

G. SWEET.
Harvester-Cutters.

No. 157,243.

Patented Nov. 24, 1874.

Fig. 1.

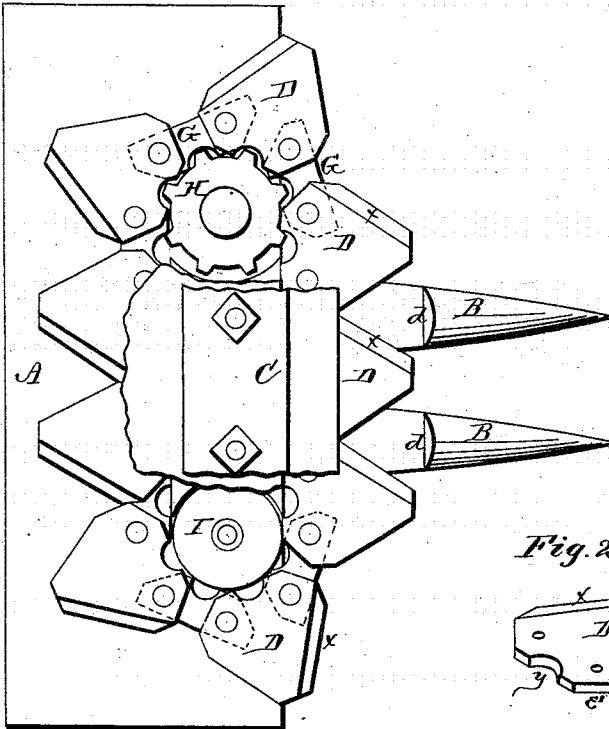


Fig. 2.

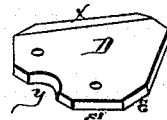


Fig. 3.

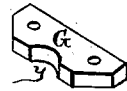
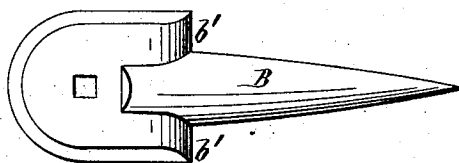


Fig. 4.



WITNESSES

Henry N. Miller
L. L. Everh.

