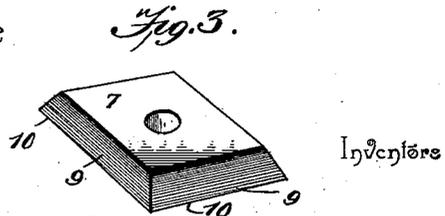
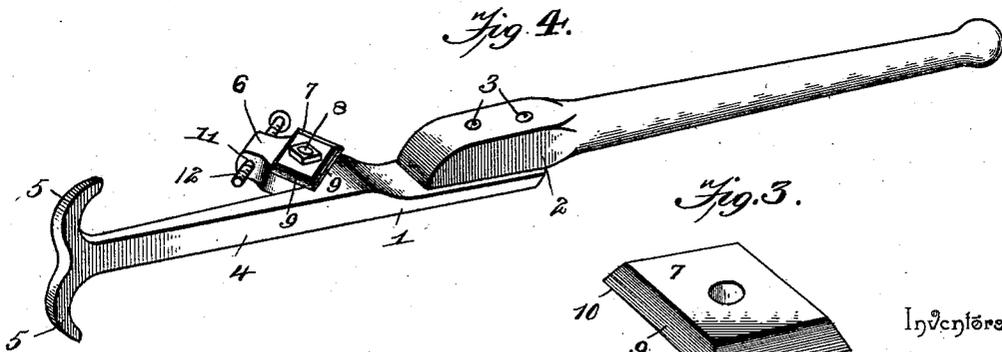
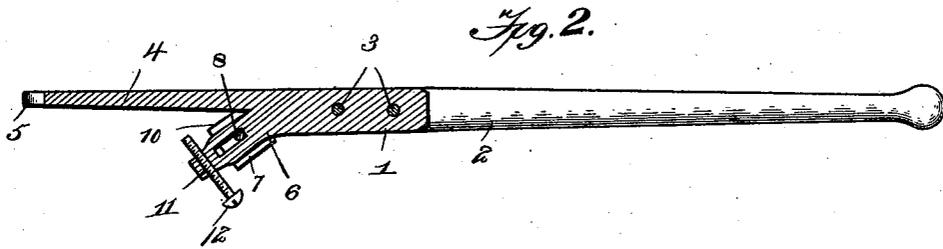
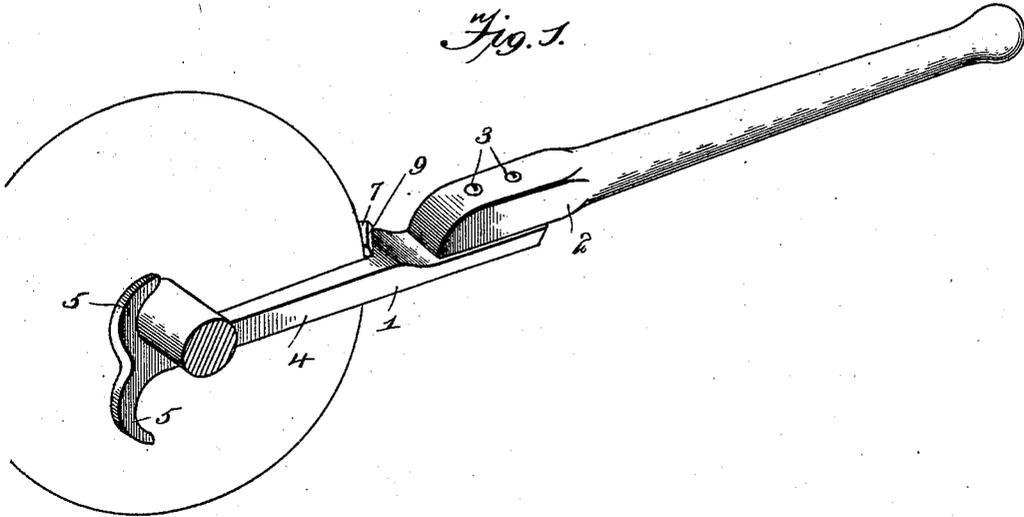


(No Model.)

G. B. STILES & L. F. CHRESTENSON.
HARROW DISK SHARPENER.

No. 533,927.

Patented Feb. 12, 1895.



Witnesses

John C. Shaw
J. B. Deane

Inventors

George B. Stiles

By their Attorneys, *Louis F. Chrestenson,*

C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

GEORGE B. STILES AND LOUIS F. CHRESTENSON, OF FULDA, MINNESOTA.

HARROW-DISK SHARPENER.

SPECIFICATION forming part of Letters Patent No. 533,927, dated February 12, 1895.

Application filed June 13, 1894. Serial No. 514,467. (No model.)

To all whom it may concern:

Be it known that we, GEORGE B. STILES and LOUIS F. CHRESTENSON, citizens of the United States, residing at Fulda, in the county of Murray and State of Minnesota, have invented a new and useful Harrow-Disk Sharpener, of which the following is a specification.

This invention relates to a device for sharpening the edges of harrow-disks, and it has for its object to produce an arrangement wherein the knife will be capable of being changed so as to present a series of edges to the disk thereby making it possible to use the same knife a number of times without having to remove it from the device to sharpen it.

A further object is to provide means for preventing the excessive cutting-away of the disk, and for insuring a regular and predetermined edge.

Other objects are present in our invention, and the full attainment of all will be apparent in the following specification.

In the drawings: Figure 1 represents a perspective view of our improvements, showing them in the position which they assume when in use; Fig. 2, a vertical section taken through the device and extending to the disk, the line of such section being taken longitudinally with the axis thereof; Fig. 3, a detail perspective of the cutter or knife; Fig. 4, a perspective view of the device, showing it dissociated from the disk.

