April 21, 1959 J. S. NAERY 2,882,672

STABILIZER FOR SICKLE GUARDS

Filed Dec. 5, 1955 3 Sheets-Sheet 1

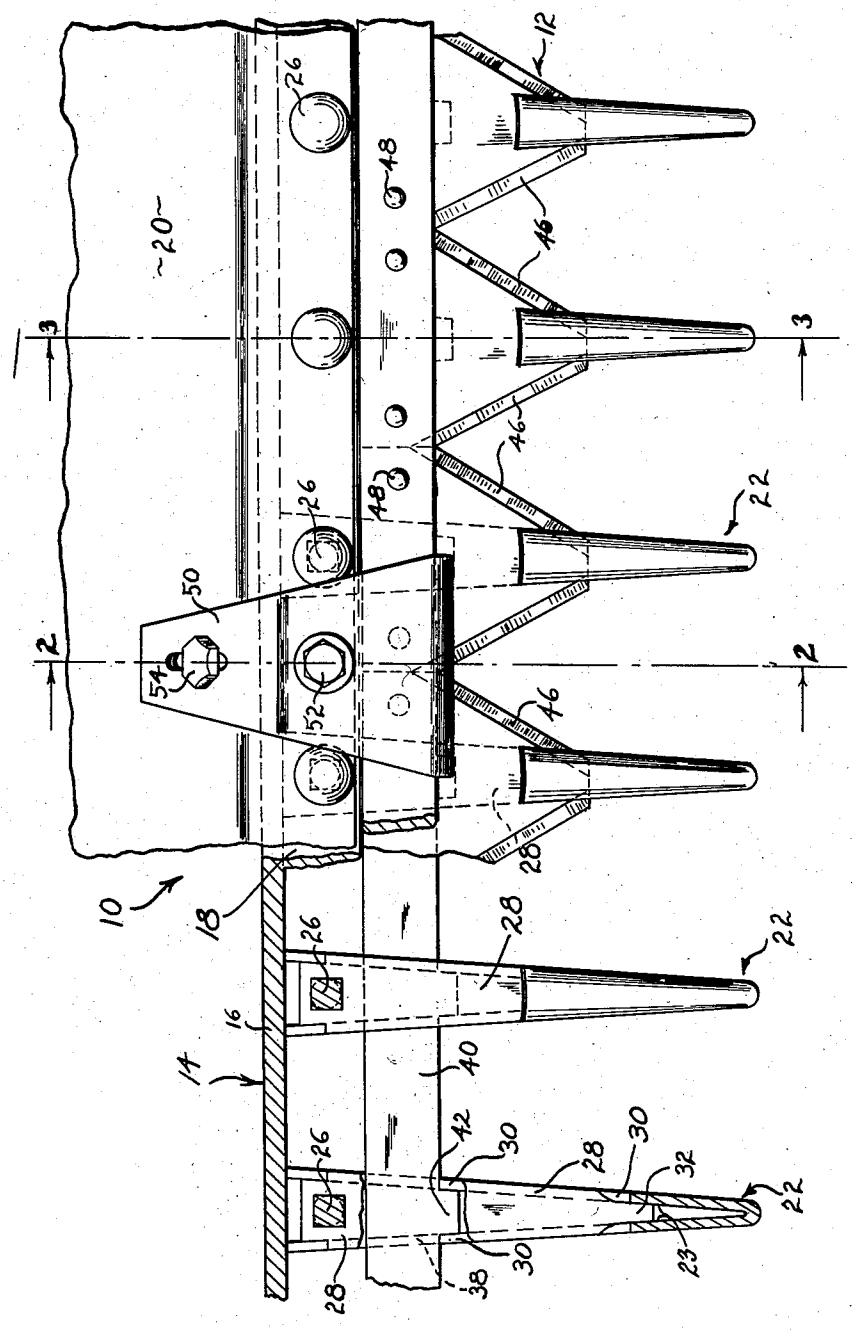


Fig. 1

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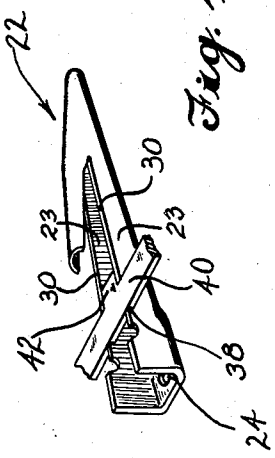


