

(No Model.)

2 Sheets—Sheet 1.

J. O. BROWN.

ENDLESS CUTTER FOR MOWERS AND REAPERS.

No. 431,799.

Patented July 8, 1890.

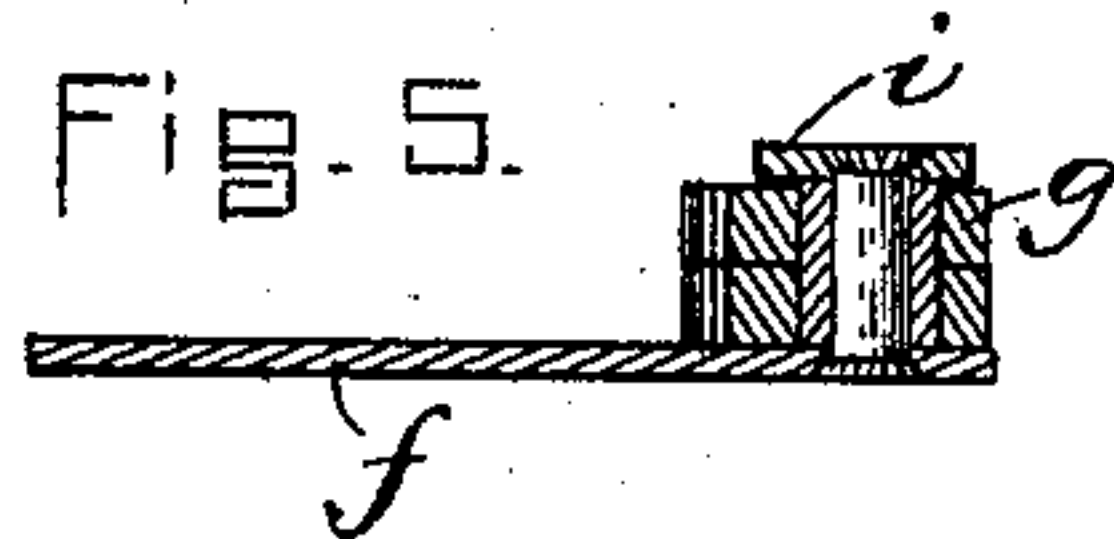
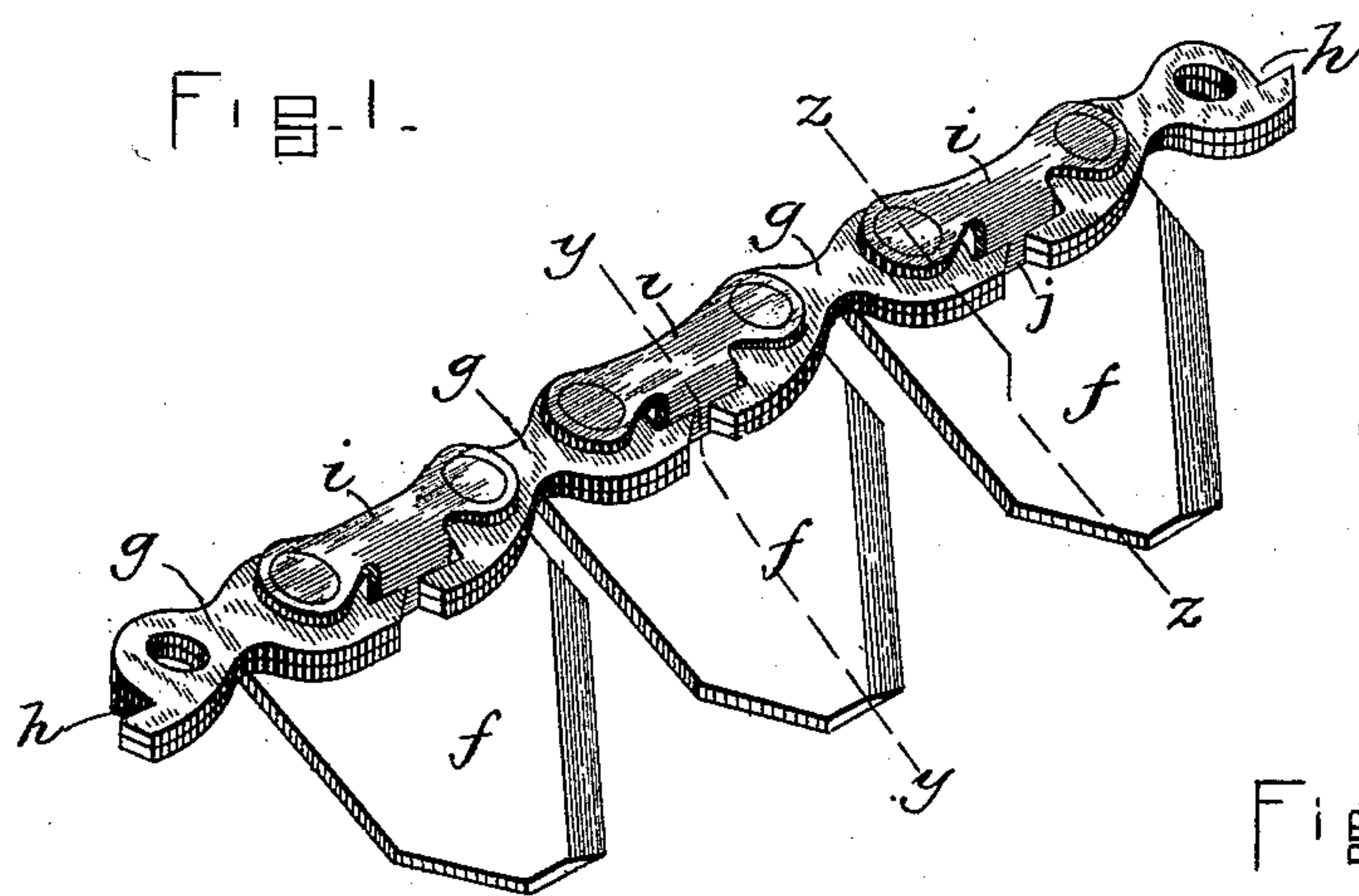


