

J. M. CONNEL.

Cutting-Apparatus for Harvesters.

No. 130,568.

Patented Aug. 20, 1872.

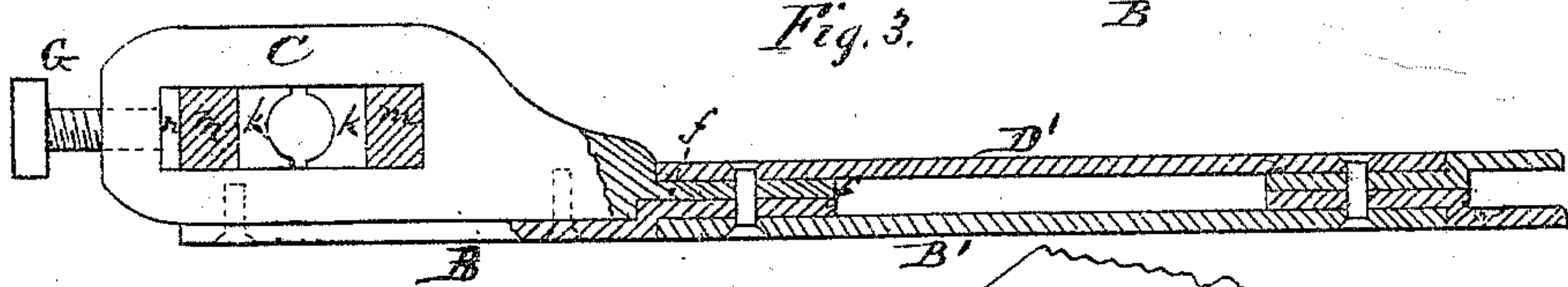
