G. W. FLORA.

CUTTING APPARATUS.

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960,874.

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Fig. 1.

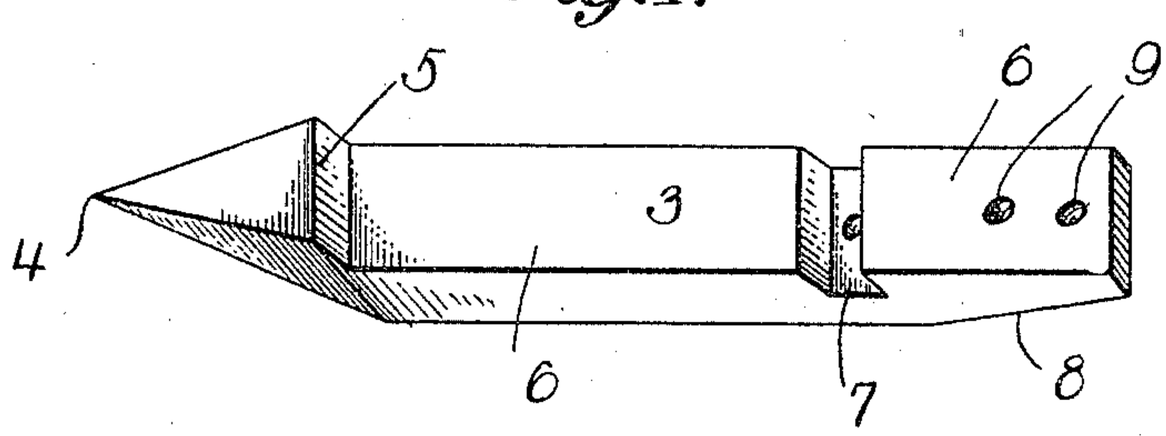



Fig. 2.

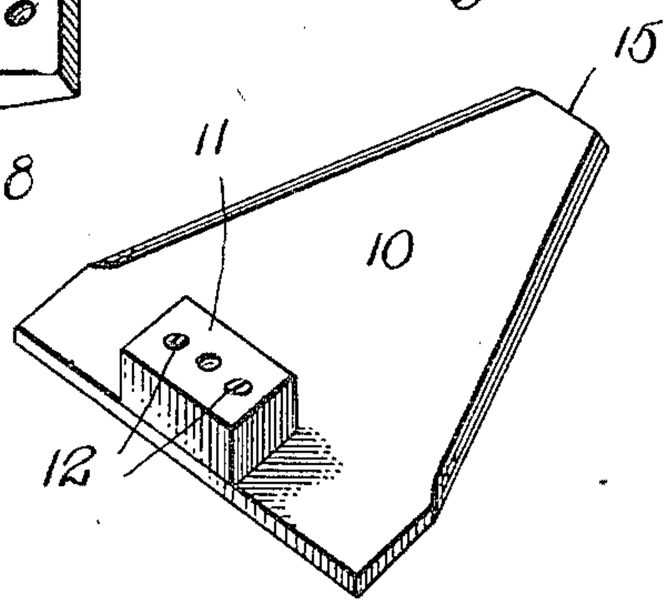



Fig. 3.

