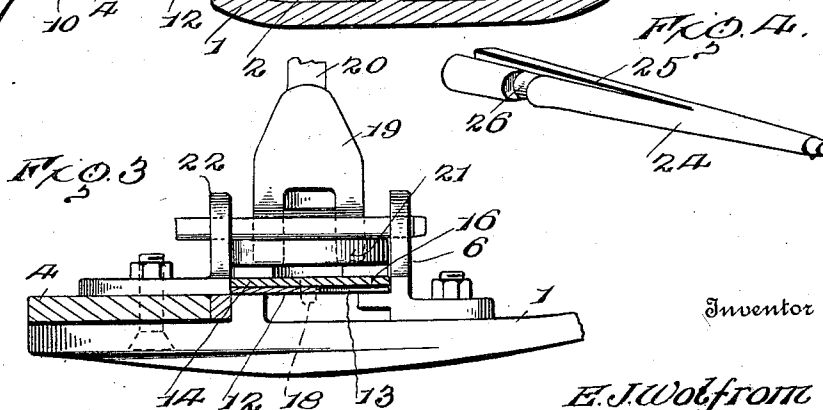
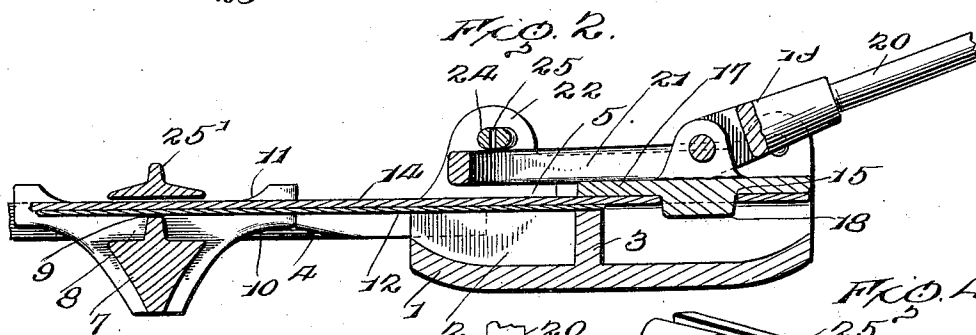
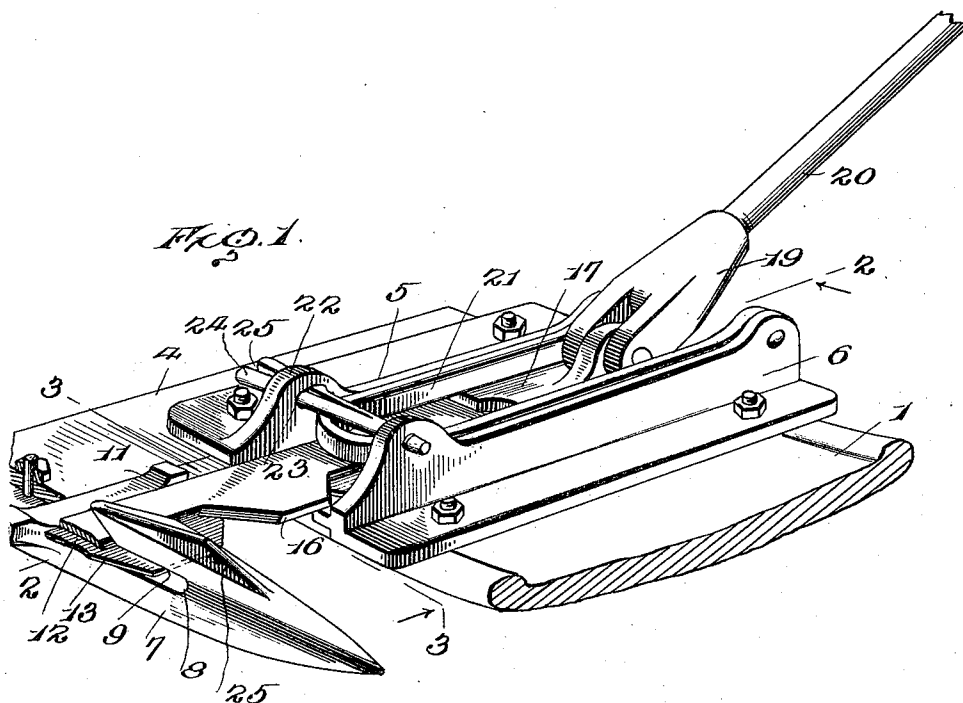


E. J. WOLFROM.
CUTTING APPARATUS.
APPLICATION FILED AUG. 1, 1911.

Patented Dec. 10, 1912.

