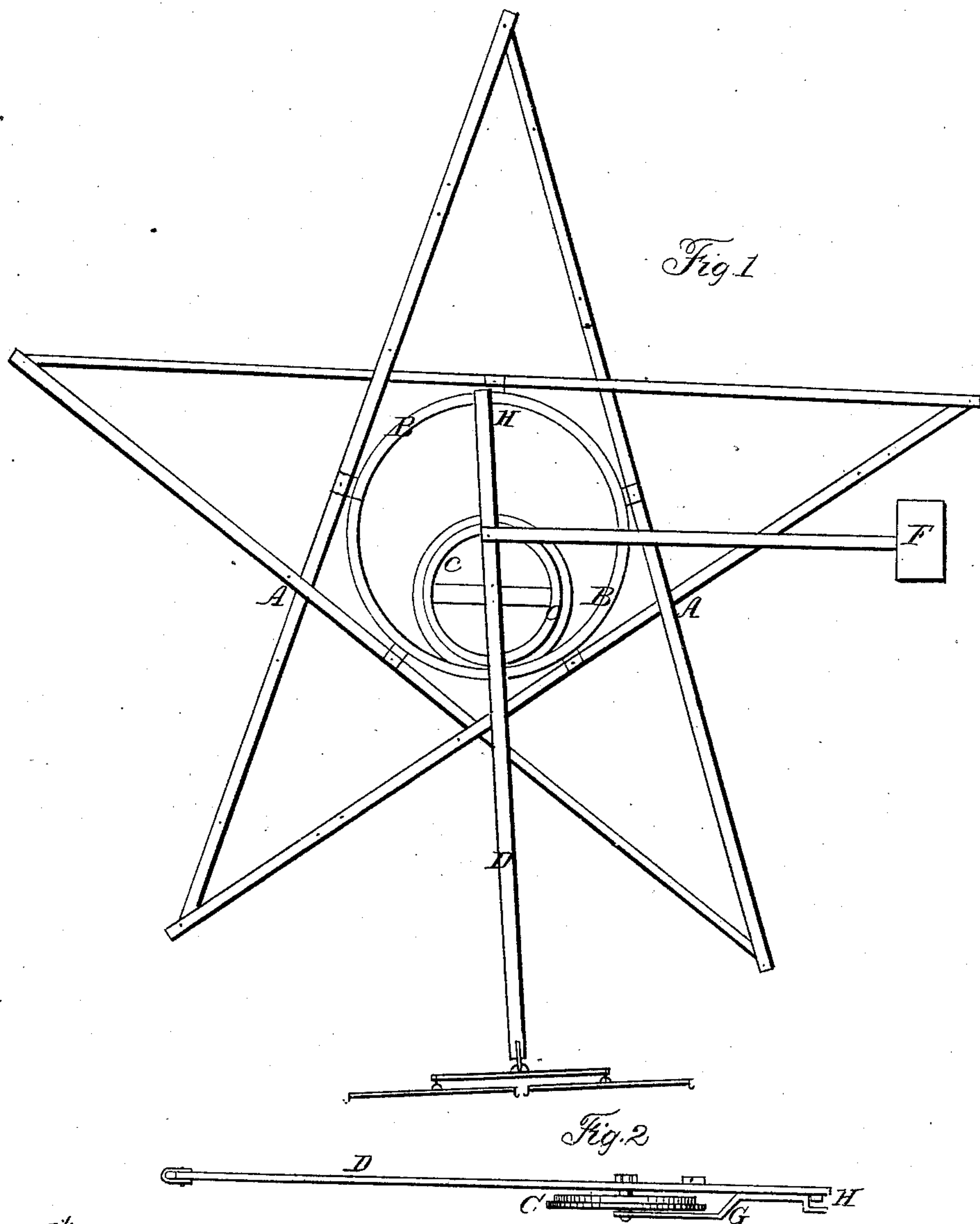


F. GRANGER.
Revolving Harrow.

No. 56,405.

Patented July 17, 1866.



Witnesses;
Cheever
A. S. Granger.

Inventor;
Francis Granger

UNITED STATES PATENT OFFICE.

FRANCIS GRANGER, OF LOCKPORT, ILLINOIS.

IMPROVEMENT IN HARROWS.

Specification forming part of Letters Patent No. **56,405**, dated July 17, 1866.

To all whom it may concern:

Be it known that I, FRANCIS GRANGER, of Lockport, in the county of Will and State of Illinois, have invented a new and useful Improvement on Harrows; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a top view of my invention. Fig. 2 is a side view of the draft-arm.

A represents the frame of the harrow, made of five pieces of timber, in the shape of a star with five points.

B represents an iron ring with five flanges, to be fastened to the frame A at the center of each timber.

C represents the pulley, with a flange on the under edge, to run under the ring B, while the edge of the pulley runs against the edge of the ring B. This pulley is fastened to the arm D with a pin, on which it turns easily.

E represents the weight for pressing the teeth on one side of the harrow deeper into the earth, thus causing the harrow to revolve.

I shows a friction-roller under the weight-arm, which runs on the ring B as the harrow revolves.

G, Fig. 2, shows a strap of iron bolted to the draft-arm D, one end of which runs under the ring B and the other end fastened to the pin which passes through the center of the pulley C. This strap, with the flange on the pulley, prevents the pulley from getting out of place.

H represents a friction-roller or an iron to run on the top of the ring B. This roller or iron is fastened to the back end of the draft-arm D, thus making a light revolving harrow, well braced.

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

The form of the harrow, also a draft-pulley running inside a circle in such a manner as to leave the harrow in a position to revolve freely.

FRANCIS GRANGER.

Witnesses:

CHAS. KERCHEVAL,
A. L. GRANGER.