(No Model.)

F. NISHWITZ.

HARROW.

No. 263,565. Patented Aug. 29, 1882.

Fig. 1,

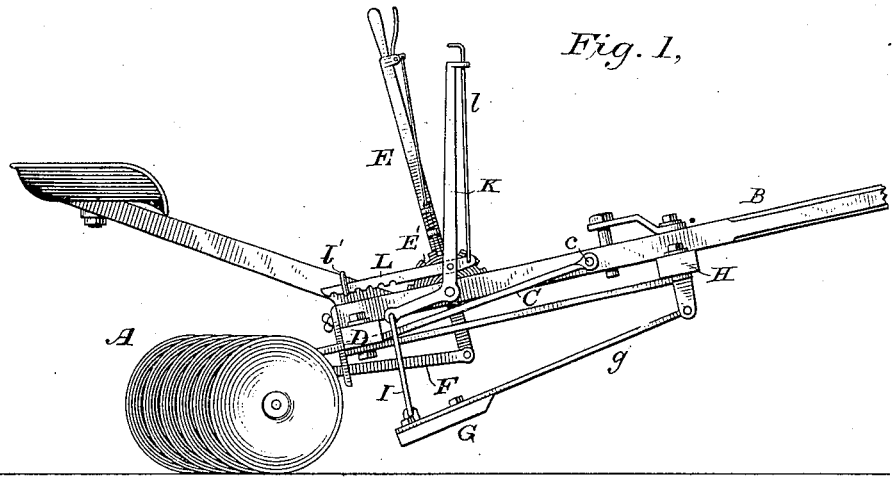
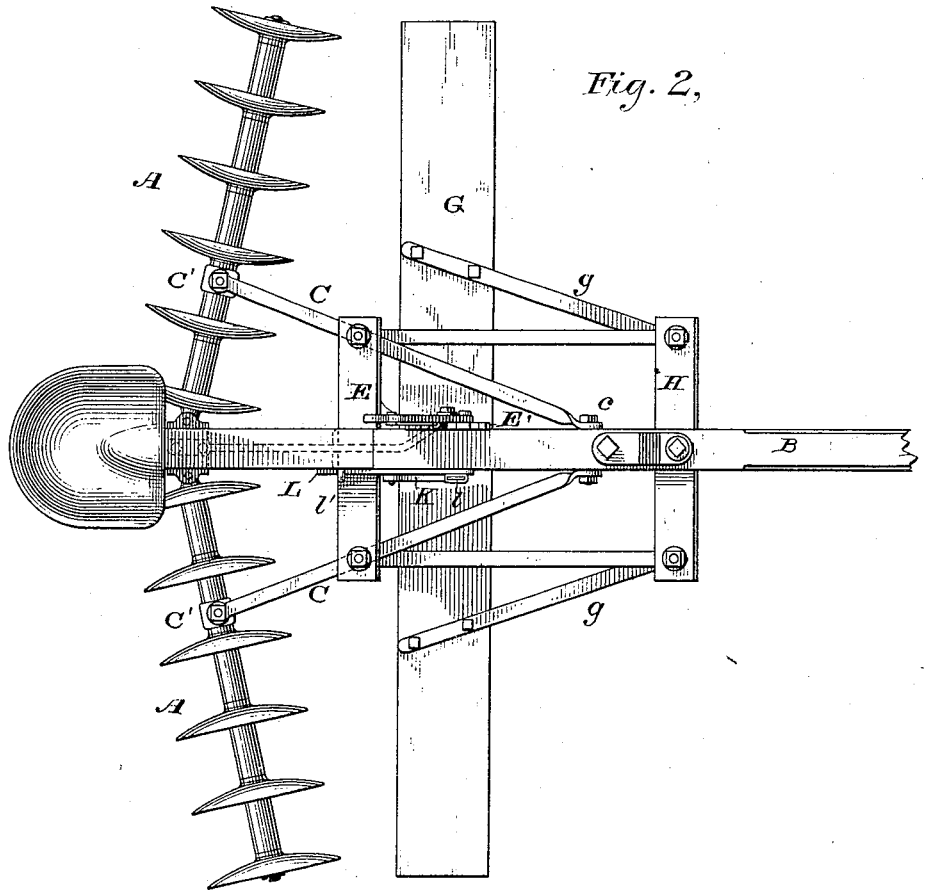


Fig. 2,



WITNESSES

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UNITED STATES PATENT OFFICE.