FIG. 2.

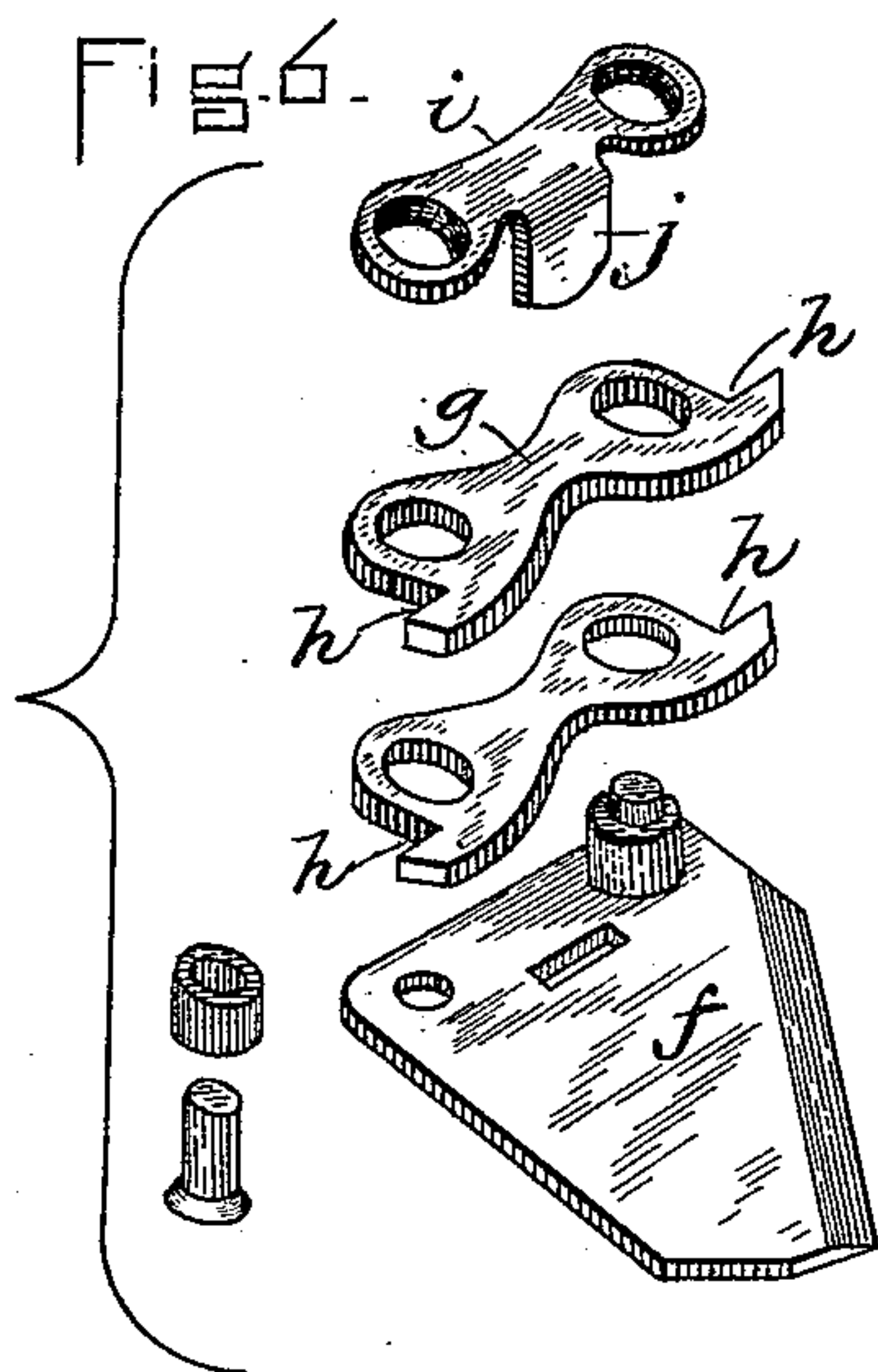