2 SHEETS—SHEET 1.

1,046,530.



Inventor

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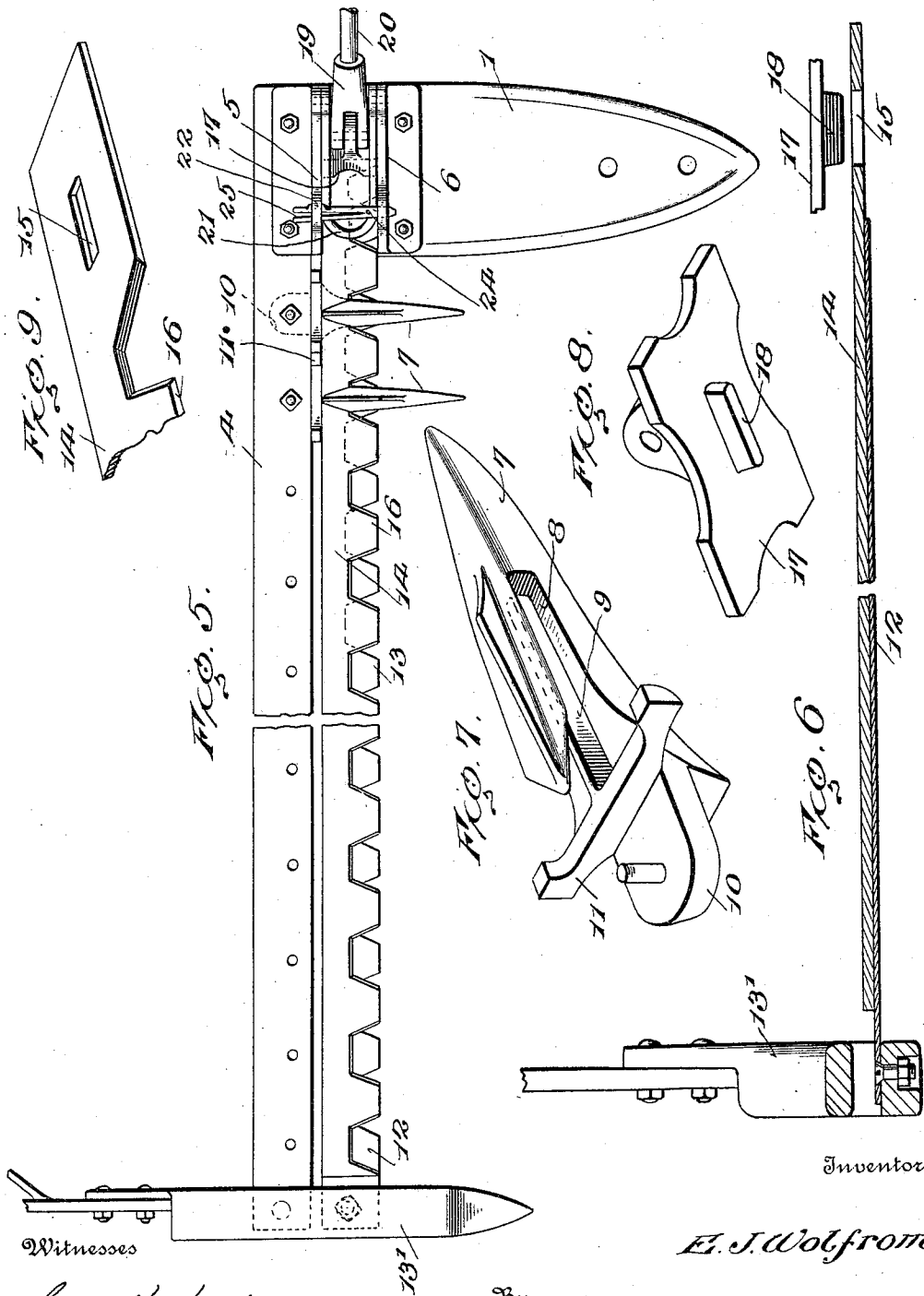
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2 SHEETS—SHEET 2.

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CUTTING APPARATUS.

1,046,530.

Specification of Letters Patent.

Patented Dec. 10, 1912.

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To all whom it may concern:

Be it known that I, ELI J. WOLFROTH, citizen of the United States, residing at Salida, in the county of Chaffee and State of Colorado, have invented certain new and useful Improvements in Cutting Apparatus, of which the following is a specification.

