J. ROBINS.

Rotary Harrow.

No. 21,577. Patented Sept. 21, 1858.

Fig. 1.

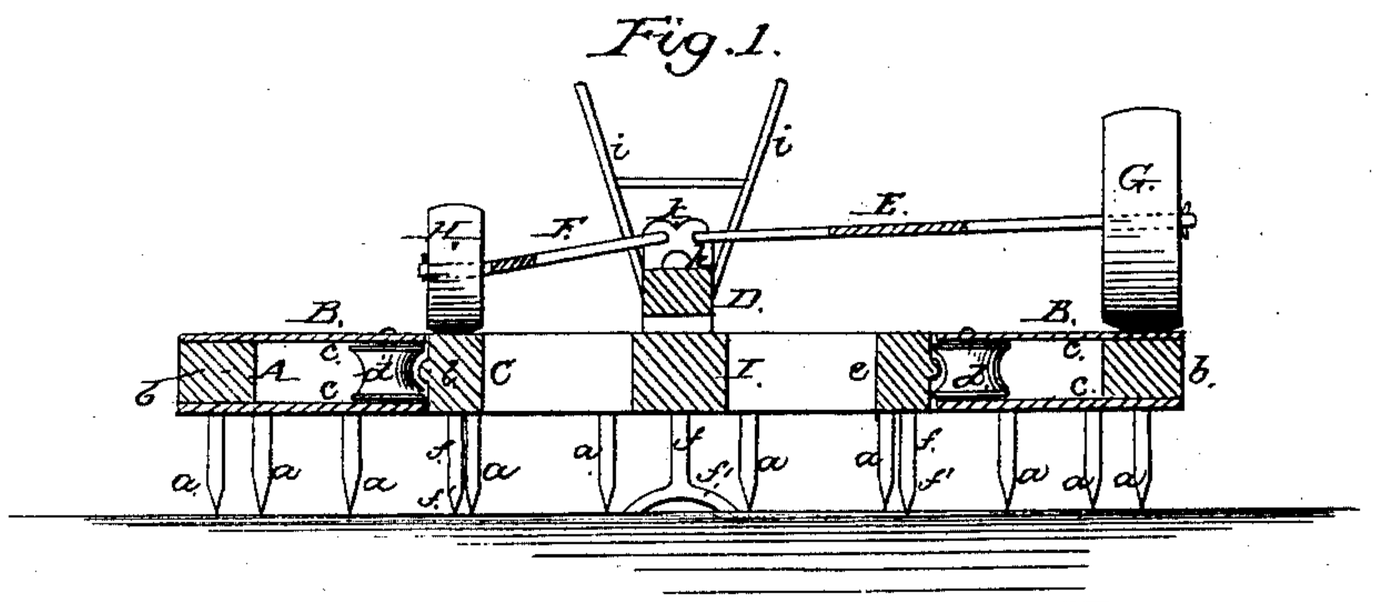

Fig. 2.

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JABEZ ROBINS, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN ROTARY HARROWS.

Specification forming part of Letters Patent No. 21,577, dated September 21, 1858.

To all whom it may concern:

Be it known that I, JABEZ ROBINS, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and Improved Rotary Harrow; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a vertical section of my invention, taken in the line *x x*, Fig. 2. Fig. 2 is a plan or top view of the same.

Similar letters of reference indicate corresponding parts in the two figures.

This invention consists in the employment or use of two annular rotating harrows placed one within the other, connected in a peculiar way, and provided with weights and a draft-beam, the whole being arranged as hereinafter fully shown and described, whereby a very simple and efficient implement is obtained.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A represents a circular or annular harrow, which is formed by inserting the usual teeth, *a*, in an annular wooden stock, *b*, of proper dimensions. This annular stock has four roller-frames, B, attached radially to it, and projecting inwardly at equal distances apart. These frames B are each formed of two metal plates, *c c*, attached one to the upper and the other to the lower side of the stock, and between the ends of said plates rollers *d* are fitted, said rollers having concave peripheries, as shown clearly in Fig. 1. The rollers *d* are allowed to turn freely in their frames B.

C is a smaller circular or annular harrow, the rim *e* of which has teeth *f* inserted in it. These teeth have their lower ends forked, as shown clearly at *f'*, Fig. 1. The rim *e* has two cross-arms, *g*, fitted in it, and a bolt, *h*, passes through the center of the arms and through a draft-beam, D, said bolt securing the beam to the harrow C. Handles *i i* are attached to one end of the beam D, and a draft hook or bow, *j*, is attached to the opposite end. The beam D is allowed to turn freely on the bolt *h*. To the beam D two frames, E F, are attached, the inner ends of the frames being of bow form and fitted loosely in eyes *k*, attached to the beam D. The frame E extends as far as the stock of the harrow A, and has a roller, G, attached to it, said roller serving as a weight and resting on the stock *b*. The frame F extends as far as the rim *e* of the harrow C, and has a roller, H, attached, which is smaller than G, but which also serves as a weight, and rests on the rim *e*.

To the periphery of the rim *e* a bead, *l*, is attached, and this bead fits in the concaves of the rollers *d*. The bead *l* retains the smaller harrow C in proper position, or connects it with the larger harrow A. The two harrows A C thus connected are allowed to rotate independently of each other.

The operation is as follows: As the machine is drawn along, the two harrows A C rotate in consequence of the rollers or weights G H resting on them, and as these rollers or weights rest one on the right and the other on the left side of its harrow, the loaded sides will be depressed and cause the harrows to rotate in reverse directions, and as the depressed teeth perform the chief portion of the work it follows as a matter of course that the work will be done more efficiently than if the weights were on corresponding sides of the harrow and both harrows rotated in the same direction.

The implement is turned or adjusted to move in different directions simply by the rotation of the draft-beam D, and the device is readily managed or manipulated.

I am aware that loaded frames or weights have been previously used and applied to rotating harrows, and I therefore do not claim broadly such device; but,

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

The two harrows A C, placed one within the other and connected by the concave rollers *d* and bead *l*, in connection with the draft-beam D and frames E F, provided with the rollers or weights G H, the whole being arranged substantially as and for the purpose set forth.

JABEZ ROBINS.

Witnesses:

ALEXANDER BLAIKIF,

ALFRED W. HEARN.