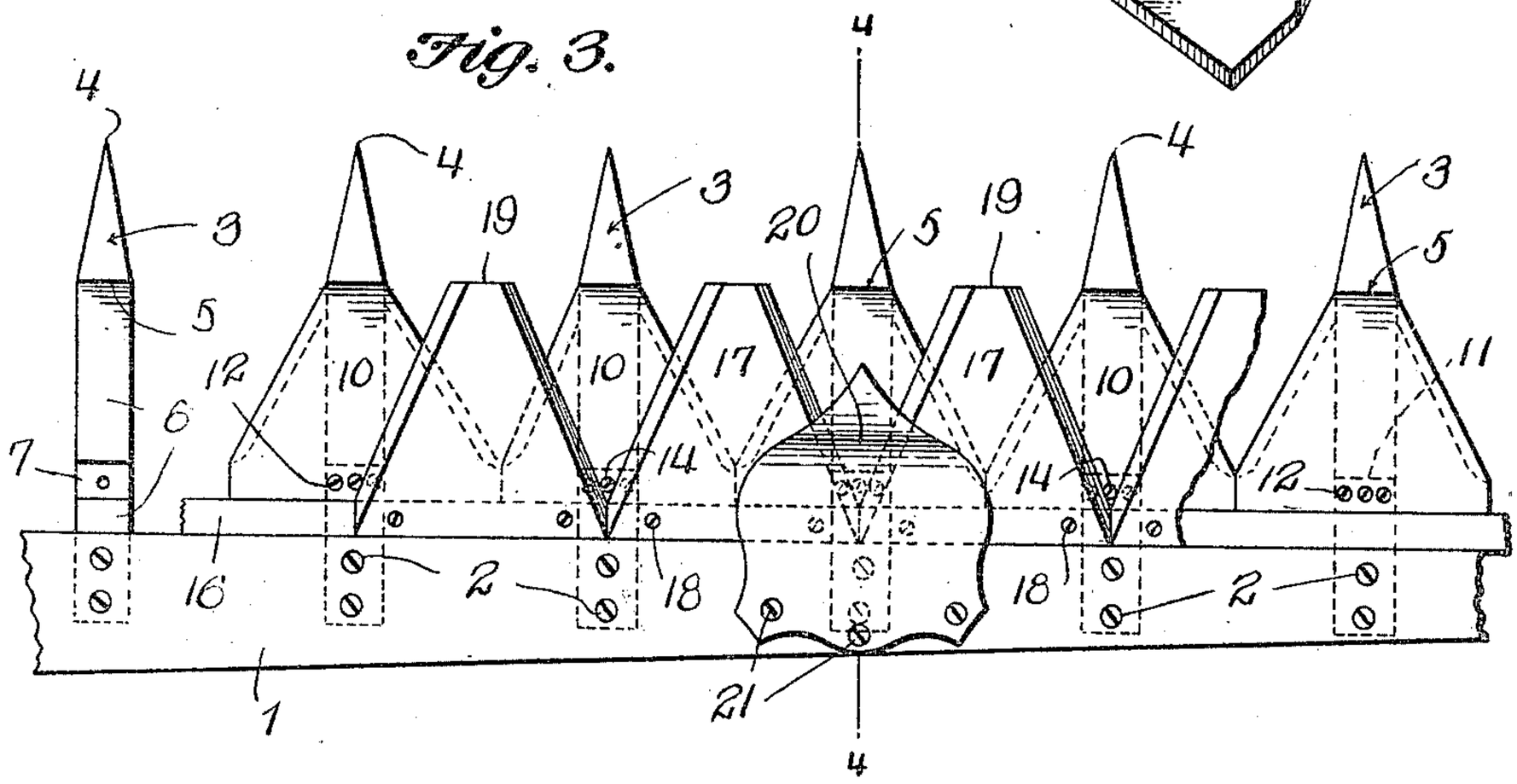
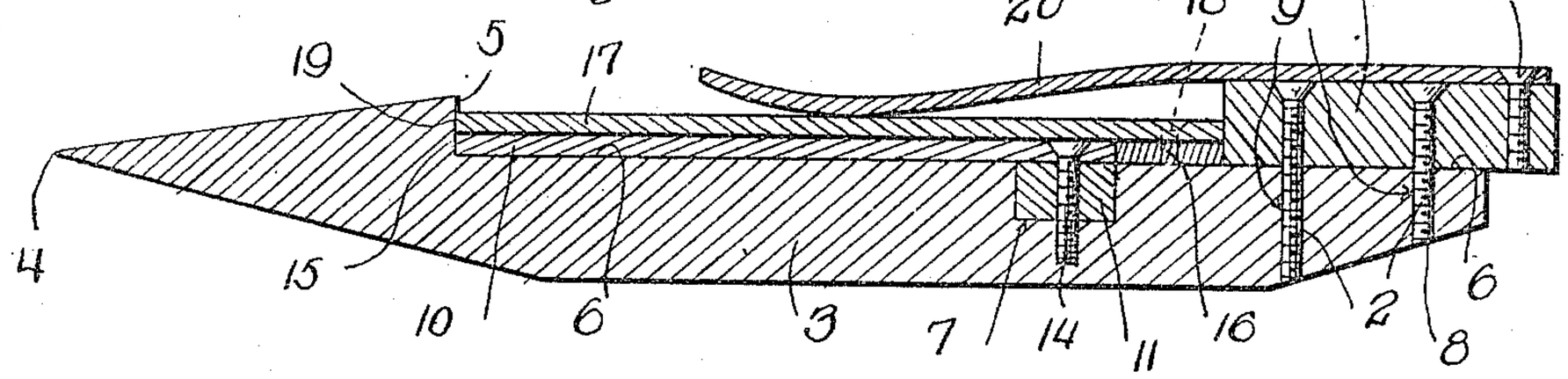



Fig. 4.




Witnesses

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# UNITED STATES PATENT OFFICE.

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## CUTTING APPARATUS.

960,874. Specification of Letters Patent. Patented June 7, 1910.

Application filed January 18, 1910. Serial No. 538,715.

*To all whom it may concern:*

Be it known that I, GEORGE W. FLORA, a citizen of the United States of America, residing at Attica, in the county of Fountain and State of Indiana, have invented new and useful Improvements in Cutting Apparatus, of which the following is a specification.

This invention relates to cutting apparatus for mowing machines and harvesters, and it has for its objects to simplify and improve the general construction and operation of this class of devices and to produce a cutting apparatus which shall be smooth running, not liable to choke in operation, and in which the individual cutting blades and ledger plates may be conveniently detached and replaced while the machine is in the field and without the necessity of resorting to the skilled labor which can usually be found only by taking the machine to the repair shop.