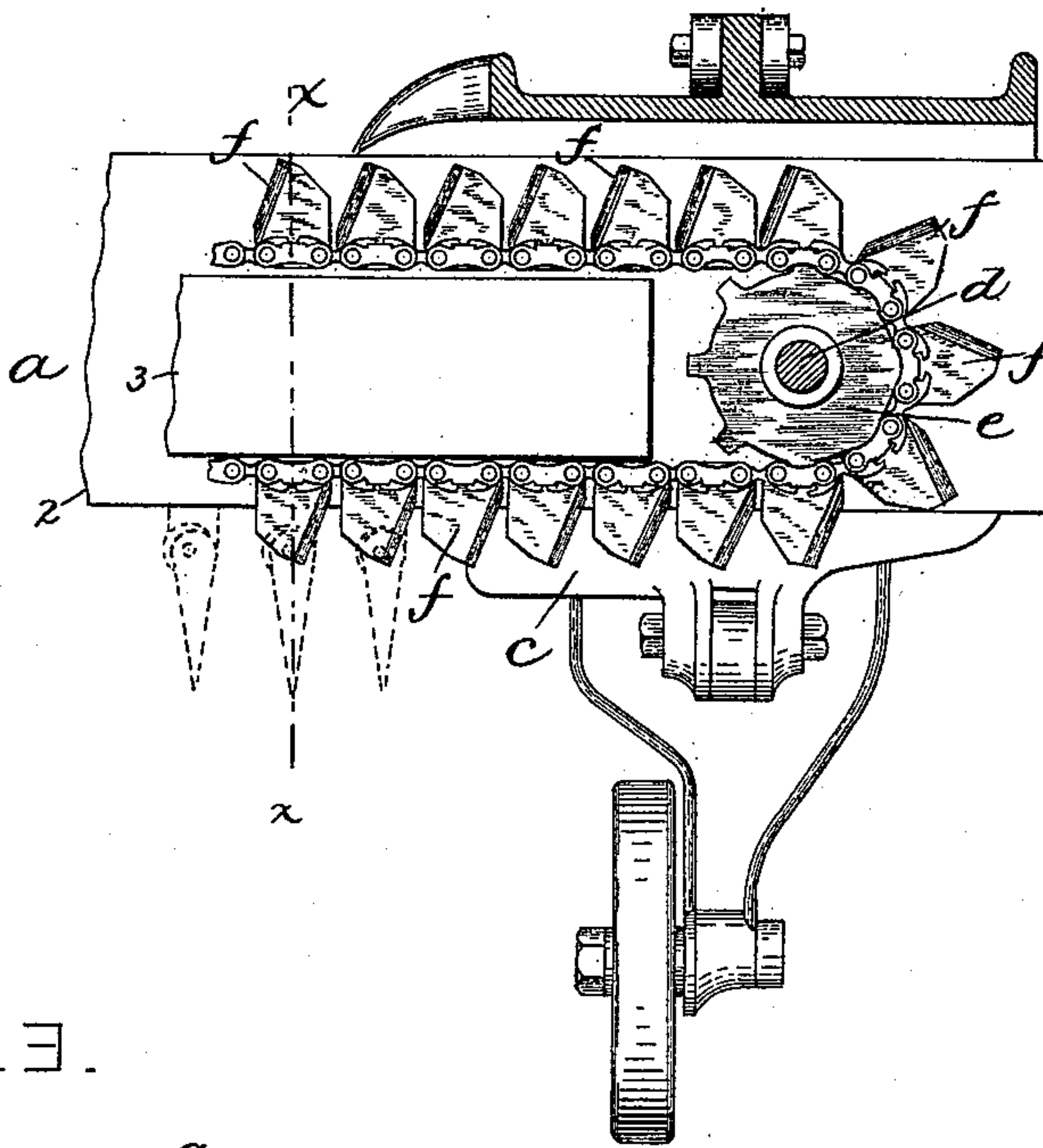
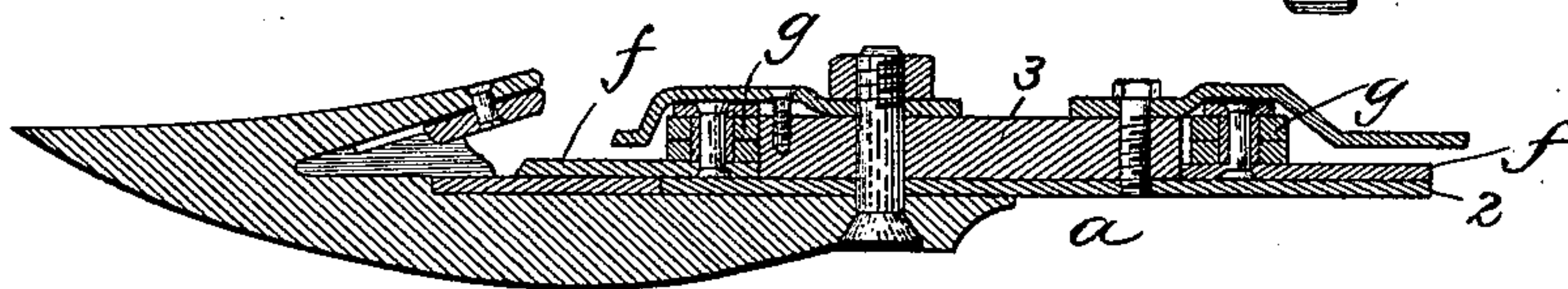


