G. M. CROWDER.

ATTACHMENT FOR MOWING MACHINES.

APPLICATION FILED MAY 17, 1911.

**1,027,463.**

Patented May 28, 1912.

3 SHEETS—SHEET 1.

Fig. 1.

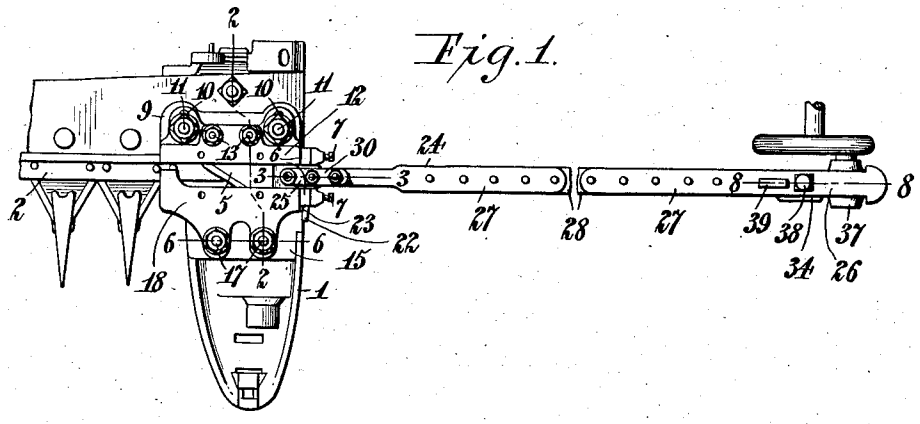


Fig. 2.

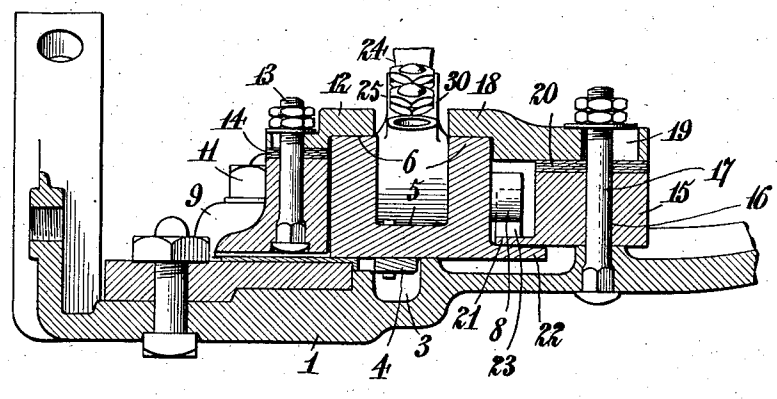
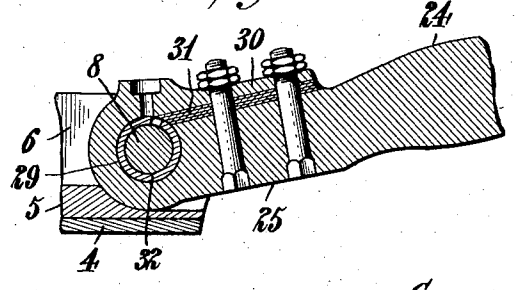


Fig. 3.



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3 SHEETS—SHEET 2.