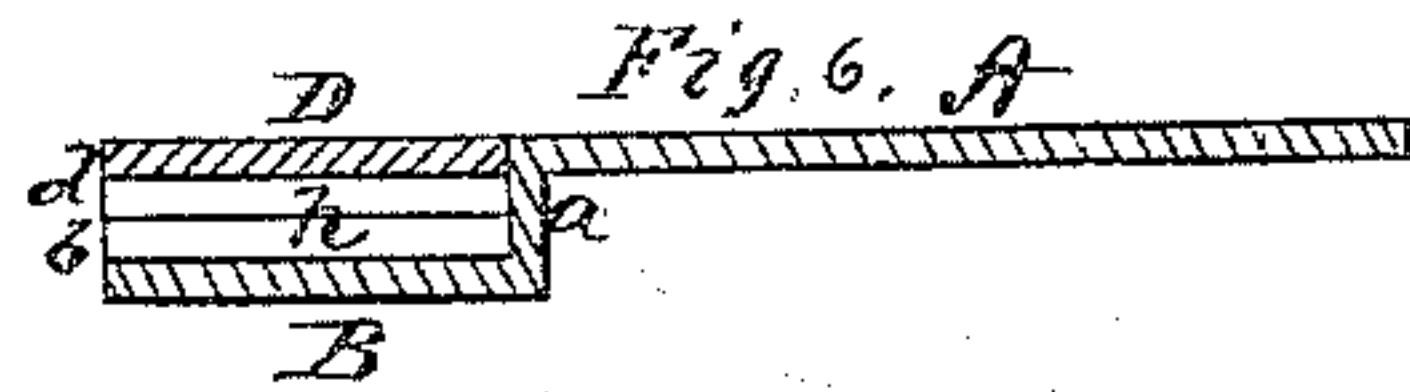
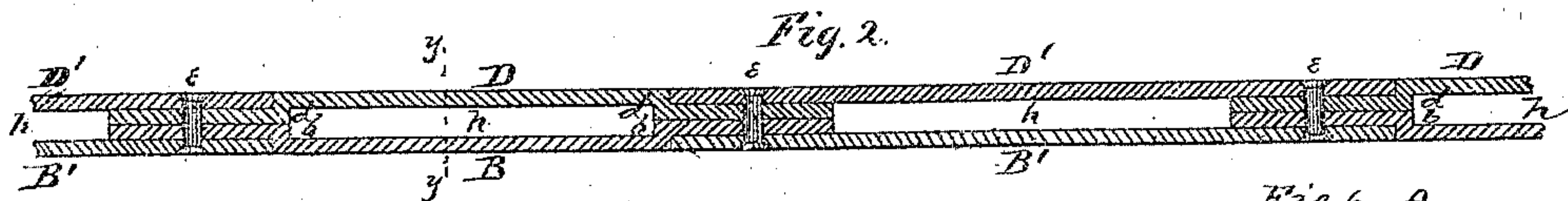
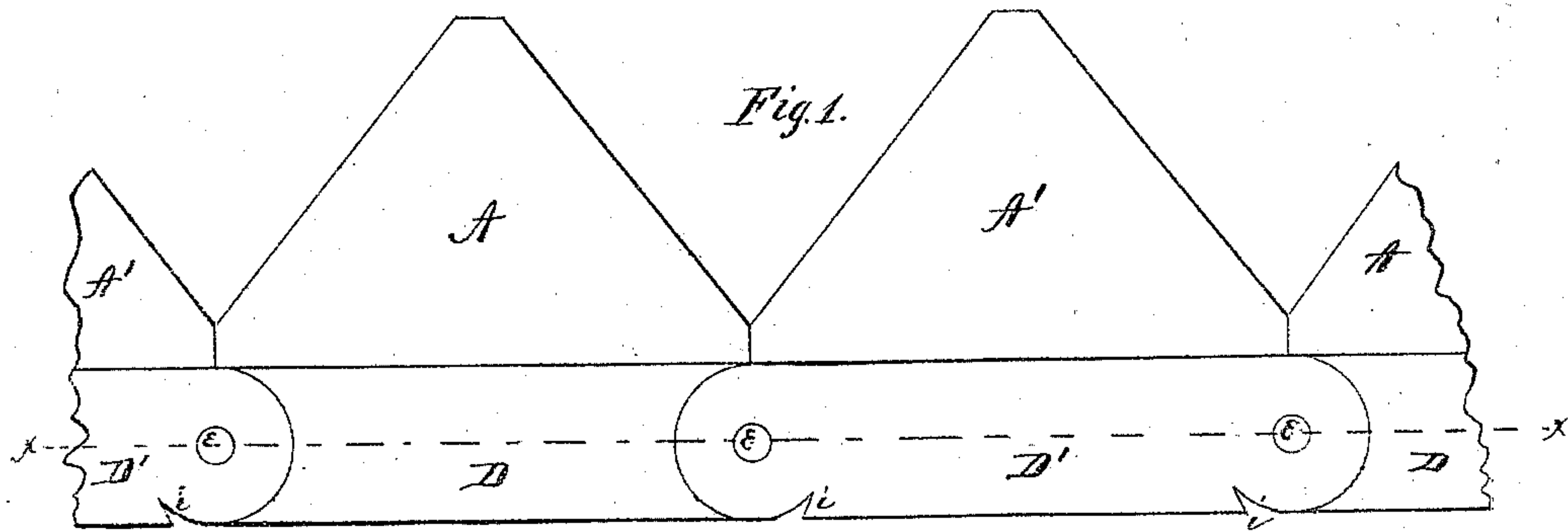