FIG. 3.



WITNESSES.

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(No Model.)

2 Sheets—Sheet 2.

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Fig. 7.

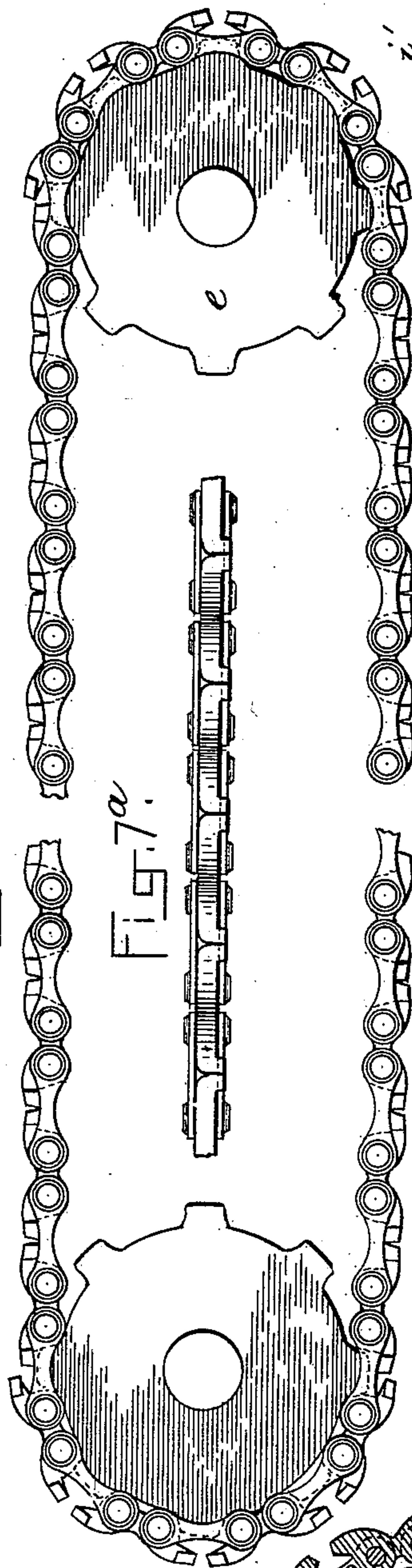


Fig. 7a.



Fig. 9.

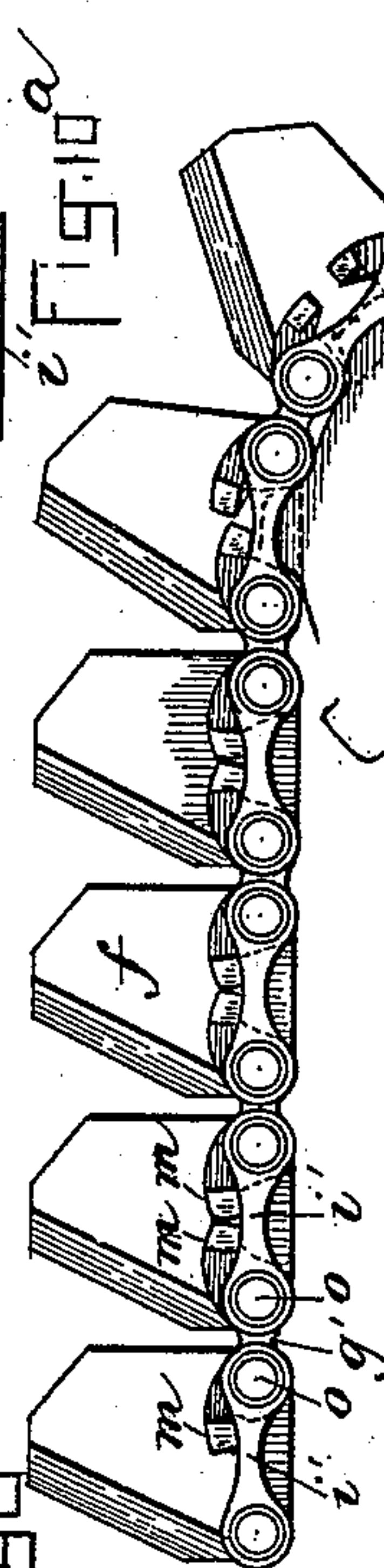


Fig. 10.

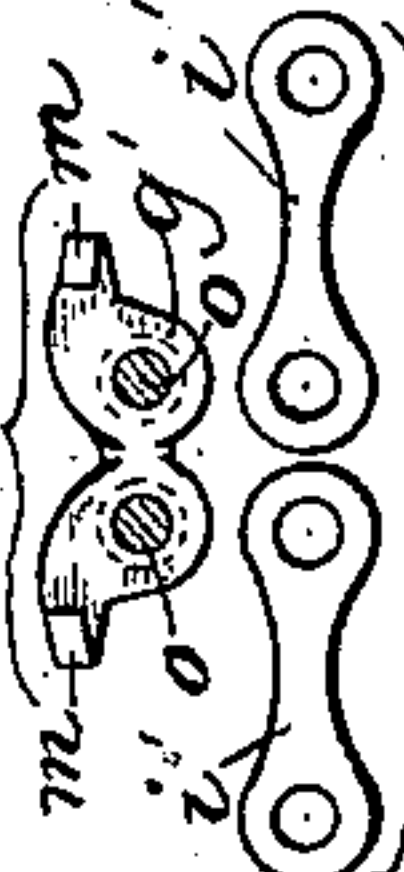


Fig. 10b.