*Fig. 4.*

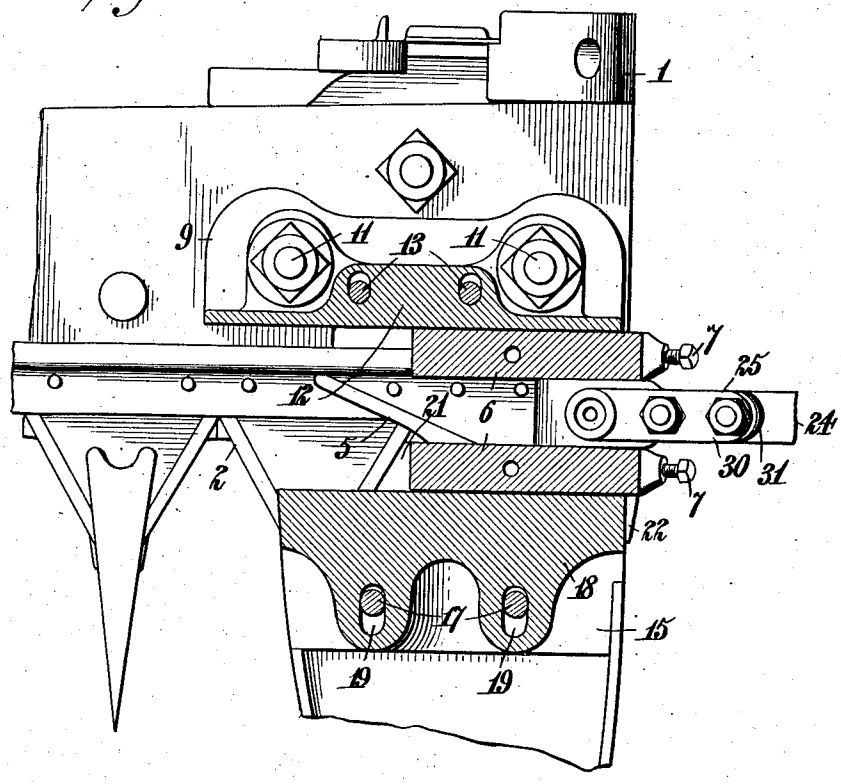
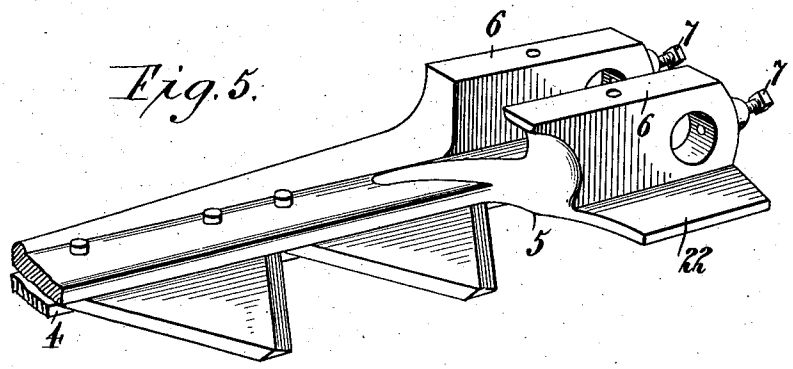



*Fig. 5.*

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3 SHEETS—SHEET 3.

Fig. 6.

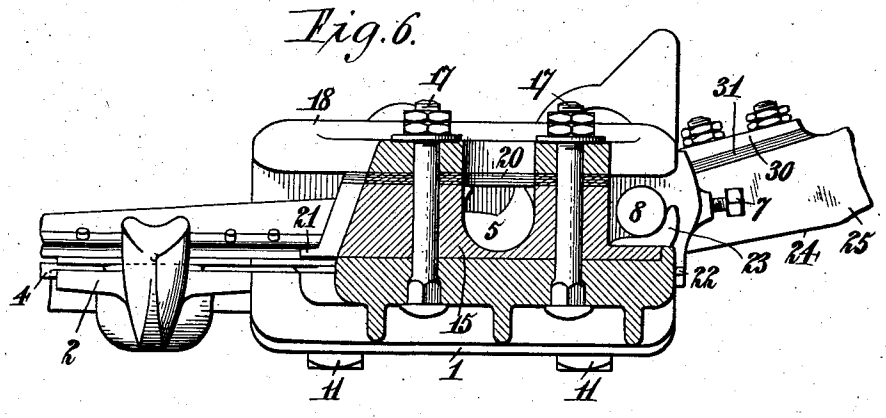



Fig. 7.

