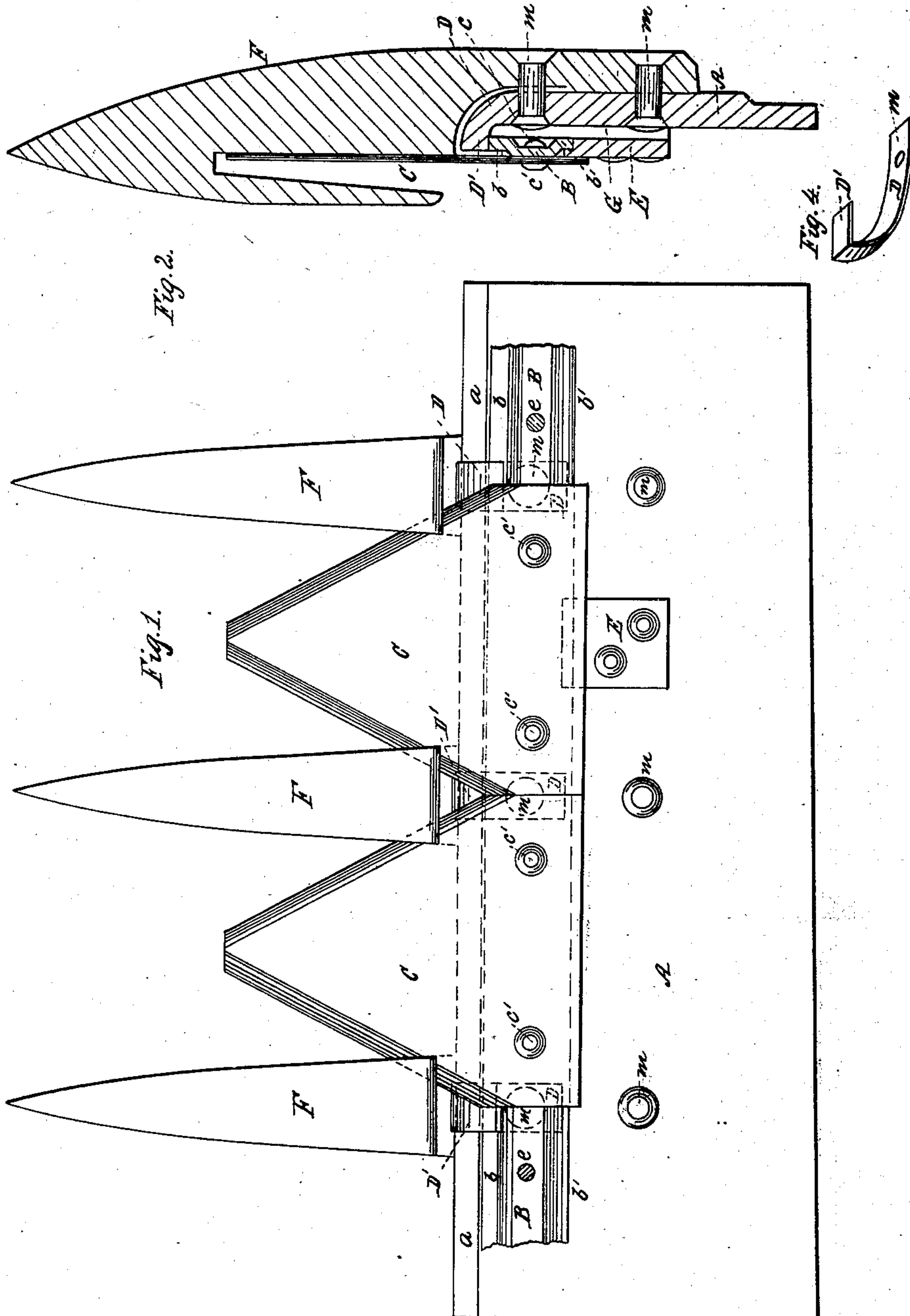


R. DUTTON.

Cutting Apparatus for Harvesters.

No. 74,211.

Patented Feb. 11, 1868.



Witnesses:

L. D. Lewis
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RUFUS DUTTON, OF BROOKLYN, NEW YORK.

Letters Patent No. 74,211, dated February 11, 1868.

IMPROVEMENT IN CUTTING-APPARATUS FOR HARVESTERS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, RUFUS DUTTON, of Brooklyn, in the county of Kings, and State of New York, have invented certain new and useful Improvements in the Construction of Knife-Bars for Harvesters and their connection with the finger-bar; and I do hereby declare that the following is a full, clear, and exact description thereof, and of their mode or manner of operation, reference being had to the accompanying drawings, and to the letters of reference marked thereon, and making a part of this specification.

The nature of my invention consists in a new and improved construction of the knife-bar for harvesting-machines, whereby reduced weight with equal or increased strength can be secured, and with less friction in its vibrations; and also in a new and improved manner of holding the knife-bar down upon its bearings, and the knives against the lower side of the slot in the finger, so as to secure a perfect and easy cut.

