M. F. WILLIAMS.

HAMMER FOR SHREDDING MACHINES.

APPLICATION FILED MAY 18, 1908.

906,346. Patented Dec. 8, 1908.

Fig. 1.

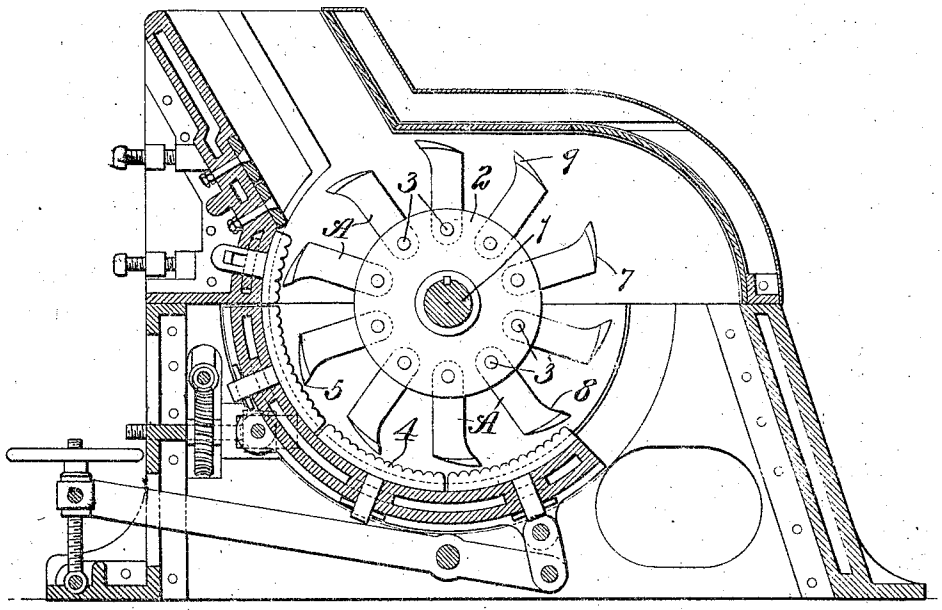


Fig. 2.

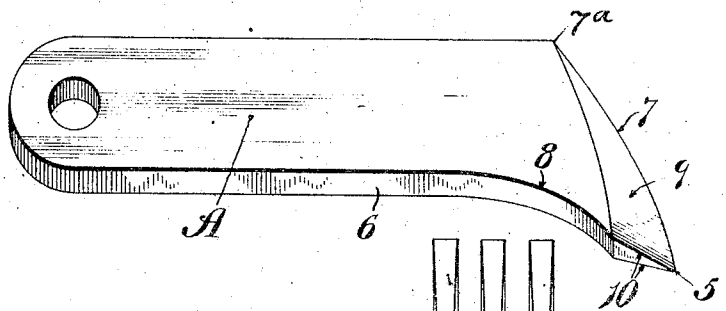


Fig. 3.

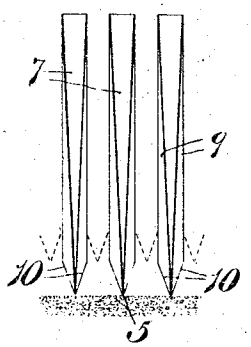
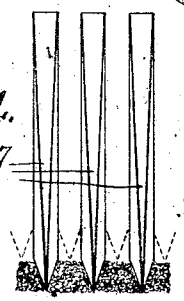


Fig. 4.



Witnesses:
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UNITED STATES PATENT OFFICE.

MILTON F. WILLIAMS, OF ST. LOUIS, MISSOURI, ASSIGNOR TO WILLIAMS PATENT CRUSHER & PULVERIZER COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION OF MISSOURI.

HAMMER FOR SHREDDING-MACHINES.

No. 906,346. Specification of Letters Patent. Patented Dec. 8, 1908.

Application filed May 18, 1908. Serial No. 433,483.

