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PATENTED JAN. 12, 1904.

W. W. JONES.
CUTTER BAR FOR MOWING MACHINES.

APPLICATION FILED APR. 1, 1903.

NO MODEL.

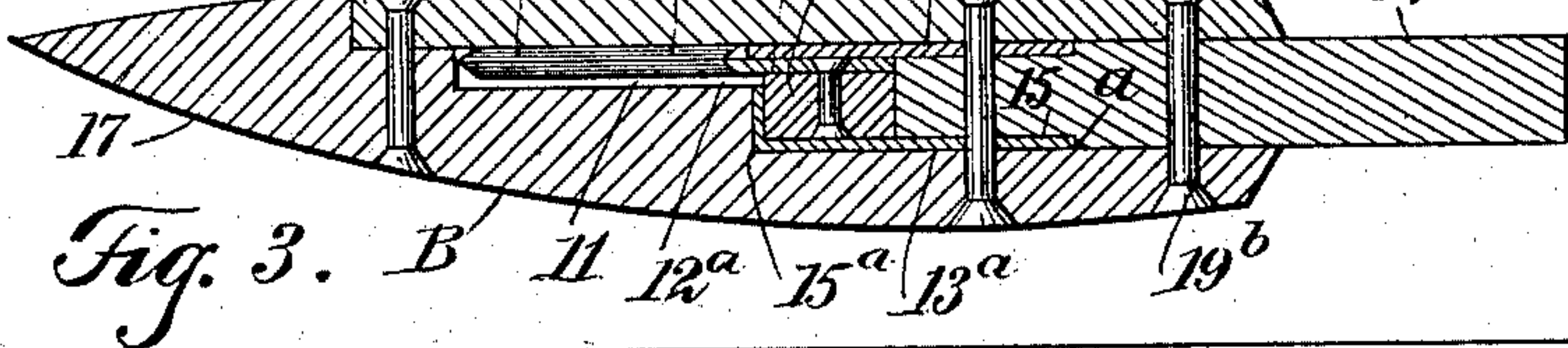
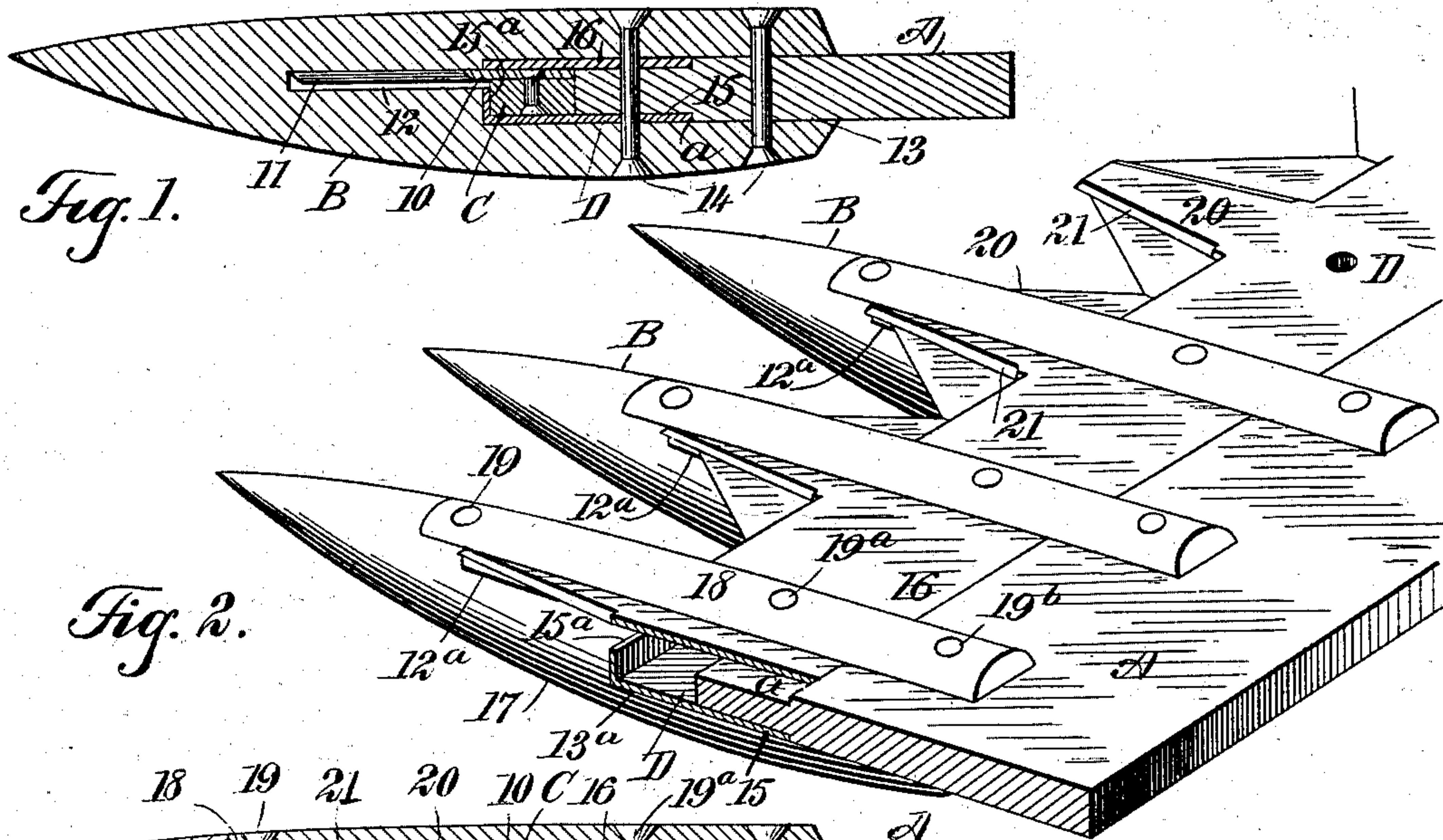
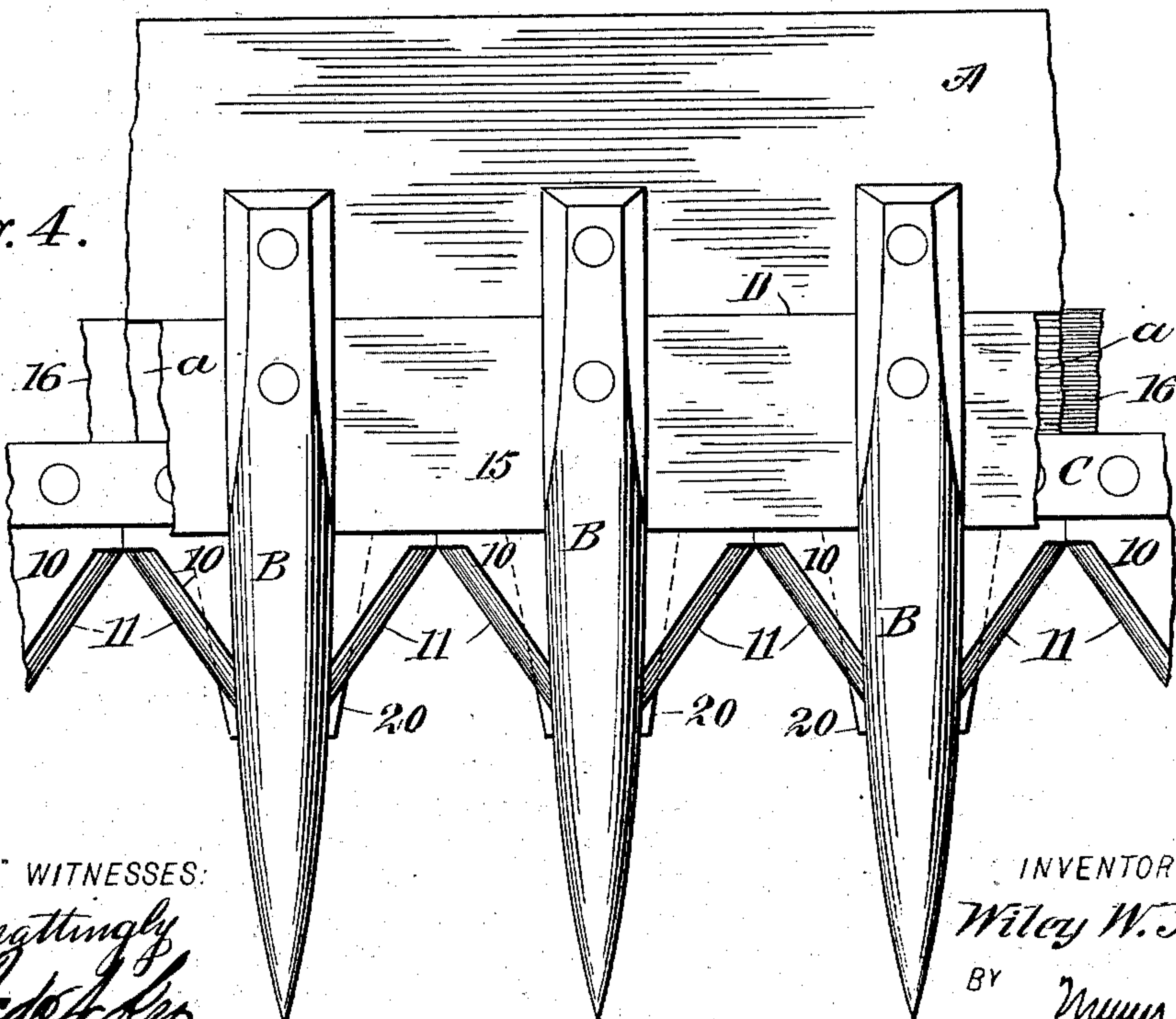