Figure 1 represents a section of a finger-bar with the fingers attached thereto, and the knife-bar and knives in position.

Figure 2 is a section of fig. 1, through one of the fingers.

Figure 3 is a detached view of plate D.

Knife-bars of harvesting-machines, as heretofore constructed, have been and are a flat piece of iron or steel, resting and sliding upon its broadest surfaces, and held down against their bearings on the finger-bar by a button extending over or nearly over the upper side of such knife-bars. There has consequently been a very considerable frictional surface, and as both the upper and under surfaces must be smooth, it has been necessary to countersink, both in the knife-bar and the knife, the rivet holding these two together, and this operation or construction has and does necessarily weaken the parts.

My invention relates more particularly to such a construction of knife-bar as diminishes the frictional surface, and permits the knives to be connected to it without countersinking or weakening it, at the same time that it makes the bar stiffer and stronger; and also to the application and use, for holding the knives against and down upon the fingers, of a new and improved device, in place of the ordinary button.

Instead of making the knife-bar of a flat piece or bar of metal, as heretofore constructed, I form such knife-bar substantially as seen at B, figs. 2 and 3, that is, of a metallic plate, having its edges depressed below the level of the main part of the bar, so that the bar rests only on such edges, instead of on its whole flat surface, as heretofore. By this form of construction the frictional surface on the under side of the bar is much reduced, and the depressed edges also act like ribs to strengthen the knife-bar, and consequently allow such bar to be made much lighter and have equal strength.

It has also heretofore been necessary, as the knife-bar rested on its entire surface, that the rivets, used for fastening the knives to the knife-bar, should be countersunk, so as to secure a smooth surface on the bottom of the knife-bar. Such construction, however, by so much weakens the bar. But, by depressing the edges of the knife-bar, as described, sufficient space is obtained below the main part of the bar for the head *c* of the rivets referred to, without having such rivets interfere with the movements of the knife-bar. The necessity of countersinking the bar for the head of the rivet is thus obviated, and the bar consequently left so much the stronger. The expense of countersinking is also saved, which in the aggregate is considerable.

Fig. 2 also shows an improved mode or device for holding the knife-bar B in position upon and over the finger-bar, so that the knives C will be kept down against the under side of the slot of the finger. A shows the finger-bar, fastened to the finger F by the rivets *m m*. G is a steel strip or bearing, on which the knife-bar B moves, there being generally used of such bearings from three to six in a machine. E is a button, which extends over the depressed back edge of the bar B, and holds it down against the bearing G. D represents a plate of steel, which is curved to correspond with the bottom and raised edge of the finger-bar F, and which is generally about half the breadth of the finger, as shown more plainly in fig. 1. Such plate, D, is let into the finger, as shown in fig. 2, and its upper end is turned back over the top of the raised edge of the finger-bar, in which is cut a recess to receive it. Such part of the plate D also extends back beyond the top of the finger-bar sufficiently to cover the depressed front edge of the knife-bar, and hold it down against the bearing G, and the knife against the finger. The use and application of such plate, D, secures the knife-bar and its knives to be held

down upon each and every finger, whereas, in the use of buttons, as ordinarily applied, there is but one button for every five or six fingers. A more certain and easy cut is thus obtained.

Buttons, as ordinarily applied and used, fastened to the finger behind, and projecting over the knife-bar, are also very liable to be clogged from cut grass, dirt, &c., getting between them and the knife-bar, and the presence of such dirt, &c., causes the parts to wear rapidly. By the use, however, of the securing-plate D and the button E, as above described, this danger or liability is almost wholly removed, and more completely by causing the knife-blade C to extend back far enough to cover the front part of the button E, such knife-blade thus covering both the front and back devices for holding the knife-bar down, and almost wholly preventing anything entering to clog such bar.

By the use, also, of such devices to hold down the knife-bar, there is no necessity that the upper surface of the knife-blades over the knife-bar should be smooth, as when a button extends over the entire breadth of the bar, and therefore the head *c'* of the rivet, fastening the knife to its bar, can stand above the knife, as seen in figs. 2 and 3, and all necessity for countersinking such rivets into the knife-blade is removed.

The plate D is fastened by the same rivet that secures the finger-bar to the finger, and such plate is also held rigidly in position by being let into the finger and into the top edge of the raised part of the finger-bar, as before described.

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

1. A knife-bar, having both its front and back edges depressed, so as to form, when combined with the knives or cutters, recesses or openings between the edges of the knife-bar and the knives, and having its central part recessed or raised longitudinally from the under side, the whole constructed substantially as and for the purposes set forth.

2. The application and use of the plate D, arranged and held as described, for holding down the front edge of the knife-bar, substantially as and for the purposes set forth.

3. In combination with such plate D, for holding down the front edge of the knife-bar, the button E, arranged as described, for holding down the back edge of such bar.

R. DUTTON.

Witnesses:

S. D. LAW,

W. R. RONALDS.