Oct. 15, 1940. W. R. GILLETTE 2,217,741

CUTTER BAR

Filed Feb. 14, 1938

Fig. 1.

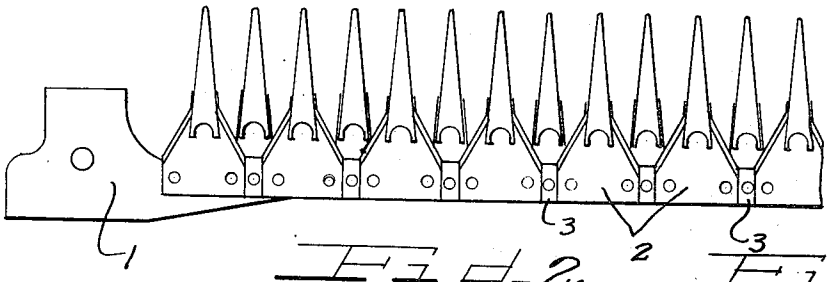


Fig. 2.

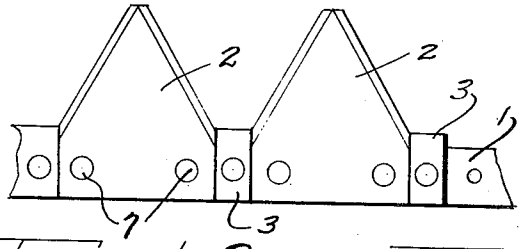


Fig. 8

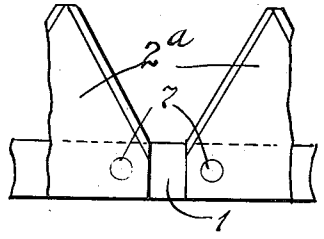


Fig. 3.

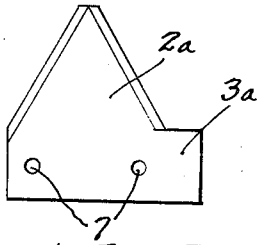


Fig. 4.

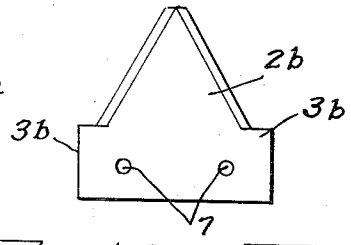


Fig. 5.

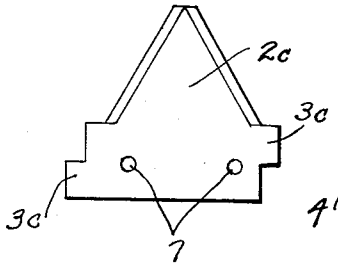


Fig. 6.

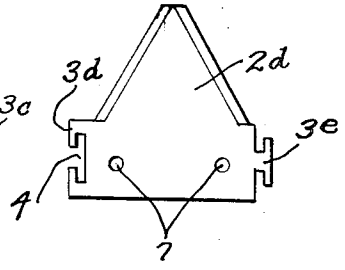
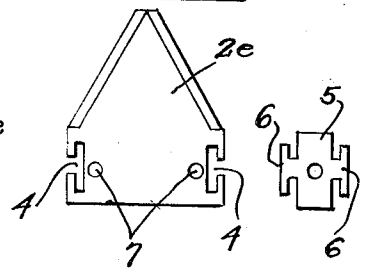


Fig. 7.



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2,217,741

CUTTER BAR

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Application February 14, 1938, Serial No. 190,383

5 Claims. (Cl. 56—300)

This invention relates to a cutter bar. The cutter bar is adapted for use in mowers, binders and harvester combines and the like and consists primarily in a construction that increases the spacing between the confronting cutting edges of adjacent sections and the time interval between successive cutting operations of a cutting edge to permit the material to be cut sufficient time to reach the most efficient position with respect to the guard or ledger plate forming the second cutting edge. This increase in the time interval is especially desirable when the centers of the guards to which the guard or ledger plates are attached are more closely spaced as for example in a twin guard construction.

In the past, attempts to increase the time interval have been made by changing the angle of the cutting edges of the knives. This change, however, allowed but little added time and sacrificed the most efficient angle of contact between the cutting edges of the sections and the ledger plates, so that a considerable portion of the cutting edges engage the material at the same instant, thereby destroying the gradual engagement between the material to be cut and the cutting edges and increasing the necessary draft required to propel the machine.

It is an object of this invention to overcome the objections to such prior construction without sacrificing the most efficient angle of the cutting edges. To this end, the invention contemplates a slight contraction or reduction of the width of standard sections. In other words, the opposite cutting edges of standard sections are brought closer together to provide the desired time interval while permitting the use of the preferred angle of contact.

The invention comprises the novel structure and combination of parts hereinafter described and more particularly pointed out and defined in the appended claims.

In the accompanying drawing which illustrates certain preferred forms of this invention and in which similar reference numerals refer to similar features in the different views,

Figure 1 is a fragmentary plan view of a cutter bar involving this invention.

Figure 2 is an enlarged fragmentary plan view of a portion of the structure shown in Figure 1.

Figures 3 to 7 illustrate modified forms of cutting sections.

Figure 8 illustrates another modified arrangement.

In order to illustrate this invention, there is shown in the drawing a cutter bar 1 to which a series of cutting sections 2 are secured in proper spaced relation to provide the proper time interval necessary for the material to gradually engage the cutting edges of the sections 2 which have the most efficient cutting angle.