Fig. 4.



WITNESSES:

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WILEY WILSON JONES, OF DOWNS, KANSAS.

CUTTER-BAR FOR MOWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 749,613, dated January 12, 1904.

Application filed April 1, 1903. Serial No. 150,547. (No model.)

To all whom it may concern:

Be it known that I, WILEY WILSON JONES, a citizen of the United States, and a resident of Downs, in the county of Osborne and State of Kansas, have invented a new and Improved Cutter-Bar for Mowing-Machines, of which the following is a full, clear, and exact description.

The purpose of the invention is to so construct a cutter-bar especially adapted for field-machines that the sickle-bar will have a uniform and firm support throughout the length of its travel and in operation will be protected from dust, gum, or any matter or material likely to crowd its action, thereby insuring the least possible amount of friction and enabling the cutter-bar and sickle-bar to be made lighter and wear longer than usual.

Another purpose of the invention is to bevel the under surface of the knives and so set the knives that they will cut at the upper walls of the slots in the guard-fingers either directly against said walls or against fixed knives held by a suitable ledger-plate against said upper walls, which fixed knives when used are beveled at their upper edges. Under this arrangement of knives a slanting upper or scythe cut is obtained on the grass, and as the bevels of the sickle-knives are at their under faces the movement of the machine over the stubble will tend to force the knives upward, holding them to their work. Furthermore, the grass is cut clean and is drawn away from the knives and not drawn into the slots of the guard-fingers, as under the ordinary set and beveling of sickle-knives.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a longitudinal section through a guard-finger and a transverse section through the improved cutter-bar and the sickle-bar, the knives being shown as cutting directly against the upper walls of the slots in the guard-fingers. Fig. 2 is a perspective view

of a portion of the improved cutter-bar, showing the application of fixed knives at the upper walls of the slots in the guard-fingers, the left-hand portion of the sickle-bar being broken away. Fig. 3 is a transverse section through the cutter-bar shown in Fig. 2 and through the sickle-bar and a knife thereon in proper position relative to the cutter-bar and guard-fingers, and Fig. 4 is a bottom plan view of a portion of the cutter and sickle bars of the type of construction shown in Figs. 2 and 3.