Fig. 4

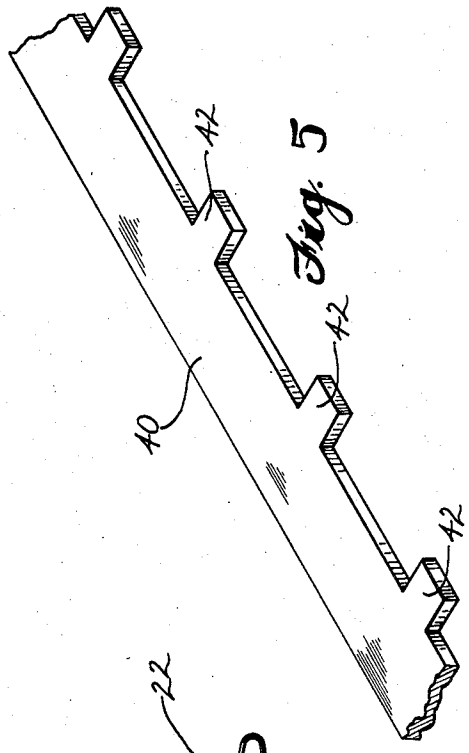


Fig. 5

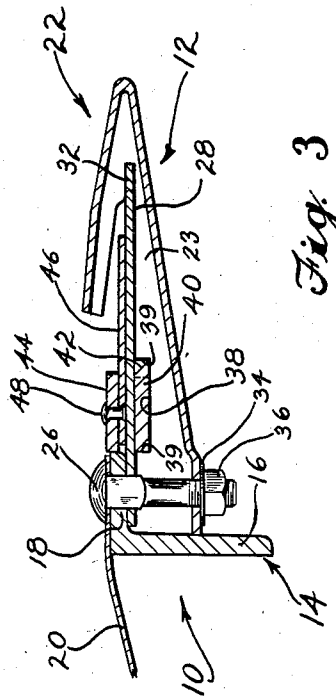


Fig. 3

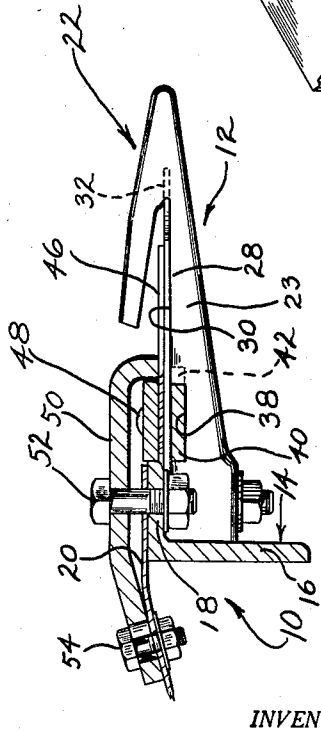


Fig. 2

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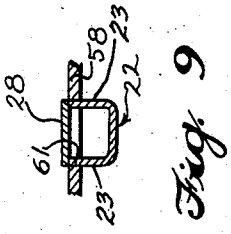


