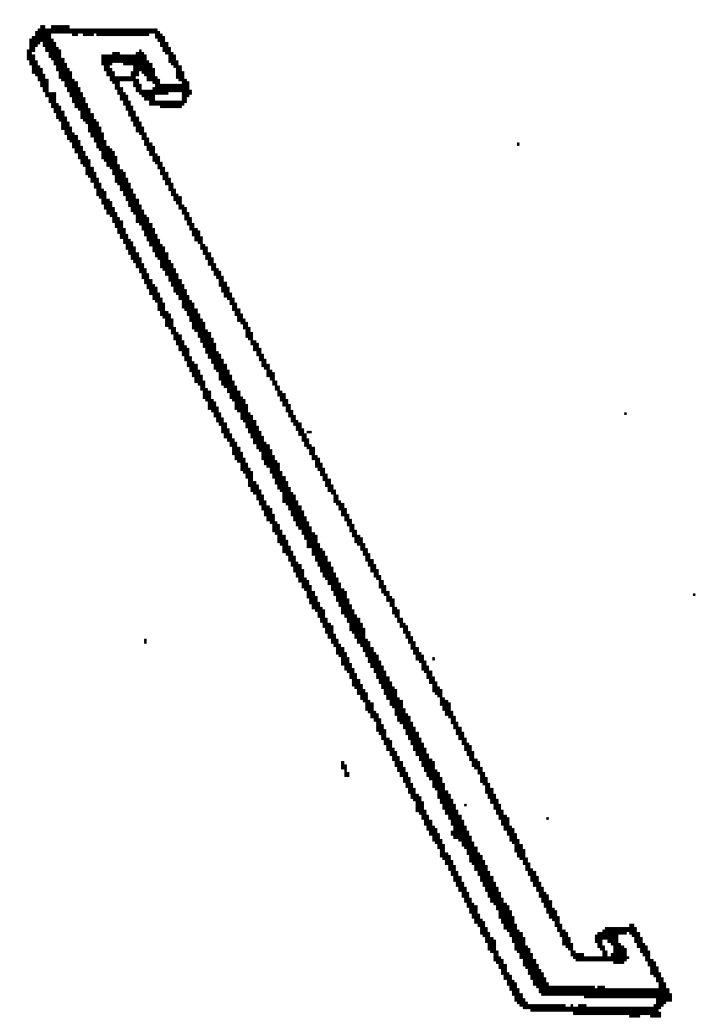
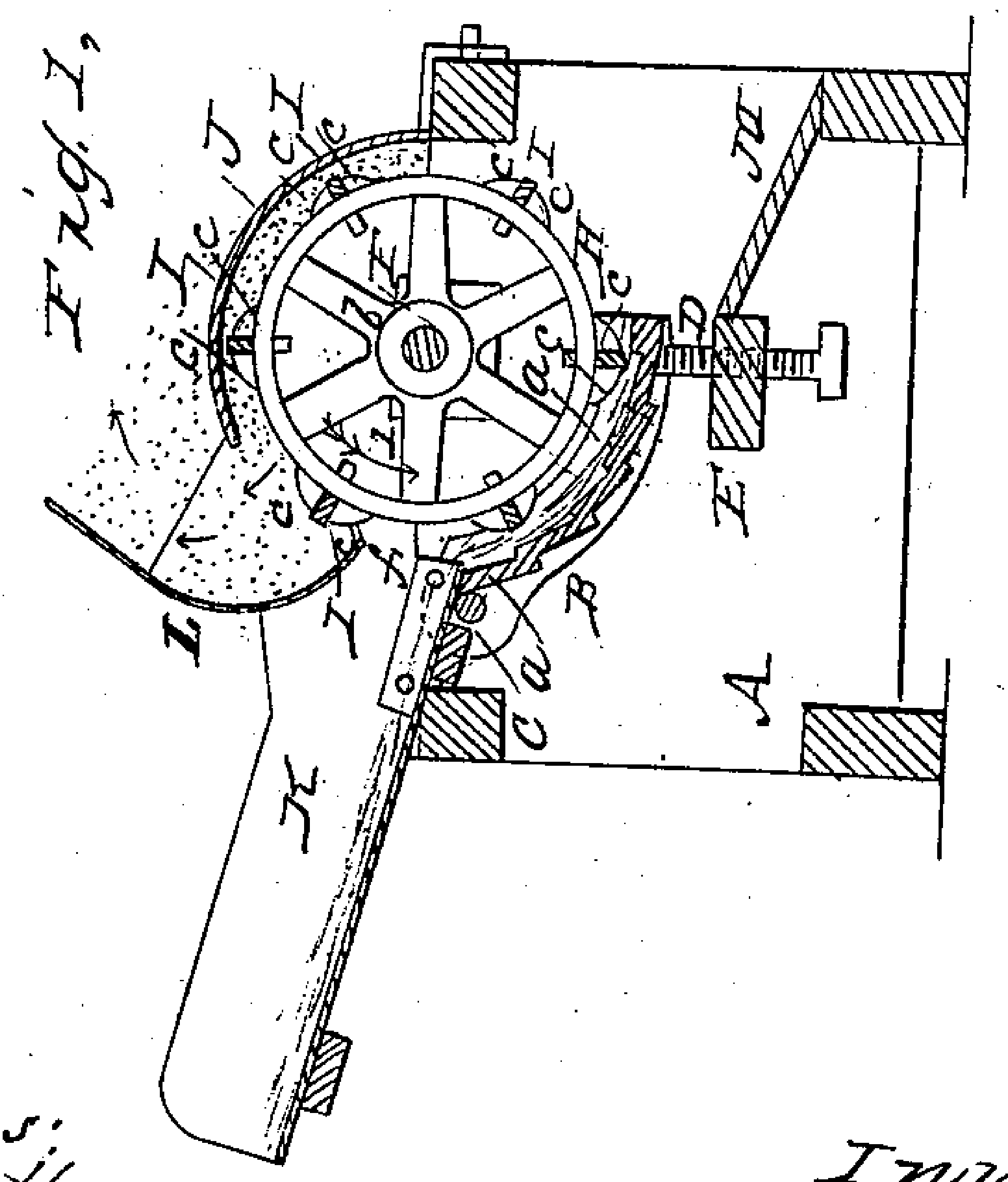


Fig. 1,



Witnesses:
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Inventor:
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UNITED STATES PATENT OFFICE.