To all whom it may concern:

Be it known that I, MILTON F. WILLIAMS, a citizen of the United States, residing at St. Louis, Missouri, have invented a certain new and useful Improvement in Hammers for Shredding-Machines, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings forming part of this specification, in which—

Figure 1 is a vertical sectional view of a machine provided with hammers constructed in accordance with my invention; Fig. 2 is an enlarged perspective view of one of the hammers; Fig. 3 is an end view of a number of hammers; and Fig. 4 is a view similar to Fig. 3 for the purpose of illustrating the action of the hammers on the material.

This invention relates to the hammers or cutting members of machines that are used for shredding or cutting hay, straw, alfalfa and similar material.

The main object of my invention is to provide a hammer which is so constructed that it will sever the material with a shearing cut and also draw the material into the machine.

Referring to the drawings which illustrate the preferred form of my invention, 1 designates a rotating shaft provided with disks 2 which carry a plurality of transversely extending rods 3 on which transverse rows of hammers or cutting members A are pivotally mounted. Said hammers coöperate with a grinding surface 4 that may be of any preferred design, and each hammer consists of an approximately straight shank provided at its outer end with a striking point 5 that projects forwardly beyond the front edge 6 of the hammer. The end face 7 of the hammer recedes inwardly from the striking point 5 so that it coöperates with the straight rear edge of the hammer to form an angular-shaped heel 7^a and the underneath side of the striking point 5 curves inwardly, as shown in Fig. 2, so as to form a curved throat portion 8 which tends to throw the material disintegrated by the hammer inwardly into the machine.

The side faces of the striking point or forwardly projecting portion of the hammer are beveled off at 9 so as to form an approximately wedge-shaped striking point, as shown in Figs. 3 and 4. The narrow portion of the wedge is located at the forward end of the striking point so that the hammer is provided at its outer end with two sharp cutting edges 10 that are disposed at an angle to the front edge of the shank of the hammer and also at an angle to the vertical plane in which the hammer moves. Consequently, when said edges strike the material they will pass through it with a shearing cut and thus completely sever the material. In view of the fact that the striking point of the hammer is wedge-shaped the hammers of each transverse row of hammers will coöperate with each other to compact or compress the material as the striking points pass through the material, this feature being illustrated clearly in Fig. 4. The hammers are so arranged that the hammers of one transverse row will be located intermediate the hammers of the adjacent transverse rows, as shown in dotted lines in Figs. 3 and 4, thereby causing the material to be severed or cut into small particles, the chunks or small portions of material which the hammers of one transverse row have produced being severed by the hammers of the succeeding transverse row. By providing the hammer with a wedge-shaped cutting portion and an end face which recedes inwardly or away from the grinding surface of the machine, the hammer will clear the material or draw out of it easily after it has severed the material.

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

1. A hammer for the purpose described, consisting of a shank provided with a striking point that projects forwardly beyond the front edge of the shank, said striking point having a wedge-shaped portion, and cutting edges that are disposed at an angle to the vertical plane in which the shank moves; substantially as described.

2. A hammer for the purpose described, consisting of a shank provided at its outer end with a pair of inclined diverging cutting edges that are disposed at an angle to the vertical plane in which said shank moves; substantially as described.

3. A hammer for the purpose described, consisting of a shank provided at its outer end with a forwardly projecting striking point, the side faces of which are beveled off so as to produce two inclined diverging cutting edges; substantially as described.

4. A hammer for the purpose described, comprising a shank having a forwardly projecting portion and an end face that recedes inwardly, the sides of said forwardly projecting portion being beveled off so as to produce inclined cutting edges that are disposed at an angle to the side faces of the shank; substantially as described.

5. A machine of the character described, having a plurality of staggered rows of hammers, each of which consists of a shank provided with a receding end face and a forwardly projecting striking portion, the underneath side of which curves inwardly and merges into the front edge of said shank, the side faces of said forwardly projecting portion being beveled off so as to produce a wedge-shaped striking end having inclined cutting edges; substantially as described.

In testimony whereof I hereunto affix my signature in the presence of two witnesses, this thirteenth day of May 1908.

MILTON F. WILLIAMS.

Witnesses:

F. R. CORNWALL,

GEORGE BAKEWELL.