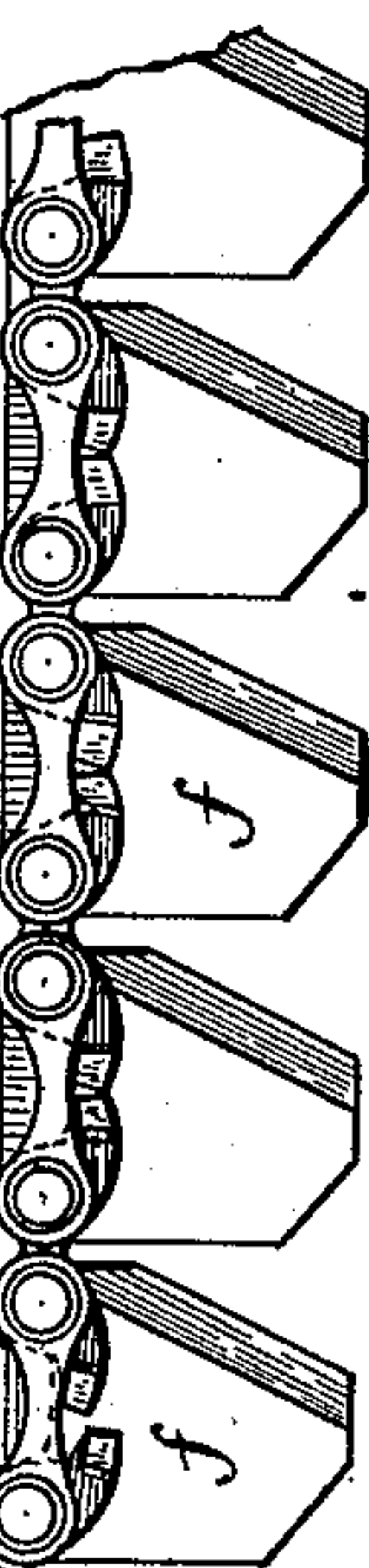


Fig. 8.