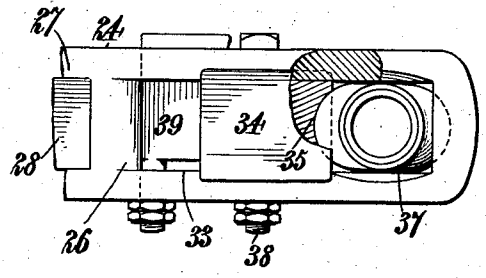
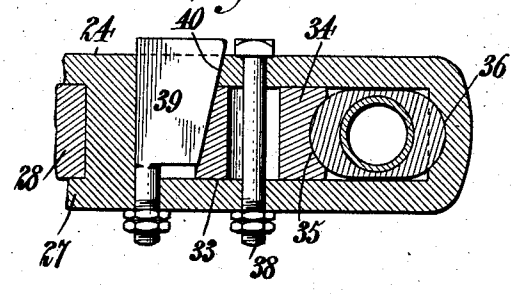



Fig. 8.

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# UNITED STATES PATENT OFFICE.

GEORGE M. CROWDER, OF LEBANON, ILLINOIS.

## ATTACHMENT FOR MOWING-MACHINES.

1,027,463. Specification of Letters Patent. Patented May 28, 1912.

Application filed May 17, 1911. Serial No. 627,665.

*To all whom it may concern:*

Be it known that I, GEORGE M. CROWDER, a citizen of the United States, residing at Lebanon, in the county of St. Clair and State of Illinois, have invented new and useful Improvements in Attachments for Mowing-Machines, of which the following is a specification.

This invention relates to mowing machines and more particularly to the mounting of the sickle bar upon the shoe.

The object of the invention is the provision of a novel cutter-head or sickle-head and its associated bearings which are so adjusted as to take up all lateral or vertical wear in the cutter-head and bearings and thereby keep the head from rattling in the bearings.

A further object of the invention is the provision of a novel connection between the knife-head and the pitman which prevents vertical movement of the head when reciprocated by the pitman and heretofore the connection of the pitman with the cutter-head has been very high and when the pitman shoved the cutter-head it pressed the same down upon the knife bar and, as the pitman was pulling, raised the knife-head up from the bar. This caused the sickle bar to break about ten inches from the connection of the pitman or directly at the end of the knife head.

It is the object of this invention to avoid this difficulty and broadly speaking consists in connecting the pitman as low as possible upon the knife-head and directly at the end thereof, and also in providing the plates so that they may be adjusted upon the head in such a manner as to take up all wear. With a construction of this type there will be no knocking or hammering and the parts therefore naturally run lightly and smoothly, thus making the cut in the grain simpler.

Further objects of the invention will appear as the following specific description is read in connection with the accompanying drawings, which form a part of this application, and in which:—

Figure 1 is a top plan view showing a mower shoe and part of the finger-bar attached thereto, the knife-bar and operating pitman therefor. Fig. 2 is a transverse section on the line 2—2 of Fig. 1. Fig. 3 is a detail longitudinal section on the line 3—3 of Fig. 1. Fig. 4 is a horizontal section. Fig. 5 is a perspective view of the knife-head. Fig. 6 is a section taken on the line 6—6 of Fig. 1. Fig. 7 is a detail side elevation of the crank pin end of the pitman with parts broken away. Fig. 8 is a detail vertical longitudinal section on the line 8—8 of Fig. 1.

Referring more particularly to the drawings, 1 represents the ordinary cutter-bar shoe to which the finger bar 2 is connected. The cutter-bar shoe and finger bar shown herein are of the ordinary Deering type and need no further explanation. The shoe is shown grooved, as at 3, as is ordinary for the purpose of permitting the passage of the rivet strip 4 which holds the cutter blades in position upon the cutter bar and upon the cutter-head 5. This cutter-head comprises an integral casting with longitudinally extending flanges or ribs 6 which are separated and which have keyed in their lower portions, at the rear ends thereof by means of the set screws 7, a transverse pitman shaft 8. This pitman shaft projects beyond one of the flanges 6 for a purpose to be hereinafter described.