Fig. 9

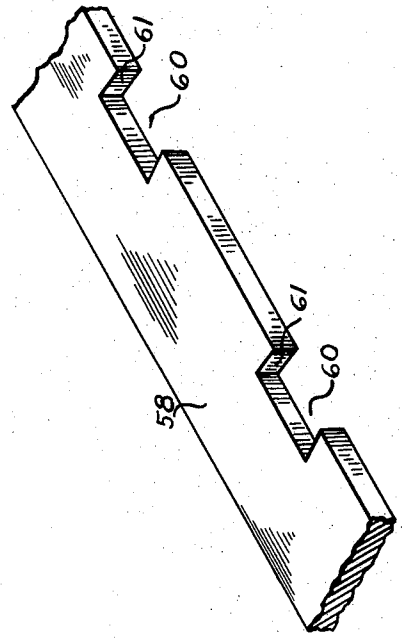


Fig. 8

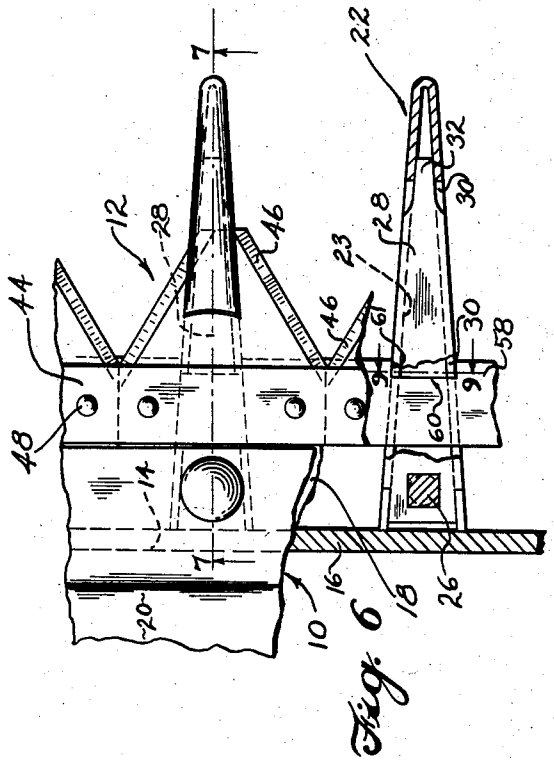


Fig. 6

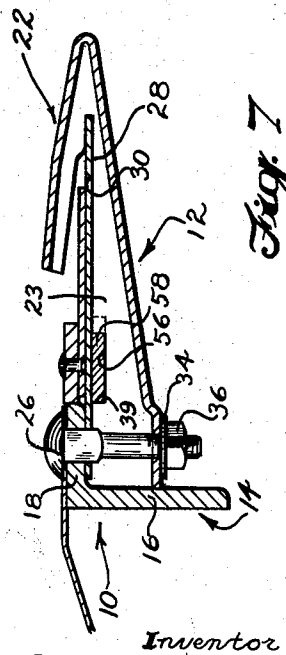


Fig. 7

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STABILIZER FOR SICKLE GUARDS

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Application December 5, 1955, Serial No. 551,130

1 Claim. (Cl. 56—307)

This invention relates to cutter bars generally employed on mowers, combines and windrowers, for severing standing crops, and especially to a means of stabilizing the sickle guard fingers against lateral rotation about their fastening bolts. This invention is especially adapted to provide stabilizing means for guards fabricated of sheet metal, which are coming into universal use as a substitute for the cast or forged types of guards well known in the industry in the past. However, it is within the scope of this invention to apply it to use with cast or forged sickle guards of suitable design.

Cast or forged guards are usually provided with laterally-extending fingers on each side. These fingers abut the corresponding finger of the adjoining guard so that a lateral-force applied to a guard is met by the finger of the adjoining guard and the accumulated resistance of the other guards. However, if a lateral force is applied to a guard located near the end of the cutter bar, and directed toward the end, the accumulative support of the adjoining guards may be insufficient to resist the force and the guards may rotate about their fastening means.

This invention comprises a stabilizing means that is a unitary member extending the full length of the cutter bar or a multiple of guards. This means provides lateral support for each guard independently of the adjoining guard.

An object of this invention is to provide a means of stabilizing sickle guards against rotation about their fastening means.

Another object is to provide a means of stabilizing sickle guards that will serve to strengthen them against bending.

Another object of this invention is to provide a stabilizing means that will serve to resist forces tending to rotate the guard about its fastening means whether the guard is at the end of the cutter bar or more centrally located, thus securing all guards integrally together.

Another object is to provide means for uniformly spacing the sickle guards.

Another object is to simplify the mounting of the ledger plate.

Further objects and advantages of the invention will become apparent from a consideration of the following detailed description taken in connection with the accompanying drawings wherein a satisfactory embodiment of the invention is shown. However, it is to be understood that the invention is not limited to the details disclosed but includes all such variations and modifications as fall within the spirit of the invention.

Referring to the drawings:

Fig. 1 is a fragmentary plan view of a cutter bar with parts broken away and showing the invention.

Fig. 2 is a section taken at 2—2 of Fig. 1.

Fig. 3 is a section taken at 3—3 of Fig. 1.

Fig. 4 is a perspective fragmentary view slightly reduced in size, of a sickle guard assembled with the stabilizer of the invention.

Fig. 5 is an enlarged perspective fragmentary portion

of the stabilizer of the invention detached from the sickle guards.

Fig. 6 is a fragmentary plan view of a cutter bar with the invention in a modified form.

Fig. 7 is a section taken at 7—7 of Fig. 6.

Fig. 8 is an enlarged fragmentary perspective view of the stabilizer of the invention in modified form and detached from the sickle guards.

Fig. 9 is a section taken at 9—9 of Fig. 6.

Referring again to Figs. 1 and 2, 10 is a fragment of the frame of an implement to which the cutter bar 12 is secured. Frame 10, in this instance, comprises a longitudinal angle member 14 having a vertical web 16 and a horizontal web 18. A platform sheet 20 extends the length of the cutter bar and provides the platform upon which the crop falls as it is cut. Sheet 20 is not an important element of this invention so it will not be be further described unless necessary in order to clearly set forth the invention.