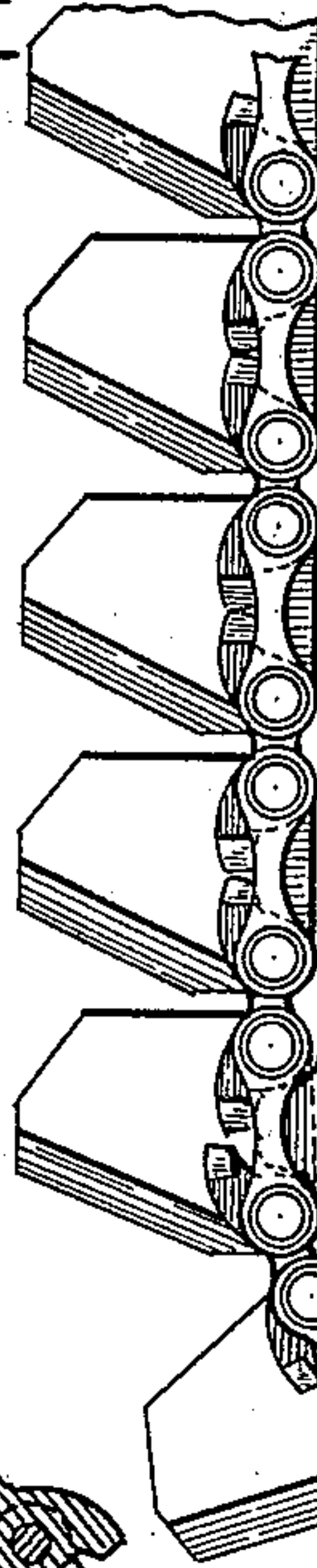
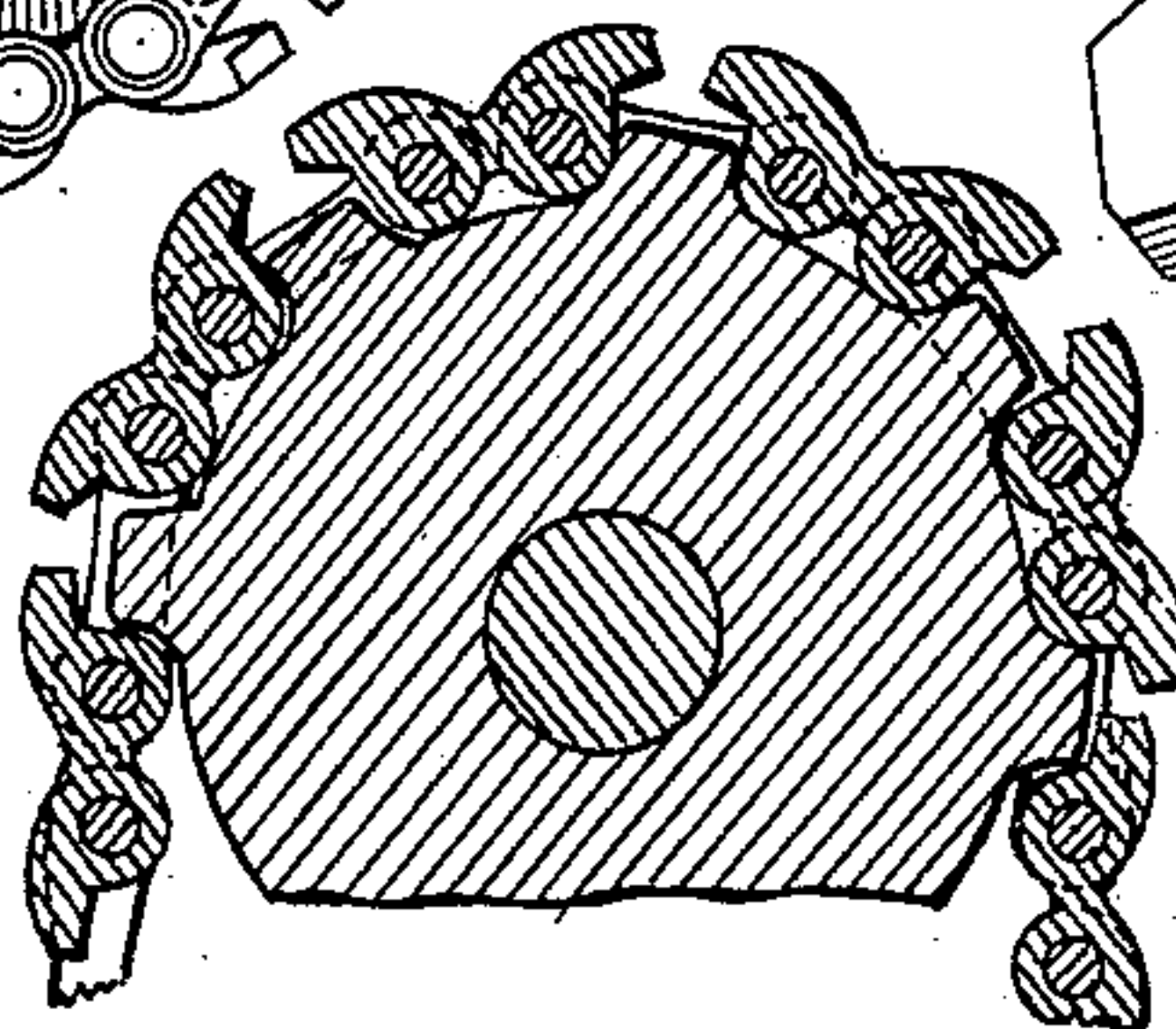


Fig. 11.



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UNITED STATES PATENT OFFICE.

JAMES O. BROWN, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO THE BROWN
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ENDLESS CUTTER FOR MOWERS AND REAPERS.

SPECIFICATION forming part of Letters Patent No. 431,799, dated July 8, 1890.

Application filed October 10, 1888. Serial No. 287,737. (No model.)

To all whom it may concern:

Be it known that I, JAMES O. BROWN, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new
5 and useful Improvements in Endless Cutters for Mowers and Reapers, of which the following is a specification.

This invention has for its object to provide a chain chiefly intended to connect the knives
10 of an endless-cutter mowing-machine, said chain being of such construction that its links and the knives attached thereto will not be capable of being bent or curved inwardly when it is in operation; and to this end the
15 invention consists in the improvements which I will now proceed to describe and claim.

In the accompanying drawings, forming a part of this specification, Figure 1 represents a perspective view of a part of the endless
20 series or chain of knives. Fig. 2 represents a top view of a part of a finger-bar and of the knives thereon. Fig. 3 represents a transverse section on line *x x*, Fig. 2. Figs. 4 and 5 represent, respectively, sections on lines *y y*
25 and *z z*, Fig. 1. Fig. 6 represents one of the knives and the parts of the chain-links separated. Fig. 7 represents a top view of a chain of different construction without the knives. Fig. 7^a represents an edge view of
30 the same. Fig. 8 represents a top view of the chain shown in Fig. 7 with the knives attached thereto. Fig. 8^a represents an inverted edge view of the same. Figs. 9, 10, 10^a, 10^b, and 11 represent detail views.