With these and other ends in view which will readily appear as the nature of the invention is better understood, the same consists in the improved construction and novel arrangement and combination of parts which will be hereinafter fully described and particularly pointed out in the claim.

In the accompanying drawing has been illustrated a simple and preferred form of the invention, it being, however, understood that no limitation is necessarily made to the precise structural details therein exhibited, but that changes, alterations and modifications within the scope of the invention, may be resorted to when desired.

In the drawing, Figure 1 is a perspective view of one of the guard fingers detached. Fig. 2 is a perspective view, showing one of the ledger plates in inverted position. Fig. 3 is a top plan view, showing a portion of a finger bar equipped with the improved guard fingers and ledger plates, showing also a portion of the cutter bar and one of the holding springs. Fig. 4 is a sectional detail view enlarged, taken on the plane indicated by the line 4—4 in Fig. 3.

Corresponding parts in the several figures are denoted by like characters of reference.

The finger bar 1 of the improved cutting apparatus consists of a tapering bar preferably of rectangular cross section, said bar being provided with apertures for the passage of screws 2, whereby the fingers 3 are secured in position; said fingers being applied to the underside of the bar, and the heads of the screws being countersunk in the upper side of the latter.

The guard fingers 3 are made of steel, each of said fingers being formed with a point 4 presenting a shoulder or offset 5, and each of said fingers having a flush smooth upper face 6 which is broken only by a transverse groove or recess 7 formed intermediate the shoulder or offset 5 and the rear edge of the finger. The rear or heel end of the finger is beveled upon its underside, as shown at 8, and is provided with threaded recesses or sockets 9 for the reception of the fastening screws, of which not less than two are preferably used to secure each finger in position upon the bar 1. The parts are so proportioned that when the fingers are secured upon the bar, the transverse recesses 7 will be positioned some distance in advance of the front edge of the finger bar.

The lower cutters or ledger plates 10 are provided upon their undersides with blocks 11, firmly secured thereupon by fastening means, such as rivets 12. The blocks 11 are adapted to engage and fit closely in the recesses 7 of the guard fingers and apertures are provided extending through the ledger plates, the blocks 11 and the guard fingers for the passage of fastening members, such as screws 14, the heads of which are countersunk in the upper sides of the ledger plates. The latter are provided with blunt front edges 15 abutting upon the shoulders 5 of the guard fingers, and said ledger plates which when mounted upon the guard fingers or are disposed closely together in the customary manner are beveled upon their undersides to present cutting edges 16.

It will be seen that when the finger bar, the fingers and the ledger plates are assembled, there will be formed between the rear edges of the ledger plates and the front edge of the finger bar a groove or guideway for the reception of the cutter bar 16 upon which the blades or cutters 17 are secured by means of screws 18 having their heads countersunk in the upper sides of the blades. The blunt front edges 19 of the blades 17 will be guided adjacent to the shoulders 5 of the guard fingers, and the cutter bar will be guided for reciprocation in the groove or way formed between the rear edges of the ledger plates and the front edge of the

finger bar. The cutter bar will be held securely in this position by means of curved spring plates 20, of which a suitable number may be secured at proper distances apart upon the upper side of the finger bar, said springs being firmly secured by fastening means, such as screws or bolts 21, and said springs being designed to suitably overlap and press upon the blades 19 so as to hold the latter in contact with the upper faces of the ledger plates, thus insuring an efficient shear-like action of the cutting members.

As will be seen from the foregoing description, the improved cutting apparatus is extremely simple in construction, and the parts when assembled will be very securely maintained against all possibility of displacement. Thus, the ledger plates are locked securely in position by means of the cutter bar which is superposed upon the heads of the screws, whereby the ledger plates are secured upon the guard fingers. The parts will be assembled by the springs 20, which latter, however, will not preclude endwise removal of the cutter bar when desired in order to afford access to the ledger plates for the purpose of removing or renewing the latter.

Having thus described the invention, what is claimed as new, is:—

In a cutting apparatus, a finger bar, guard fingers mounted upon the underside of said bar, fastening screws inserted through the bar into the guard fingers and having their heads countersunk in the upper side of the bar, said guard fingers being formed with points having shoulders or offsets, with smooth upper faces in rear of said shoulders and with transverse recesses spaced from the front edge of the finger bar, ledger plates having blunt front ends engaging the shoulders of the finger bars, said ledger plates being provided adjacent to their rear edges with blocks firmly secured upon the undersides thereof to engage the recesses in the guard fingers in advance of the finger bar, fastening screws extending through the ledger plates and blocks into the finger bars and having heads countersunk in the upper sides of the ledger plates, a cutter bar guided between the rear edges of the ledger plates and the front edge of the finger bar, cutters upon said bar contacting with the ledger plates, and springs secured upon the finger bar and engaging the upper faces of the cutters carried by the cutter bar.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE W. FLORA.

Witnesses:

J. S. Nova,

T. R. Zeigler.