Mounted upon the shoe 2 upon one side of the groove 3 is a bearing block 9 having a pair of slots 10 therein to receive the attaching bolts 11 which pass through the shoe and block and permit the passage of the block 9. This block carries a suitable flange 12 which is secured to the same by bolts 13 and interposed between the flange member and the block are suitable shims 14 which may be removed as the head wears or as the flange wears. Mounted upon the shoe upon the opposite side of the groove from the block 9 is a bearing block 15 having the holes 16 which are engaged by the bolts 17 for securing the block to the shoe. This block 15 has mounted upon it a flange member 18 which is also slotted, as at 19, to receive the bolts 17 and is separated from the block 15 by suitable shims 20, so that it may be adjusted downwardly upon the flange of the head when necessary. The block 15 is provided with an inwardly extending flange 21 at its lower end under which operates a flange 22 carried by the head 5, which flange 21 and the coacting flange 22 prevents the head from rising over through the flange member 18 should it become loosened. The projected end of the pitman shaft 8 travels over the flange 21 and between the same the flange and the flange member 18 and moves in a path which would cause said end to en-

gage the lug 23 carried upon the flange 21, if the head moved far enough to accomplish this result. The projected end of the shaft does not engage the lug at any time except when the cutter bar is elevated at this time the lug acts to prevent the accidental disengagement of the head from the cutter-bar, the projected end of the shaft however nearly engages the lug in each rearward movement so that when the cutter-bar is elevated there is only a slight drop of the sickle head which prevents binding when the cutter-bar is again thrown into operative position. When the shaft is brought into engagement with the lug it is then in position to be removed from the head so that the pitman may be disconnected without removing the head from the cutter bar. The lug is separated a sufficient distance from the body of the block 15 to permit the removal of the shaft when necessary. By removing the shaft 8, the cutter head and sickle bar may be removed when it is desired to repair the same.

The pitman 24 which connects the head with the crank pin 8 of the operating mechanism comprises bearing heads 25 and 26, each of which is provided with arms 27 which connect the head with the wooden insertion 28 which forms the body of the pitman. The head 25 is apertured, as at 29, and has a slot leading into said aperture which forms an adjusting finger 30. This adjusting finger is separated from the body of the head by shims 31 which may be removed to take up wear in the split bearing 32 which is mounted in the aperture 29. The head 26 is slotted, as shown at 33, and slidably mounted in the slot is a bearing block 34 which is provided with a socket 35 in its end to correspond with a similar socket 36 in the end wall of the slot. Mounted in these sockets is a bearing member 37 which is journaled upon the pitman 24. The bearing block 34 is slotted, and passing through the slot and through the side walls of the head 26 is a bolt 38 which prevents lateral movement of the bearing block but permits longitudinal movement of the same within the slot 33. This bearing block is adjustably held in engagement with the bearing member 37 by means of a wedge bolt 39 which passes through transverse slots 40 in the sides of the head. In this manner the wear upon the sockets and bearing member 37 may be readily taken up and, at the same time, the device will permit the shoe to be turned at a relatively greater angle to the horizontal and not place any torsional strain upon the pitman.

It will be noticed in the structure just described that the shaft 8, which connects the pitman with the head, is placed as low as possible so as to obtain the thrust and pull as nearly in line with the cutter-bar as is possible. The tendency of the head to raise and lower with each movement of the pitman is therefore obviated to a great extent and, while this tendency cannot be entirely obviated unless the pitman travels in a direct line with the cutter-bar, the wear upon the parts is considerably lessened and means is provided for taking up this wear and thereby preventing breaking of the sickle-bar and the hammering attending loose parts.

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

1. In combination, a mower shoe and finger blade, a cutter-head slidably mounted thereon, bearing blocks mounted upon the shoe for adjustably holding the head in place, a pitman shaft carried by the head, and means on one of the blocks for engaging said shaft to limit the movement of the head in one direction.

2. In combination, a mower shoe, a cutter-head slidably mounted thereon and having a flange, a bearing block adjustably mounted toward and away from the cutter-head and having a flange to overhang the flange on said cutter-head, a second bearing block adjustably mounted upon the shoe and acting in opposition to the first bearing block, a pitman shaft mounted in the cutter-head and having a projecting end, means lying in the path of the projecting end of the shaft for limiting the movement of the head in one direction, flange members overhanging the head and adjustably secured thereto, and shims arranged between the flange members in the bearing blocks.

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

GEORGE M. CROWDER.

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