FREDERICK NISHWITZ, OF MILLINGTON, NEW JERSEY.

HARROW.

SPECIFICATION forming part of Letters Patent No. 263,565, dated August 29, 1882.

Application filed January 23, 1882. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK NISHWITZ, of Millington, in the county of Morris and State of New Jersey, have invented a new and useful Improvement in Harrows, of which the following is a specification.

My invention relates to that class of harrows in which one or more gangs or series of disks arranged transversely to the line of draft are employed to cut, turn, and break up the earth; and the invention consists in certain improved organizations in which a crusher-bar is used in such machines to crush clods, break down minor irregularities, and level the surface for the action of the cutting-disks, which improvements will hereinafter be specifically described.

In the accompanying drawings, Figure 1 is a side elevation of my improved organization, and Fig. 2 is a plan view.

I have illustrated a disk-harrow well known to the trade; but other forms of such machines may be used without departing from the spirit of my invention, and I do not therefore confine myself to any special construction of disk-harrow.

The disk-gangs A A are shown as flexibly or pivotally connected at their inner ends, any of the well-known forms of joint or coupling for this purpose being employed. The gang-shafts are also pivotally connected at a point, C′, intermediate their ends, with draft-bars or hounds C C, which are bolted to the tongue B at *c*, and also to the cross-piece D, which is secured to the tongue. As is understood, there should be sufficient play at the connections C′ and the joint at the inner ends of the gangs to permit the adjustment of the gangs relatively to the line of draft. This adjustment is accomplished by means of the lever E, pivoted on the tongue and provided with the usual spring-pawl, which engages with a rack, E′. An adjusting-rod, F, extends from the lower end of this lever to the boxing or coupling at the inner ends of the gang-shafts.

The operation is of course well understood. The inclined clod-crusher G is bolted to two draft-bars, *g g*, which are hinged in lugs on the under side of the cross-bar H, secured to the tongue B. At or about its middle the crusher is connected by a lifting-link, I, with the elbow-lever K, pivoted on the tongue, and by this means it may be raised and lowered, so as to cause it to bear more or less on the ground, according to the condition of the soil, or may be lifted up out of use when not required. Its forward edge is beveled off and its face inclined, as shown, relatively to the ground when at work. A pivoted notched locking-dog, L, operated by a thumb-rod, *l*, and engaging with a loop or eye, *l′*, on the seat-standard, holds the crusher in any desired position. The seat is mounted on the rear of the tongue or frame in convenient relation to both the adjusting-levers.

I am aware that a patent has heretofore been granted showing series of revolving cultivators arranged at an angle to the line of draft, preceded by a roller, the roller and rotary cultivators both being non-adjustably mounted on the same rigid frame.

I am also aware that in a patent heretofore granted a machine is shown in which a vertically-adjustable frame having inclined faces on its bottom is provided at its front and rear with series of cutting-disks. I therefore make no claim to such subject-matter; but

What I claim as my invention is—

1. The combination, substantially as set forth, of a gang or gangs of disk-cutters, a clod-crusher bar arranged in front of the disks, and mechanism for adjusting the crusher independently of and relatively to the disks.

2. The combination, substantially as set forth, of the disk-cutters, mechanism for adjusting them relatively to the soil, and the clod-crusher bar arranged in front of the disks.

3. The combination, substantially as set forth, of a tongue or frame, a gang or gangs of disk-cutters, a crusher arranged in front of the cutters, and mechanism for adjusting the crusher and cutters relatively to the soil.

In testimony whereof I have hereunto subscribed my name this 18th day of January, 1882.

FREDERICK NISHWITZ.

Witnesses:

JAMES R. RUNYON,

JAMES A. BAKER.