The reference numeral 1 indicates the body of our sharpener, and this is formed, preferably, of cast steel and bolted to the handle 2, which we prefer to construct of wood or other light material.

3 indicates the bolts by which the joining of the two parts is effected. Formed integral with the body 1, and longitudinally aligned with one side thereof, is the arm 4, which extends some distance from the body, and it is provided at its end with the fingers 5. The fingers 5 are formed integral with the bar 4, and extend outwardly therefrom in opposite directions, while they are curved in substantially the arc of a circle so that they may snugly embrace the axle of the harrow-disk.

The body 1 has also formed integral therewith, and directly adjacent to the base or inner end of the bar 4, the stud 6, which is

slotted longitudinally and adapted for the reception of the cutter or blade 7. The stud 6 is adapted to receive in its aforesaid slot the bolt 8, which is movable longitudinally therein and which passes through the knife 7 so as to hold it rigidly in place. The knife 7 consists of a substantially square cast-steel plate, having its four sides formed with the edges 9, beveled from the side farthest from the stud 6 outwardly to the side adjacent thereto, so as to form four cutting-edges 10. Thus it will be seen that the knife 7 is capable of axial adjustment on the bolt 8, so as to place any of its edges 9 adjacent to the edge of the disk, and in any relation thereto, thus regulating the bevel of the edge which is given to the disk. It will also be seen that when one edge of the knife 7 has been worn dull the adjacent edge may be placed in engagement with the disk, and so on until all of the four edges have been exhausted, thus facilitating the extended operation of the cutter without having to remove it for sharpening. When all of the edges of the knife have become dull, it may, of course, be removed and sharpened as heretofore.

Formed in the outer end of the stud 6, and extending in a line equal to about forty-five degrees from the bar 4, is the opening 11, which is screw-threaded throughout its length and is adapted for the reception of the gage-bolt 12. This bolt is similarly threaded and adapted to be moved toward and from the harrow-disk so as to regulate the distance which it is desired that the knife move toward the disk.

By the means of this device the sharpener may be set and operated until the end of the bolt 12 comes into engagement with the side of the disk, whereupon all further movement of the knife toward the harrow-disk will be suppressed. This will overcome the danger of needlessly grinding away the edges of the disk, which very often occurs from carelessness of the operator.

In the use of our invention, one of the fingers 5 is placed on the under side of the disk axle, so that it will snugly engage therewith. The knife 7 is next adjusted to suit the angle which it is desired to give to the edge, and the amount of filings that will have to be removed before such edge can be obtained, the



stud 6 having been first made to lie on the side of the disk which is opposite the side occupied by the bar 4. It will be understood that this arrangement of the stud 6 is possible, owing to the slight curve which is given to fingers 5, thus permitting the stud to be first put in position and the fingers subsequently sprung around the axle. After the device has been put in operative adjustment, as in Fig. 1, the handle 2 should be grasped and operated to swing the entire arrangement on the axle of the disk, which will cause the knife 7 to traverse the edge of the disk and, by engagement therewith, to effect the sharpening operation. It is possible, though perhaps not preferable, to hold the cutter stationary and to cause the axle, and consequently the disks, to revolve, which will have the same effect as the previously-described operation, but which will be harder to perform. After the knife 7 has cut away as much of the disk as is desired, the gage-bolt 12 will engage the disk and prevent further operation of the knife, assuming, of course, that the gage-bolt has been previously adjusted as explained. This adjustment of the gage-bolt will be very easy and will require no accurate calculation, since it can be easily determined what amount of edge will be necessary.

Having described our invention, what we claim is—

1. A disk sharpener for harrows comprising an elongated body portion, having at one end a hook, whereby it may be connected to the axle of the disk, and at the remaining end a handle, a stud or arm rigidly secured to the body portion and projecting out diagonally therefrom and toward the end having the hook, said stud or arm being slotted longitudinally, a cutter provided with a bolt passing through the slot in the stud or arm, and whereby the cutter is adjustably secured on the arm, a screw operating in the free end of the stud or arm, and disposed at right angles thereto, so that it may engage with the side of the disk, and gage the operation of the cutter, substantially as described.

2. A disk sharpener consisting of an elon-

gated body portion, provided at one end with two hooks, oppositely disposed, and at its remaining end with a handle bar, a stud or arm rigidly secured to the body portion, and projecting out therefrom diagonally, and toward the end having the hooks, said stud or arm being formed with a longitudinal slot therein, a cutter having a straight edge, and adjustably secured on the stud or arm by means of a bolt passing through the slot thereof, the straight edge of the cutter being arranged parallel with the inner side of the stud or arm, so as to form an acute angle in which the edge of the disk may be received, and by which it may be held in the proper position during the sharpening operation, substantially as described.

3. A disk sharpener consisting of an elongated body portion, having at one end two hooks disposed oppositely from each other, and at the remaining end with a handle, a stud or arm rigid on the body portion, and projecting out diagonally therefrom, and toward the end having the hooks, said stud or arm being formed with a longitudinal slot therein, a cutter consisting of a square plate, having its four edges sharpened, and having a bolt passing through the stud or arm, whereby the cutter may be secured adjustably thereon, and whereby either of its four sides may be made to perform the cutting operation, a screw passing through the outer end of the stud or arm, and extending at right angles thereto, said screw being capable of engaging with the side of the disk, and of operating to gage the operation of the cutter, substantially as described.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

GEORGE B. STILES.
LOUIS F. CHRESTENSON.

Witnesses to signature of George B. Stiles:

J. A. MAXWELL,
BELL M. MAXWELL.

Witnesses to signature of L. F. Chrestenson:

J. A. MAXWELL,
WILLIAM H. GODFREY.