Fig. 4.

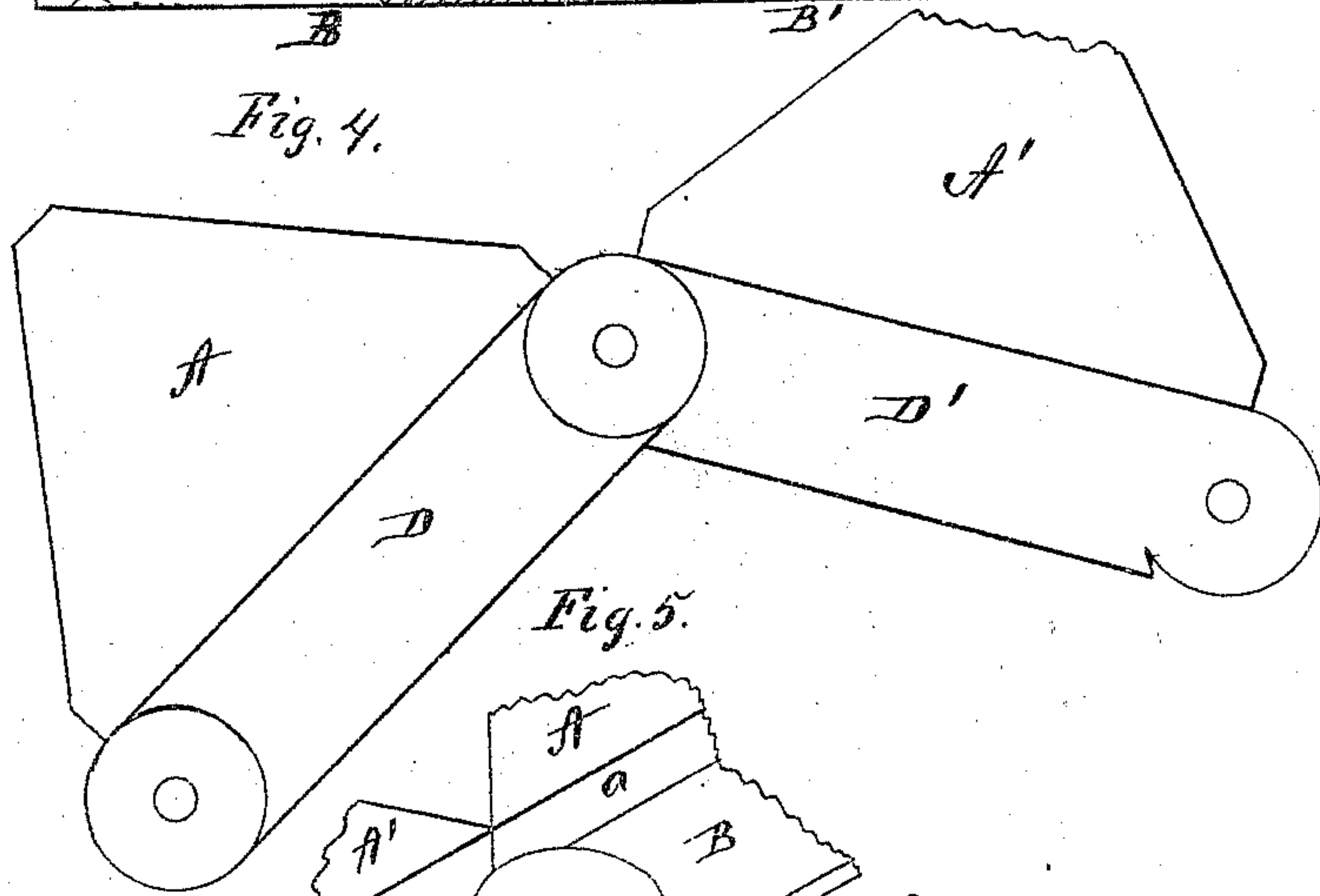