The cutter bar 12 comprises a plurality of laterally spaced sickle guards 22 extending normally to angle member 14 and abutting vertical web 16 shown in Figs. 1 through 3, and 6 and 7. Guards 22 are of pressed metal, preferably steel in this instance, of a U-shaped transverse cross section clearly shown in Fig. 4 and having transversely-spaced walls 23. A hole 24 is provided in each guard adjacent the end adjoining the web 16. A bolt 26 is passed through square holes in sheet 20 and in the horizontal web 18 of angle member 14 and through hole 24 in guard 22, bolt 26 having a square shank portion to conform to the square holes.

A ledger plate 28 provides the stationary cutting member and rests upon the horizontal edges 30 of walls 23. A narrow portion 32 is provided on ledger plate 28 to furnish lateral stability at the forward end of the plate. Portion 32 fits closely within the point of guard 22 between walls 23. A hole at the opposite end of ledger plate 28 permits passage of bolt 26, and a washer 34 and nut 36 completes the assembly of the guard 22 to angle member 14.

The horizontal edges 30 of walls 23 are provided with transverse notches 38 as shown in Figs. 1 through 4, spaced forwardly from bolt 26. Notches 38 of all guards 22 are transversely aligned for reasons that will appear from the description, and are provided with vertical fore-and-aft walls 39, as shown in Fig. 3.

The gist of the invention is the longitudinal continuous stabilizing bar 40 which extends the full length of the cutter bar 12. Bar 40 is of a width such as to closely fit in notch 38 and be flush with the horizontal surfaces 30, as shown in Figs. 2 through 4, so that ledger plates 28 can lie flatly upon surfaces 30.

Bar 40 is provided with forwardly extending spaced tongues 42 which fit the space between the vertical walls 23 of guards 22 closely as clearly shown in Fig. 4. Thus any lateral forces applied to the guards 22 will be met by lugs 42 and bar 40 thereby preventing rotation of the guards about bolts 26 and also resisting lateral bending of the guards.

The conventional sickle bar 44 abuts the edge of web 18 of angle member 14 as shown in Figs. 2, 3, 6 and 7. Sickle sections 46 are secured to bar 44 by rivets 48. A holddown member 50 contacts the upper surface of sickle sections 46 in order to maintain contact between the ledger plates 28 and the sections 46 to insure proper cutting action. A bolt 52 secures hold down member 50 in positive contact with the sickle sections 46, and bolt 54 provides lateral stability for the hold down member 50 by preventing rotation about bolt 52.

Figs. 6, 7 and 8, show a stabilizing bar similar to that shown in Figs. 1 through 5, but of a modified form.

Referring to Figs. 6 through 9, horizontal surfaces **30** of guard **22** are provided with transverse notches **56**, similar to those indicated in Figs. 1 through 4.

Bar **58** extends the entire length of cutter bar **12** and is provided with spaced notches **60** having side walls **61**. When bar **58** is inserted in notches **56**, the walls **61** of notches **60** contact the outer surfaces of guards **22** closely so as to resist lateral forces tending to rotate them about bolts **26**, and also to resist forces tending to bend the guards laterally.

Other details of Figs. 6 through 9 have been either previously described or do not concern the invention so as to warrant description.

In summarizing, it will be seen that this invention provides an effective and simple means of giving lateral support for sickle guards against stones, or bunching of grain that tends to bend or pivot the guards in a lateral direction. This invention is especially novel in that it provides a simple unitary means of supporting all guards so that lateral forces applied against one will be met by the others accumulatively.

Considered within the purview of this invention is the possibility of using suitably-designed cast or forged sickle guards in lieu of the stamped type, and it is also understood that the stabilizer bar can be in several abutting sections for economical manufacture.

The above being a complete description of an illustrative embodiment of the invention, what is claimed

as new and desired to be secured by Letters Patent of the United States is:

An improvement in a cutter bar for a harvester having a transverse frame member provided with a horizontal portion, and a plurality of forwardly-extending transversely-spaced guard members secured thereto, said guard members having upwardly-extending transversely-spaced side walls terminating forwardly in a point and provided with transverse horizontal recesses in the upper edges thereof having vertical fore-and-aft transverse walls, a unitary longitudinal bar co-extensive with a plurality of said guard members, fitted transversely in said recesses and being provided with tongues extending forwardly and intermediately said spaced side walls to provide lateral support for said guard members, and a ledger plate having a tongue extending forwardly between said side walls adjacent said point and rearwardly intermediate said horizontal portion and said upper edges of said side walls, preventing upward displacement of said bar.

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