A represents the cutter-bar, which may be of any approved type; B, the guard-fingers carried by the cutter-bar; C, the sickle-bar, and D the casing in which the sickle-bar has movement and which extends through the guard-fingers. The sickle-bar C is provided with any desired number of knives 10 of the usual formation; but the knives are attached to the upper face of the sickle-bar C and have their cutting edges provided with beveled surfaces 11 at their under portions, as the knives in the operation of the sickle-bar C are adapted to work in connection with and have more or less bearing against the upper wall of the usual slots 12 in the forward portions of the guard-fingers B.

At the rear portion of each guard-finger B a wider slot 13 is produced, which communicates with the narrower slot 12, in which the cutting-sections of the knives have motion, and the wider-slotted rear portions of the guard-fingers B are adapted to receive the cutter-bar A, enabling the guard-fingers to pass both at the top and bottom of the said cutter-bar. The wider rear slots 13 of the guard-fingers B are of sufficient length to provide a space at the forward edge of the cutter-bar, in which space the sickle-bar C has reciprocating movement. The casing D, which practically incloses the sickle-bar C, consists of a lower plate 15, having an upwardly-extending front section 15^a and an upper plate 16, which at its forward end is separated from the upwardly-extending section 15^a, and these plates 15 and 16 are countersunk in recesses *a*, made in the top and bottom portions of the forward edge of the cutter-bar A, while the forward ends of the plates 15 and 16 and the upwardly-extending section 15^a engage with the for-

ward walls of the larger rear slots or openings 13 in the guard-fingers. The guard-fingers are attached to the cutter-bar A by rivets 14 or their equivalents, and one of the said rivets likewise passes through the upper and lower plates 15 and 16 of the casing D, thus serving to hold the said plates in position.

Under the construction shown in Fig. 1 the cutting portions of the sickle-knives 10 operate in the forward slots 12 of the guard-fingers in direct engagement with the upper walls of the said slots 12, and no fixed knives are employed opposed to the knives of the reciprocating sickle-bar C, which may be operated in any suitable or approved manner.

Under the construction of the device shown in Figs. 2, 3, and 4 stationary knives are employed in connection with the reciprocating sickle-knives and the guard-fingers B are constructed in two sections, a body-section 17, which is a lower section, and an upper section 18, which is preferably much narrower transversely than the lower section 17 of a guard-finger, as is particularly shown in Fig. 2.

Each lower section 17 of a guard-finger is provided with a shallow forward recess 12^a at its upper portion, which recess 12^a when the upper section 18 of the guard-finger is secured in position relative to the lower or body section 17 forms the slot for the passage of a knife of the sickle-bar C, corresponding to the slot 12 in the form of the guard-finger. (Illustrated in Fig. 1.) Furthermore, the lower or body section 17 of each guard-finger is provided with a rear deeper recess 13^a, which in connection with the upper section 18 is the equivalent of the slot 13. (Illustrated in the simple form of the device shown in Fig. 1.) The casing D is of the same construction, is attached to the cutter-bar A, and is located in the guard-fingers in the same manner as has been described, except that the upper plate 16 of the casing is practically a ledger-plate, as from it knives 20 are forwardly extended, and these knives 20 correspond in number to the number of guard-fingers B and engage with the upper walls of the forward guide-slots 12^a of the said guard-fingers. The stationary knives 20 are preferably of less dimensions than the knives which are carried by the sickle-bar C, and their cutting edges 21 are beveled from the top downward, as is shown in Fig. 2. When attaching the form of guard-fingers shown in Figs. 2, 3, and 4 to the cutter-bar A, the upper sections 18 are secured to the forward end portions of the lower sections 17, in which they are countersunk, by suitable rivets 19, while other rivets 19^a and 19^b are also employed, the rivets 19^a being passed through both of the sections of the guard-fingers to which they belong and through the upper and lower plates of the casing B, while the rear rivets 19^b are passed through both sections of the guard-fingers and through the cutter-bar A.