35 The same letters of reference indicate the same parts in all the figures.

In the drawings, *a* represents a finger-bar of any suitable construction. As here shown, it is composed of a flat plate 2, preferably of
40 saw-blade steel, and a stiff longitudinal rib 3 on the upper side of said plate, the two being securely bolted together. The inner end of the finger-bar is secured to a shoe *c*, having bearings for a short vertical shaft *d*,
45 which is driven by power from the driving-axle of the machine, and has affixed to it a sprocket-wheel *e*, which impels the series of knives *f* by engaging with the sprocket-chain links connecting said knives. The chain
50 passes around a loose sprocket-wheel at the outer end of the finger-bar.

In carrying out my invention I construct the links so that the chain is incapable of bending inwardly, and can only bend outwardly, or in the direction required to enable
55 it to pass around the sprocket-wheel, the chain being thereby made rigid, so that the knives cannot yield and swing backwardly, and the chain cannot be thrown inwardly by its speed or momentum with a jerking or
60 "slatting" motion against the rib or guide 3. To this end I construct the links which connect the knives so that they can turn on each other only in the direction required to permit
65 the chain to pass freely around the sprocket-wheels, and cannot turn so as to permit the knives to yield to pressure exerted on their cutting-edges nor to permit the chain to be thrown inwardly against the guiding sides of
70 the rib. This result is best accomplished by the construction shown in Figs. 1 to 6, in which I have shown the chain as composed of links *g*, provided with recesses *h* at their ends, and the intermediate links *i*, provided
75 with downwardly-projecting tenons *j*, formed to enter said recesses, as shown in Fig. 1. This form and relative arrangement of the tenons and recesses is such that the links can freely turn on each other in the direction
80 required to separate the tenons and recesses; but the turning motion of the links in the opposite direction is prevented by the entrance of the tenons into the recesses, as will be readily seen. I do not limit myself to this
85 construction, but may give the links any suitable form whereby the chain will be braced so as to resist inward pressure against its sides.

In Figs. 7 to 11, inclusive, I have shown the chain made up of links *i' i'* of the form shown
90 in Fig. 10^b, and intermediate links *g'* of the form shown in Fig. 10, the links *i'* being used in pairs, one placed above and the other below the links *g'*. Each link *g'* is connected
95 by rivets *o o* with the adjacent ends of two pairs of links *i'*, and the links *g'* are provided with lateral fingers or stops *m m* at their ends. These fingers abut against the outer edges of the links *i*, and the finger on each end of one
100 link *g'* also abuts against the finger on the adjacent end of the adjacent link *g'*, as shown in Figs. 7, 7^a, 8, 8^a, and 9, and these two stops

for the ends of the links g' prevent the chain from bending inwardly.

The knives f are riveted to the links, as shown.

5 I do not limit myself to the use of the improved chain herein described for endless cutters, for the chain may be used without the knives, as shown in Fig. 7.

I claim—

10 1. A chain composed of two sets or series of links, which form the connections of each other, the links of one set resting on the surfaces of the links of the other set and connected with the same by pivotal studs passing through the links transversely with their
15 surfaces, one set of links having lugs which extend over and abut against the backs or edges of the adjacent connecting-links, and one of the sets of links having lateral lugs
20 extending at right angles with the surfaces of the links and abutting against the edges of the other set of links, as set forth.

2. A chain composed of two sets or series of links, which form the connections of each

other, the links of one set resting on the sur- 25
faces of the links of the other set and connected with the same by pivotal studs passing through the links transversely with their surfaces, and one set of links having lugs which extend over and abut against the backs 30
or edges of the adjacent connecting-links, in combination with knives secured to the links by said studs, all substantially as and for the purposes set forth.

3. A chain composed of the links i , having 35
the lateral projections or tenons j , in combination with the connecting-links g , having the recesses h in their ends, substantially as shown, and operating as set forth.

In testimony whereof I have signed my 40
name to this specification, in the presence of two subscribing witnesses, this 21st day of August, A. D. 1888.

JAMES O. BROWN.

Witnesses:

C. F. BROWN,
W. C. RAMSAY.