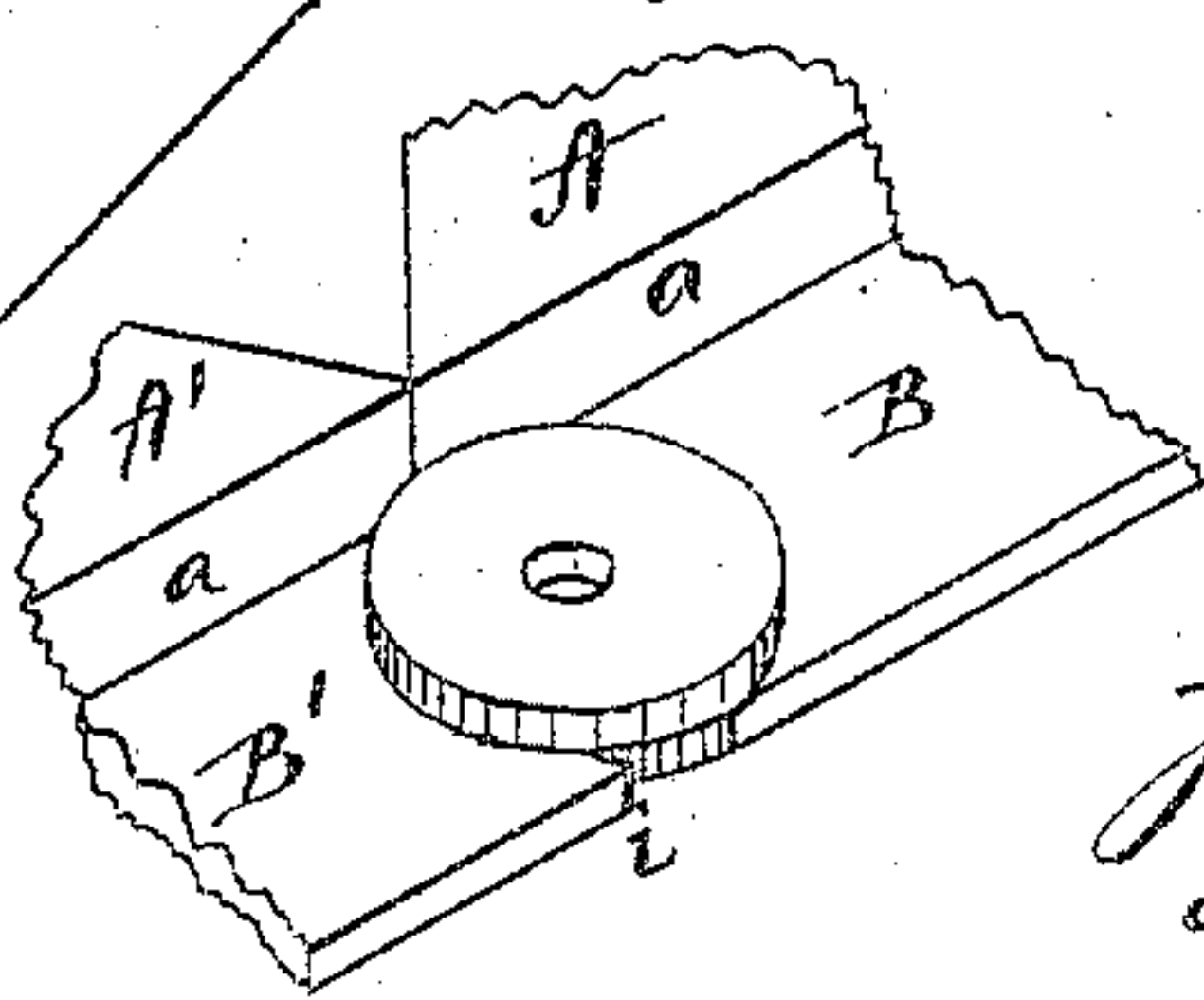