This invention has relation to cutting mechanisms for mowers, reapers and harvesters, and has for its object to provide a mechanism of simple structure, the parts being so arranged that the cutting operation may be effected with ease and in a manner calculated to avoid choking of the material between the fixed and movable parts of the mechanism.

With this object in view, the mechanism includes inner and outer runners upon which a finger bar is mounted. Guides are mounted one upon the finger bar and the other upon the inner runner and extend parallel with relation to each other transversely to the line of draft of the machine. Guards of peculiar configuration are mounted upon the finger bar and a series of connected ledger plates are mounted upon the guards and are located within the blade openings therein. A knife bar is arranged to reciprocate over the said series of ledger plates and carries a series of fixed blades. A block is detachably connected with the inner end of the knife bar, and a head is pivotally connected with the said block. The pitman rod of the machine is adjustably connected with the said head. A lever is fulcrumed between the guides before mentioned and is adapted to be swung down over the said block so that the block may reciprocate thereunder, and means is provided for holding the free end of the said lever in its lowermost position.

My invention is illustrated in the accompanying drawings wherein:

Figure 1 is a perspective view of portions of the cutting mechanism. Fig. 2 is a sectional view of the same cut on the line 2—2 of Fig. 1. Fig. 3 is a sectional view of the same cut on the line 3—3 of Fig. 1. Fig. 4 is a perspective view of a pin used in the mechanism. Fig. 5 is a plan view of the cutting mechanism with parts removed; Fig. 6 is a longitudinal sectional view of same; Fig. 7 is a perspective view of a finger guard used in the mechanism; Fig.

8 is a perspective view of a block used in the mechanism; Fig. 9 is a perspective view of the inner end portion of a knife bar used in the mechanism.

Corresponding and like parts are referred to in the following description and indicated in all the views of the accompanying drawings by the same reference characters.

As illustrated in the accompanying drawing, the cutting mechanism includes an inner runner 1 having at the rear portion of its upper side a concavity 2, the length of which is traversed by an upstanding web 3 which is located in alinement with the long dimension of the said runner. A finger bar 4 is secured at its inner end to the rear portion of the runner 1 in any appropriate manner. A guide 5 is fixed to the inner end of the finger bar 4 at the forward edge thereof. A guide 6 is fixed upon the runner 1 and is located in parallel relation to the guide 5 but spaced therefrom. A series of finger guards 7 of like design but of peculiar configuration is mounted upon the finger bar 4. Inasmuch as these guards are of the same pattern, a description of one will answer for all.

Each guard is provided with the usual blade opening 8, the bottom of which is provided with a web 9. The guard is provided with a shank 10 which is screwed directly against the lower surface of the finger bar 4. The guard is provided at its upper portion with an abutment 11 which bears directly against the forward edge of the finger bar 4, and which projects to such an extent beyond the side edges of the main portion of the said guard that the said abutments throughout the series of guards abut against each other at their ends. The upper edge portion of the abutment 11 is concaved so that the ends of the abutment project slightly above the upper surface of the cutter bar 4, while the intermediate portion thereof is flush with or lies slightly below the upper surface of the cutter bar 4.

A ledger bar 12 extends transversely across all of the finger guards 7 and has its rear edge in close contact with the forward sides of all of the abutments 11. This ledger bar is provided with forwardly disposed, integral ledger plates 13 which lie in the blade openings 8 of the finger guards 7 and project at their edge portions well over and

beyond the web 9 of the said finger guards. Any suitable securing devices may be provided for holding the ledger bar 12 in its proper position with relation to the finger guards at the outer runner 13'.

The outer runner 13' is provided with an opening, best shown in Fig. 6 of the drawing, which extends through the said runner from side to side. This opening is of a sufficient size to permit the ledger bar 12 to be slipped longitudinally through the outer runner into position upon the cutting apparatus or removed from the cutting apparatus in a similar manner, thereby making it possible to remove the ledger bars by drawing the same away from the machine to which the cutting apparatus is attached.

A knife bar 14 is slidably mounted between the guides 5 and 6 and extends transversely across all of the finger guards 7, and also extends longitudinally along the ledger bar 4 and rests on the upper surface thereof. This knife bar 14 is provided at its inner end with an elongated slot 15. The knife bar 14 carries a number of blades 16 which correspond in number with the number of guards and ledger plates hereinbefore described. These blades 16 are integrally formed with the bar 14. A block 17 is slidably mounted between the guides 5 and 6 and is provided at its lower side with a fixed lug 18 which is snugly received in the slot 15 of the knife bar 14. A head 19 is pivotally connected with the block 17 at the upper side thereof and is provided with a threaded bore into which one end of the pitman rod 20 is screwed. Therefore it will be seen that by turning the rod 20 in the head 19, the knife bar 14 and its blades may be so positioned with relation to the finger guards and ledger plates as to reciprocate between certain desired bounds with relation thereto.

