(No Model.)

S. HAINES & W. B. MATHIS.

DISK FURROWER.

No. 486,776. Patented Nov. 22, 1892.

Fig. 1.

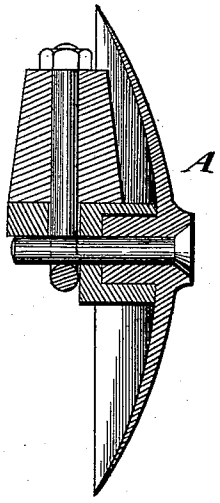


Fig. 2.

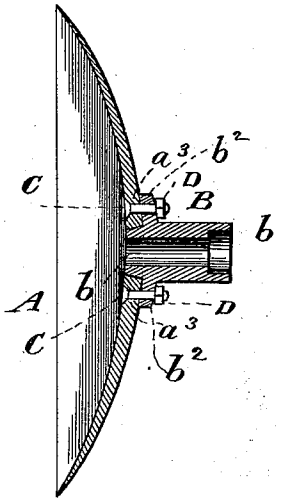


Fig. 3.

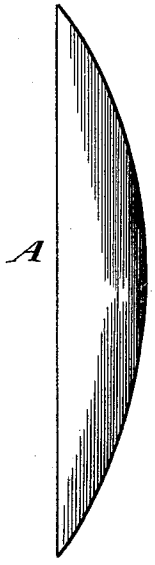
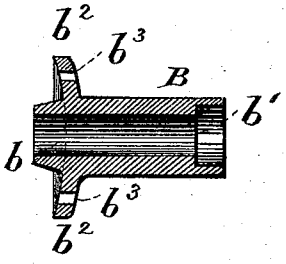


Fig. 4.



Witnesses.
A. Ruppert,
G. B. Towles

Inventors.
Spencer Haines.
Wm. B. Mathis.
Per Thomas P. Simpson,
Atty

UNITED STATES PATENT OFFICE.

SPENCER HAINES AND WILLIAM B. MATHIS, OF RANCOCAS, NEW JERSEY.

DISK FURROWER.

SPECIFICATION forming part of Letters Patent No. 486,776, dated November 22, 1892.

Application filed February 28, 1891. Renewed October 18, 1892. Serial No. 449,295. (No model.)

To all whom it may concern:

Be it known that we, SPENCER HAINES and WILLIAM B. MATHIS, citizens of the United States, residing at Rancocas, in the county of Burlington and State of New Jersey, have invented certain new and useful Improvements in Disk Furrowers; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The special object of the invention is to improve the disk furrower described in United States Patent No. 242,115; and it consists in connecting the hub detachably to the disk, so that an accident or the wearing out of one part will not necessitate the loss of the other by the means hereinafter particularly described.

Figures 1, 2, and 4 of the drawings are diametrical sections, and Fig. 3 a front elevation.

In the drawings, A represents the disk, and B the hub of the furrower, the latter being provided with a central hole b, rabbet or sand-cap b', and inclined flange b^2, with bolt-holes b^3. The furrower A and the hub-flange b^2 are correspondingly concavo-convex in form, the concavity of the latter being made to fit snugly over the convexity of the former. C D are bolts and nuts which secure hub and disk together, the bolt-shanks passing through the flange-holes b^3 and disk-holes a^3. By making hub and disk separate we can cast the hub cheaply, while only the disk is made of steel necessarily.

We are aware that it is not new to put the hub through the disk and hold it on the inside by rivets; but our hub is fastened on the outside of the disk by removable bolts.

Having thus described all that is necessary to a full understanding of the invention, what we claim as new, and desire to protect by Letters Patent, is—

The furrower-hub B, having central hole b, sand-band b', and perforated concavo-convex flange b^2, apertured at b^3, whereby it can be bolted to the outside of disk, as described.

In testimony whereof we affix our signatures in presence of two witnesses.

SPENCER HAINES.
WILLIAM B. MATHIS.

Witnesses:
R. R. LIPPINCOTT,
CHARLES R. JOHNSON.