Fig. 5.



Witnesses:

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UNITED STATES PATENT OFFICE.

JAMES M. CONNEL, OF NEWARK, OHIO.

IMPROVEMENT IN CUTTING APPARATUS FOR HARVESTERS.

Specification forming part of Letters Patent No. 130,568, dated August 20, 1872.

To all whom it may concern:

Be it known that I, JAMES M. CONNEL, of Newark, in the county of Licking and in the State of Ohio, have invented certain new and useful Improvements in Harvester Cutter-Bars; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon making a part of this specification.

The nature of my invention consists in the construction and arrangement of a reciprocating and flexible "cutter-bar" for harvesters, in which each knife or cutter is combined in one piece with its cutter-bar. It also consists in the construction and arrangement of the pitman-head forming the connection of the cutter-bar and the pitman, all of which will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a plan view of a portion of my cutter-bar. Fig. 2 is a longitudinal vertical section of the same through line *x x*, Fig. 1. Fig. 3 is a similar view of a portion of the cutter-bar, showing also the pitman-connection. Fig. 4 is a plan view of two sections or knives, showing them thrown apart. Fig. 5 is a perspective view of the same at the joint of the two sections; and Fig. 6 is a transverse section of one of the knives through line *y y*, Fig. 2.

A and A' represent two adjoining sections or knives of a harvester cutter-bar, each knife or section having at its base a downward-projecting shoulder, *a*, as shown more fully in Figs. 5 and 6. From the lower edge of the shoulder *a* extends toward the rear a bar, B or B', respectively, for the two knives, which bar is made in one piece with its knife, and its plane parallel with the plane of the knife. The bars B and B' when joined together, as will be hereinafter described, form the regular cutter-bar, which moves in the usual guides and fingers, thus each section being a combined cutter and cutter-bar. The ends of the bar B are turned up or shouldered, as shown at *b*, the thickness of the bar, the ends being, however, parallel with the body of the bar. The bar B' is,

on the contrary, entirely straight, and its ends fit under the ends of the adjoining bars B, making the entire under surface of the cutter-bar perfectly smooth and even. Upon the bar B is laid a bar or link, D, the ends of which are shouldered at *d* in precisely the same manner as the ends of the bar B, but in the opposite direction—that is, downward instead of upward. Thus the bars B and D only come in contact at their ends, leaving a slot or opening, *h*, between them the entire length of said bars from shoulder to shoulder. Upon the ends of the bars D D' are then laid other straight bars or links, D' D', corresponding with the bars B' of the alternate sections, forming also slots *h*, as shown. Through the ends of the bars B B' and D D' thus laid upon each other is passed a rivet or bolt, *e*, which joins them together, and as the ends of said bars are rounded, as shown, the sections are allowed to turn on said pivot. The various shoulders *a* of the knives *b* of the bars B, and *d* of the bars D, are of such size that not only will the under surface of the cutter-bar be perfectly smooth and even, as already mentioned, but the upper surface of the same—that is, of the bars D D'—also be even, and even with the surfaces of the knives. The bars B B' and D D' form together the entire cutter-bar, which, by means of the spaces or slots *h h* in the same, is rendered much lighter than those heretofore in use, where the cutter-bar has to be solid throughout; also, by the joints, the knives may be ground or sharpened without being taken apart simply by turning them open, as represented in Fig. 4, the bars B' and D' having notches *i i* near the ends to allow of such spreading apart. C represents the pitman-connection provided with a tenon, *f*, as shown in Fig. 3. To this pitman-connection one of the knife-sections A is secured by screws passing through its bar B into the under side of said connection, the end of said bar fitting against the under side of the tenon *f*, while the bar D' of the adjoining section fits on top of said tenon. The adjoining bar B', fitting under the end of this bar B, completes the joint at this point, when the rivet or screw is put through. In the connection or head C is a mortise for the insertion of the washers or bisected box *k*, which surrounds the crank-pin or wrist on the pitman, and at

each end of said box is inserted a rubber cushion, *m*, for the purpose of breaking the force of the concussion at each stroke of the pitman. A set-screw, *G*, passes through the head *C* and against a plate, *n*, which plate bears against one of the cushions *m*, so that by means of said set-screw the washers or bisected box *k* may readily be tightened around the wrist-pin of the pitman.

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

1. The knife-section *A*, provided with shoulder *a* and bar *B*, each end of said bar having a shoulder, *b*, substantially as and for the purposes herein set forth.

2. The knife *A'*, provided with shoulder *a* and straight bar *B'*, all in one piece, and used with the straight link *D* to form one section

of a harvester cutter-bar, substantially as herein set forth.

3. The combination of the knife-sections *A A'* with bars *B B'* and *D D'*, all being constructed as shown and described, forming, when joined together, a flexible cutter-bar for harvesters, with spaces or slots *h h*, substantially as and for the purposes herein set forth.

4. In combination with the knife-sections *A A'*, bars *B B'*, and links *D D'*, the pitman-head or connection *C* provided with an exterior tenon, *f*, all substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 7th day of February, 1872.

Witnesses:

J. M. CONNEL.

EDM. F. BROWN,
C. L. EVERT.