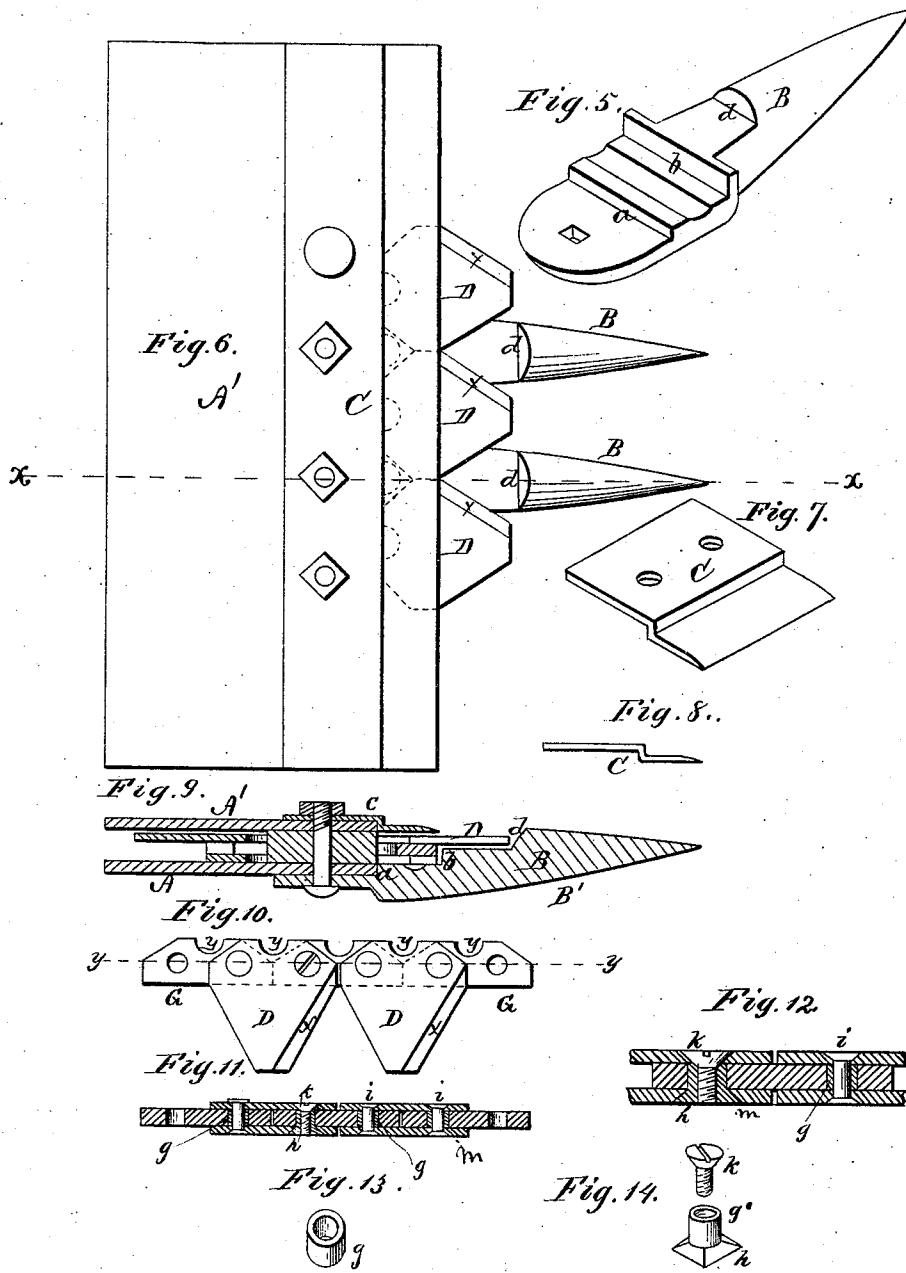
INVENTOR

George Sweet,
per Alexander Mason
Attorneys

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WITNESSES

Henry N. Miller
Kellman A. Hall.

INVENTOR

George Sweet
per Alexander M. Mavor

Attorneys

UNITED STATES PATENT OFFICE.

GEORGE SWEET, OF DANSVILLE, NEW YORK.

IMPROVEMENT IN HARVESTER-CUTTERS.

Specification forming part of Letters Patent No. **157,243**, dated November 24, 1874; application filed August 29, 1874.

To all whom it may concern:

Be it known that I, GEORGE SWEET, of Dansville, in the county of Livingston and in the State of New York, have invented certain new and useful Improvements in Cutter-Bars for Harvesters and Mowers; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, 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 cutter-bar for harvesters and mowers, as 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 drawings, in which—

Figure 1 is a plan view of the cutter-bar with a portion of the top plate cut away, so as to show the internal construction and working of the same. Fig. 2 is a perspective view of one of the knives or cutters. Fig. 3 is a similar view of one of the links that connect the knives or cutters. Fig. 4 is a bottom view of one of the fingers. Fig. 5 is a perspective view from the top of the same. Fig. 6 is a plan view of the cutter-bar. Figs. 7 and 8 show the construction of a guard-bar placed over the knives or cutters. Fig. 9 is a transverse section through the line *xx*, Fig. 6. Fig. 10 is a plan view of two of the knives or cutters connected by the links. Fig. 11 is a longitudinal section of the same through the line *yy*, Fig. 11. Fig. 12 is a similar section, in enlarged dimensions. Fig. 13 is a perspective view of a collar or sleeve which surrounds the rivets connecting the knives to the links. Fig. 14 is a similar view of a bolt and sleeve-nut used at certain places to connect the knives and links.

A A' represent two metallic plates, between which the operating portions of the bar are secured. BB represent the finger-guards, which are bolted to the under side of the under plate A. These fingers are provided with shoulders *a*, *b*, and *d*, as shown in Figs. 5 and 9, the shoulder *a* fitting against the front edge of the plate A. The shoulder *b* is for the links that