Under both constructions described it will be observed that the grass is given a scythe cut and that in operation the knives are pressed upward in direction of the upper walls of the guide-slots 12 and 12^a, respectively, in the said guard-fingers, thus rendering it impossible for the grass to enter any space between the upper portions of the knives and the said guide-slots, so as to impede the action of the knives; but, on the contrary, the grass as it is cut is automatically freed from the knives. Furthermore, it will be observed that the casing D effectually prevents the sickle-bar C from becoming clogged by any extraneous matter, as the said sickle-bar C is covered throughout its length, and as the casing D is of uniform construction at top and bottom the sickle-bar C travels between uniform surfaces.

I desire it to be understood that the recesses in the cutter-bar may be omitted and that the upper and lower plates 16 and 15 of the casing D may be secured directly upon flush surfaces of the upper and lower portions of the cutter-bar, if desired.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a cutting apparatus, a cutter-bar, guard-fingers constructed in upper and lower sections extending rearward of their main or knife-receiving sections, a casing secured between the members of the guard-fingers, and a sickle-bar held to travel protectedly in the said casing, said casing having an opening for the forward projection of the knives of the sickle-bar, substantially as described.

2. In a cutting apparatus, a cutter-bar for mowing-machines, guard-fingers attached to the cutter-bar, provided with knife-guide slots and with upper and lower rearwardly-extending members adapted for attachment to corresponding faces of the cutter-bar, a casing secured between the upper and lower members of the guard-fingers and having a longitudinal slot therein registering with the knife-guide slots in the guard-fingers, a sickle-bar having reciprocating movement throughout the length of the casing, and knives extending outward from the sickle-bar through the slots in the casing into the guide-slots in the guard-fingers, the cutting edges of which knives are given an upward bevel, as described.

3. In a cutting apparatus, a cutter-bar for mowing-machines, guard-fingers attached to the cutter-bar, provided with knife-guide slots and with upper and lower rearwardly-extending members adapted for attachment to corresponding faces of the cutter-bar, a casing secured between the upper and lower members of the guard-fingers and having a longitudinal slot therein, registering with the knife-guide slots in the guard-fingers, a sickle-bar having reciprocating movement throughout the length of the casing, and knives extending

outward from the sickle-bar through the slots in the casing into the guide-slots in the guard-fingers, the cutting edges of which knives are given an upward bevel, the location of the knives of the sickle-bar in the guide-slots of the guard-fingers being such that said knives have cutting relation with reference to the upper walls of the guide-slots in the guard-fingers, and are spaced from the lower walls of such slots, as described.

4. In a cutting apparatus, a cutter-bar, a casing connected therewith, blades extending from the upper portion of the casing, a sickle-bar held to reciprocate in the casing, knives carried by the sickle-bar, adapted for contact with the under face of the knives on the casing, the cutting edges of the knives on the sickle-bar having an upward bevel and the corresponding edges of the knives extending from the casing being provided with a downward bevel, and guard-fingers arranged for attachment to the cutter-bar, which guard-fingers have slots to receive the fixed and the movable knives and recesses for the reception of the casing, as described.

5. In mowing-machines, a cutter-bar, guard-fingers attached to the cutter-bar, provided with guide-slots near their forward ends, a casing sustained partially by the cutter-bar and partially by the guard-fingers, extending substantially the length of the forward edge of the cutter-bar, fixed blades extending from the upper portion of the casing into the guide-slots in the guard-fingers to an engagement with the upper walls of the said slots, a sickle-bar held to reciprocate in the said casing, being protected throughout its length by the casing, and knives carried by the sickle-bar, extending within the guide-slots of the guard-fingers to an engagement with the under faces of the fixed knives, the cutting edges of the sickle-knives being beveled from the under faces of the knives upwardly, as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILEY WILSON JONES.

Witnesses:

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M. H. CROSS.