In order to secure the proper time interval, the cutting portion of each section is slightly reduced in width over standard sections. In other words, the cutting edges at the preferred cutting angle are moved closer together, thus creating a space between the inner portions of the cutting edges as shown in Figure 2. This contraction or reduction of the width of the cutting portion of each section over standard sections will produce a base portion of about two and one-half inches as shown by the sections 2 in Figures 1 and 2.

In assembling the sections 2 upon a standard cutter bar, the center lines of the apices will be spaced about three inches apart, leaving a space of about one-half inch between the base portions of the sections. It is hence desirable to provide suitable spacing means in connection with the base portions of the sections.

The spacing means may assume various forms. The simplest form shown in Figures 1 and 2 consists of spacing blocks 3 which are secured to the cutter bar between the base portions of the cutting sections.

In Figure 3, the cutting section which is designated by the reference 2^a contains a spacing block 3^a integral with one edge of the base portion.

In Figure 4 there is shown a cutting section 2^b in which a spacing block 3^b is integrally formed upon each lateral edge of the base portion of a cutting section. Each block 3^b should be only one-half of the width of the block 3^a.

In Figure 5 there is shown a section 2^c having spacing means 3^c upon both lateral sides of the base somewhat similar to the structure shown in Figure 4 except that the spacing means or blocks 3^c are reduced in width and staggered, one occupying a forward position and the other a rear position. With this construction, the blocks 3^c will have an interfitting relation when the sections are assembled.

In Figure 6 there is shown a cutting section 2^d having spacing means upon each lateral edge of the base portion. The spacing means 3^d upon one edge is provided with a bayonet slot 4. While the spacing means 3^e upon the other edge is in the form of a T that is adapted to fit in the bayonet slot of the adjacent section; the bayonet slot 4 being adapted to receive the T head of the adjacent section. Thus the cutting sections 2^d will have an interfitting relation when assembled.

In Figure 7 the cutting section which is designated as 2^e has a bayonet slot 4 in each edge of the base portion: a spacing block 5 having T heads 6 upon its sides is adapted to be positioned between adjacent cutting sections with the T heads fitting in the bayonet slots of said adjacent sections. Thus the sections are interlocked and spaced by the spacing blocks.

In Figure 8 is shown an arrangement wherein the spacers are omitted but where the cutting edges of the sections 2^a are so ground that the inner ends of said edges terminate at the forward edge of the cutter bar 1, thus providing a cutting edge clear to the cutter bar.

Thus it will be apparent that a suitable time interval is obtained by reducing the width of the cutting portion of standard cutting sections without changing the preferred or most efficient cutting angle. This reduction of the width of the cutting portion of each section is plainly shown in Figure 4 in which the base of the knives 2^b represents the base of the standard sections now in use.

It will be appreciated that the method of increasing the time interval of cutting sections over that of standard sections may consist in reducing the width of the cutting portion of each section without changing the angularity of the cutting edges or may consist in forming a cutting section with a reduced cutting portion over standard sections and providing spacing means between said sections.

The cutting sections may be made as shown in Figures 1 and 2 and spacing blocks used, or they may be made in any of the other forms.

The various cutting sections illustrated are provided with bolt or rivet holes 7 that are so spaced in each section as to fit the holes in standard cutter bars.

I am aware that many changes may be made and numerous details of construction may be varied through a wide range without departing from the principles of this invention, and I, therefore, do not purpose limiting the patent granted hereon otherwise than is necessitated by the prior art.

I claim as my invention:

1. In a cutter bar construction, a bar, a series of cutting sections with base portions secured in spaced relation to said bar and having a predetermined distance between their apices, the inner adjacent end portions of the cutting edges of adjacent sections being spaced apart, spacing means separately attached to said bar and extending to said end portions of the cutting edges for spanning the distance between the base portions of adjacent cutting sections, and an interlocking connection between said means and the base portions of adjacent sections.

2. As an article of manufacture, a section plate construction comprising an elongate base portion adapted for connection to a bar and extending longitudinally thereof, a cutting portion defining converging cutting edges, a T-slot at one end of the base portion and a T-shaped tongue at the other end of the base portion, one end of said base portion being extended to provide a space between the inner ends of the facing cutting edges, when a plurality of sections are interconnected, said extended portion defining a non-cutting edge extending between the said inner ends of the cutting edges of adjacently disposed sections.

3. In a cutter bar construction, a bar, a series of cutting sections with base portions secured in spaced relation to said bar and having a predetermined distance between their apices, the inner adjacent end portions of the cutting edges of adjacent sections being spaced apart, and spacing means separately attached to said bar and extending to said end portions of the cutting edges for spanning the distance between the base portions of adjacent cutting sections.

4. In a cutter bar construction, a bar, a series of cutting sections having base portions secured to the bar in spaced relation and a predetermined distance between their apices, the inner adjacent end portions of the cutting edges of adjacent sections being spaced apart, and spacing means separately attached to the bar between adjacent sections and extending to and spanning the distance between the inner adjacent portions of their cutting edges.

5. In a cutter bar construction, a bar, a series of cutting sections having base portions secured to the bar in spaced relation and a predetermined distance between their apices, the inner adjacent end portions of the cutting edges of adjacent sections being spaced apart, and spacing means separately attached to the bar between adjacent sections, said means having a non-cutting edge extending between the inner adjacent end portions of their cutting edges.

WILLIAM R. GILLETTE.