No. 823,240. PATENTED JUNE 12, 1906.

L. E. WATERMAN.

HARROW DISK.

APPLICATION FILED JAN. 4, 1906.

Fig. 1.

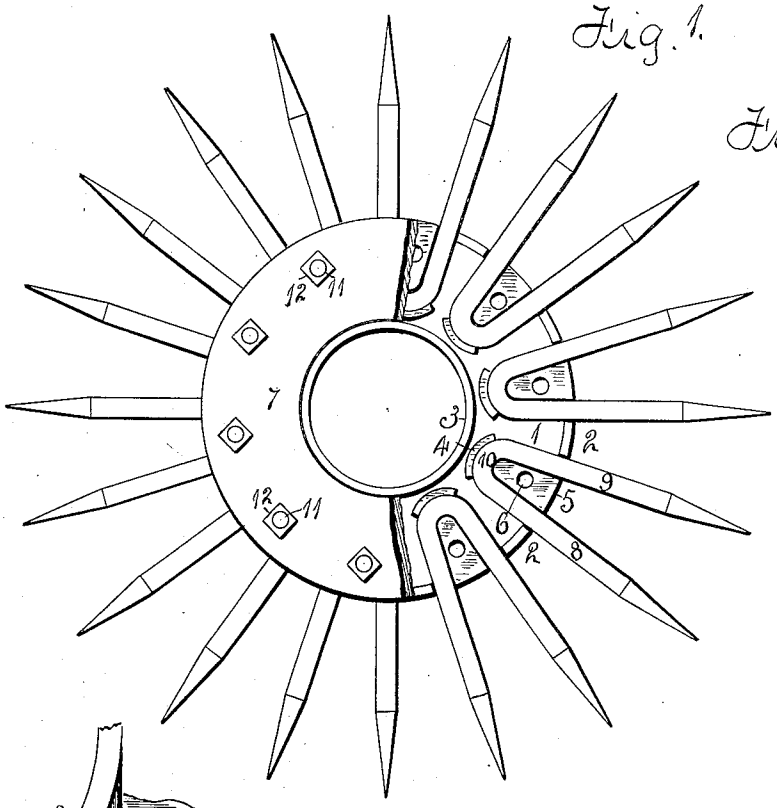
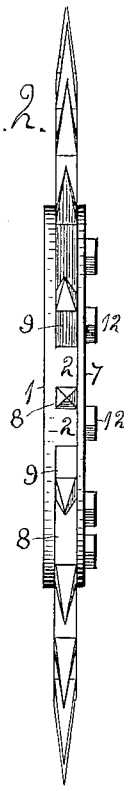


Fig. 2.



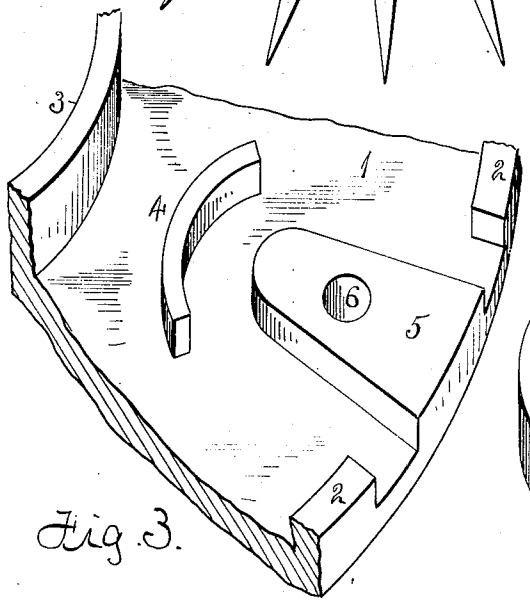
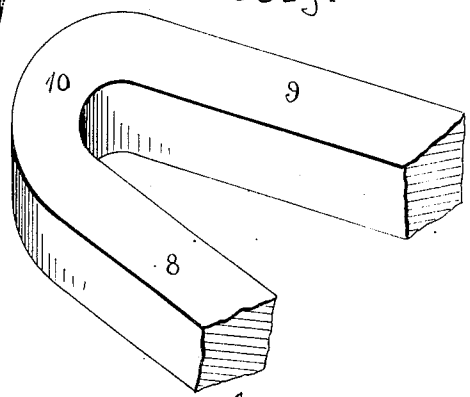


Fig. 3.

Fig. 4



Witnesses:
Jas. Hulme.
E. Bebel.

Inventor:
Lewis E. Waterman.
By A. O. Behel
Atty.

UNITED STATES PATENT OFFICE.

LEWIS E. WATERMAN, OF ROCKFORD, ILLINOIS, ASSIGNOR TO EMERSON MANUFACTURING COMPANY, OF ROCKFORD, ILLINOIS, A CORPORATION OF ILLINOIS.

HARROW-DISK.

No. 823,240. Specification of Letters Patent. Patented June 12, 1906.

Application filed January 4, 1906. Serial No. 294,641.

To all whom it may concern:

Be it known that I, LEWIS E. WATERMAN, a citizen of the United States, residing at Rockford, in the county of Winnebago and State of Illinois, have invented certain new and useful Improvements in Harrow-Disks, of which the following is a specification.

The object of this invention is to hold the teeth of a disk for harrows used in the treatment of alfalfa in connection with their support by the fewest pieces possible.

In the accompanying drawings, Figure 1 is a face view of a disk, partly in section. Fig. 2 is an edge view of the disk. Fig. 3 is an isometrical representation of a section of the support for the teeth. Fig. 4 is an isometrical representation of a section of one of the double teeth.

The main section of the teeth-support has a web portion 1, provided with an edging in sections 2, and a central hub portion 3. One face of the web portion 1 has a series of curved projections 4 rising from it, also a series of V-shaped projections 5, through each of which is found an opening 6.

A cap 7 is in circular form, having a central opening of a size to receive the hub portion of the main section of the teeth-support.

The teeth are formed in pairs—that is, double—and comprise the two branches 8 and 9, diverging from the point of their union. The free ends of the branches are sharpened, and the branches are rectangular in cross-section.

One of the double-toothed sections is so located in connection with the main section of the teeth-support that the end 10 thereof rests against the curved projection 4, the branches closing around the V-shaped projection 5 and against the ends of the sections 2 of the edging. The remaining double-toothed sections are located in the same manner in connection with the main section. The cap 7 is then placed over the teeth and rests in contact therewith. Bolts 11 are passed through the holes 6 in the V-shaped projections 5 and through the cap and receive nuts 12 on their projecting ends, thereby clamping the parts together. By this construction only one bolt is required for two teeth, and the teeth are held from movement in all directions.

It is to be understood that a series of complete disks are mounted in a frame which is provided with the usual draft devices.

I claim as my invention—

A harrow-disk comprising a plate having curved projections, V-shaped projections, and a segmental flange, a series of double teeth held in position by the projections and flange, and a cap located over the teeth and secured in place.

LEWIS E. WATERMAN.

Witnesses:
A. O. BEHEL
E. BEHEL.