D. A. WILLBANKS, OF HARMONY GROVE, GEORGIA.

THRESHING-MACHINE.

Specification of Letters Patent No. 26,389, dated December 6, 1859.

To all whom it may concern:

Be it known that I, D. A. Willbanks, of Harmony Grove, in the county of Jackson and State of Georgia, have invented a new and Improved Grain-Threshing Machine; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figures 1 and 2, are vertical central sections of my invention, the two planes of section crossing each other at right angles. Fig. 3, is a detached perspective view of one of the flails or beaters of the beater cylinder.

Similar letters of reference indicate corresponding parts in the several figures.

My invention is designed to render easy and cheap the construction of threshing cylinders which are composed entirely of iron and at the same time greatly increase the durability and lessen the weight of the same.

The improvement which I have made consists in the manner hereinafter described of securing the ribs firmly to the cylinder heads without the aid of any auxiliary fastenings, such as screws, rivets &c.

Ribs fastened after my method are not liable to work loose separately, and if they should from long use or change in temperature or from any cause, work loose, they can all at one time be speedily tightened up.

To have the ribs cast with the cylinder heads is not very practicable, because cast ribs are not strong enough to resist the great strain which they are subjected to unless they be made quite heavy; besides this in sudden changes of temperature, they are liable to crack in expanding or contracting.

To be obliged to secure the ribs with rivets is a very serious inconvenience for this interferes with the separation of the parts of the cylinder when it is desired to pack them into a small compass for transportation, screws would obviate this difficulty, but in practice they soon allow the ribs to work loose and besides this, at the points where they are inserted, the ribs must necessarily be much weakened and consequently soon break.

To enable those skilled in the art to fully understand and construct my invention I will proceed to describe it.

A, represents a rectangular frame in which a corrugated concave B, is placed. This concave is suspended transversely in the frame A, on a rod C, and the lower end of the concave rests on set screws D, which pass vertically through a transverse bar E, in the frame A. The concave B, is of cast iron and the corrugations are formed of longitudinal projections *a*, which are parallel with each other and the upper and lower edges of the concave.

On the upper part of the frame A, a shaft F, is placed transversely. This shaft has a driving pulley G, placed on one end of it at the outer side of the frame A, and on the shaft F, within the frame A, three circular heads H, are placed and secured by keys *b*. The heads H, are placed at equal distances apart on the shaft F, one near each end of the shaft and the other at the center between the two end ones, as shown clearly in Fig. 2.

The face or periphery of each head H, has projections or ledges *c*, cast on it between which the flails or beaters I, are placed. The flails or beaters are of wrought iron of rectangular form, are placed on the heads H, parallel with their shaft F, and fitted between the projections or ledges *c*, which serve as braces or supports for the same. The outer or end heads H, are slotted radially at the outer sides and in line with the spaces between the projections or ledges *c*, as shown at *d*, and the ends of the flails or beaters I, are made in hook form, as shown at *e*, Figs. 2 and 3, so that the ends of the flails or beaters may fit into the slots *d*, and over the inner surfaces of the rims of the heads H, as shown clearly in Fig. 2. The flails or beaters are fitted between the projections or ledges *c*, when one of the outer end heads H, is loose on the shaft F, and consequently the ends of the flails or beaters may be snugly adjusted in the slots *d*, and the loose head then keyed on its shaft. By this arrangement it will be seen that a very simple and durable beater cylinder is obtained.

The beater cylinder is inclosed by a cap J, an induction opening *f*, being made in its front end in line with the feed trough K, to admit the grain to the cylinder and a dust discharge opening *g*, being made in the cap J, above a dust-guard L, which is of curved form, the convex side facing the feed trough, as shown in Fig. 1. The openings *f*, *g*, and guard L, extend the whole length of the beater cylinder.

The sides of the frame A, are inclosed and an incline discharge board or plane M, is placed in the frame just below the concave B.

The operation is as follows: The beater cylinder is rotated in the direction indicated by the black arrow 1, and the grain to be threshed, shown in red, is fed into the trough K, and passes through the opening *f*, between the beater cylinder and concave B, and is perfectly threshed by the action of the flails or beaters I, in connection with the concave B, the latter being adjusted nearer to or farther from the beater cylinder by turning the set screws D, D. The threshed grain and straw are discharged of course at the lower end of the concave B, and all dust and light impurities that follow the rotation of the cylinder will be arrested by the guard L, and discharged from the machine over the top of cap J, as indicated by the red arrows in Fig. 1. This guard L, it will be seen effectually protects the operator from all dust.

I do not claim a rotating beater cylinder and concave for that is an old and well known device, but,

What I claim as my invention and desire to secure by Letters Patent, is—

The peculiar construction of the wrought iron ribs I, in combination with the peculiar construction and arrangement of the cylinder heads H, to wit; the ribs with angular hooks *e*, *e*, and the cylinder heads with key seats and with slotted projections *c*, *c*, and radial slots *d*, as and for the purpose set forth.

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Witnesses:
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