connect the knives, and the shoulder *d* is in front of the front ends of the knives. Upon each side of the finger-guards B are projections *b'*, which serve to strengthen the finger-guards, and at the same time form a solid bearing of one finger against the one adjoining it. DD represent the cutters or knives, which are constructed, as shown, with only one cutting-edge, *x*. These cutters or knives are connected by means of links G G, pivoted to them. The links are made of any suitable metal, and of proper length and thickness. They are made straight upon the outer edge, and in the rear edge is formed a semicircular notch or opening, *y*, into which the teeth of the gear-wheel H enter to give motion to the chain formed by the links and the knives or cutters. The corners of the edge which is notched are cut off, as shown in Fig. 3, at obtuse angles. The back or rear end of the knife or cutter is also provided with a semicircular opening or notch, *y*, similar to that of the link, and for the same purpose. When the links and knives or cutters are connected together by the pivots and rivets hereinafter described they form an endless chain, which revolves around the gear-wheel H and the pulley-wheel I. The teeth of the gear-wheel H catch into the semicircular openings or notches *y* in the links G and knives D, and, when rotated, cause the endless chain to move around said wheel H and pulley I, as already stated.

It will thus be seen that the wheel H, with its teeth, has a direct action upon the cutters or knives, as well as upon the links. The cutters or knives are cut or beveled off at their rear corners, as seen at *e e'*. This is done so that, as they come up in line to commence cutting, their rear corners will fit snugly together and prevent straw or grass from catching between them and thus impede their work. The two wheels H and I are secured between the plates A and A' upon suitable bearings, and the wheel H has power applied to its axle in any known, usual, or convenient manner. The knives or cutters, when in operation, always move in one direction. On top of the top plate A' is secured a continuous plate or guard, C, of suitable material and thickness, and made in step form, as shown in Figs. 7 and 8. The front part of this plate or con-

tinuous button-guard lies over the cutters or knives, and serves to keep said cutters or knives in close contact with the finger-guards B, attached to the under plate A. By this means I am enabled to keep the finger-guards from clogging under any circumstances, allowing them to clear themselves, and at the same time confining the cutters or knives closely to the finger-guards; and I also, by this construction, make a practical, light, efficient, and cheap and durable cutter-bar for harvesters or mowers.

In securing the cutters or knives to the links I use a plain rivet, *i*, in connection with a collar or sleeve, *g*, for the ordinary fastenings of the links, and a screw-rivet, *k*, with square-headed sleeve or burr *h*, at points requiring disconnection, for the purpose of repair or grinding. A bottom plate, *m*, is used under each link to rivet to. The sleeve *g* is inserted in the eye of the link, so as to prevent the link and the cutter or knife from binding by the process of riveting to the under plate *m* of the section, which would impede free motion around the wheel H and pulley I. When the eye of the link is thus provided with the sleeve *g* the rivet is inserted. The sleeve fits snugly but not tightly in the eye, and the rivet fits tightly in the sleeve. The heads of the screws and rivets, as also the square-headed sleeve *h*, are countersunk into the knives or cutters and lower plates of the sections, so that all will work smoothly. I use the screw *k* in some of the sections of the endless chain, so that they may at these points be easily disconnected.

The knives being wider at or near the base of their cutting-edge than the finger-guards over which they pass, and being so arranged that a portion of their cutting-edge is at all times in contact with and in operation upon the standing grass or grain, at no instant is the operation of cutting wholly suspended when the machine is in motion. The effect of this

is to give steadiness of motion and continuing effect to the knives or cutters.

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

1. The combination of the links G G, as described, connected to the under sides of two adjacent knives, D D, and the plates *m m*, connected to the ends of two adjacent links, the links breaking the joints between the knives, and the plates breaking the joints between the links, all substantially as set forth.

2. In combination with the links G and under break-joint plates *m*, with rear notches *y*, the knives D, with one edge sharpened and their corners cut at *e e'*, and their backs provided with the notches *y*, corresponding to the notches in the links and plates, and placed above links and plates, substantially as and for the purposes herein set forth.

3. In a harvester-cutter consisting of a series of knives linked together and forming an endless chain, and revolving between two plates, A and A', the continuous removable step-shaped plate C, connected by bolts to the top plate A', projecting over the knives, with its outer edge feathered, substantially as and for the purposes herein set forth.

4. In combination with the knives D, links G, and under plates *m*, connected by the collars *g* and rivets *i*, as described, the screw *k*, with square-headed sleeve *h*, substantially as and for the purposes herein set forth.

5. The sleeve or collar *g*, with rivet *i* passing through it, in combination with the knives or cutters, and link and under plates, as and for the purposes herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 20th day of August, 1874.

GEO. SWEET.

Witnesses:

ABM. LOZIER,
T. B. GRANT.