A U-shaped lever 21 is pivoted at its ends to the inner portions of the guides 5 and 6 and receives between its end portions the outer end of the pitman rod 20 and part of the head 19. The guides 5 and 6 are provided at their upper edges and in the vicinity of their outer ends with upstanding lugs 22 which are perforated as at 23. The intermediate portion of the lever 21 is adapted to be swung down over the upper surface of the block 17 at the side edges thereof and is adapted to lie between and below the lugs 22. A pin 24 is detachably received in the perforations 23 of the said lugs and lies over the intermediate portion of the lever 21 when the same is swung down and serves as means for confining what might be termed the free end portion of the lever.

The rear edge of the knife bar 14 bears against the forward surfaces of all of the abutments 11 of the finger guards 7. Therefore, as the said knife bar reciprocates it is braced against its work by the series of abut-

ments and consequently the said knife bar may be made from comparatively thin material. The blades 16 are guided in their movement under the upper portions of the finger guards by the top surfaces of the blade openings 8 therein, against which the upper surfaces of the said blades bear directly. The upper portions of the guards 7 are provided with longitudinal webs 25' which serve as braces for the said upper portions of the guard.

Any suitable means may be provided for retaining the pin 24 in the perforations 23. The pin shown in the accompanying drawing is of special construction and is especially adapted to be used in the capacity indicated. The said pin is provided with a longitudinally disposed kerf 25 extending from its blunt end toward its pointed end, and the side portions of the pin at the blunt end thereof are spread slightly so that when they are pressed together they will have a tendency when released to flex apart. One of the side portions of the pin 24 is provided at its outer side with a notch 26 which is adapted to receive the edge portion of the perforation 23 in the guide 5. Therefore it will be seen that when the pin is inserted in the said perforations and the notch 26 is brought opposite to the edge of the perforation 23 in the guide 5 and the side portions of the pin are permitted to flex away from each other, the notch will receive the edge portion of the guide 5 and thus the pin will be restrained against longitudinal movement.

When it is desired to remove the pin, it is necessary only to press the spread ends of the said pin toward each other and the notch 26 will be carried away from the edge of the perforation 23 in the guide 5 and the said pin may be readily withdrawn. After this has been done, the free end portion of the lever 21 may be swung in an upward direction and the block 17 may be lifted off of the inner end of the knife bar 14 whereby the lug 18 is removed from the slot 15 therein. Then the said knife bar may be slipped longitudinally out of the openings 8 in the finger guards 7, and if desired the ledger bar 12 may also be removed from within the finger guards and outer runner 13'. Thus the parts are detached from the mower and the blades and plates carried by the said bars may be readily sharpened.

The object in providing the abutments with concaved intermediate portions is that no obstruction is presented to the material as it is cut and passed behind the upper portions of the finger guards. Therefore the material cannot accumulate at these points. Also the knife bar reciprocating longitudinally of the concaved portions of the abutments will have a tendency to force any material that might strike the rear ends of the

upper portions of the finger guards rearwardly through the openings made by these concavities.

What I claim is:

5 1. In combination with inner and outer runners and a finger bar connecting the same together, the outer runner having an opening extending through the same from side to side, a cutting apparatus comprising
10 a ledger bar having an end portion located in the opening of the outer runner, a securing device detachably connecting the ledger bar with the outer runner, said ledger bar
15 being of uniform vertical thickness throughout its length, said opening being of a size sufficient to permit of the ledger bar being passed longitudinally through the outer runner, a knife bar lying upon the ledger bar
20 and mounted for reciprocation, and means for reciprocating the knife bar.

2. In combination with inner and outer runners and a finger bar connecting the same together, the outer runner having an

opening extending through the same from side to side, and slotted guard fingers mounted upon the finger bar, a cutting apparatus comprising a ledger plate having an end portion located in the opening of the outer runner, said opening being of a size sufficient to permit of the ledger bar being
25 passed longitudinally through the outer runner, a securing device detachably connecting the ledger bar with the outer runner, said ledger bar extending through the slots of the guard fingers and resting upon the bottoms thereof, said ledger bar being of uniform vertical thickness throughout its
30 length, a knife bar lying upon the ledger bar and mounted for reciprocation, and means for reciprocating the knife bar. 40

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

ELI J. WOLFROM. [L. s.]

Witnesses:

WM. W. ROLLER,
CHARLES HIGHAM.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."