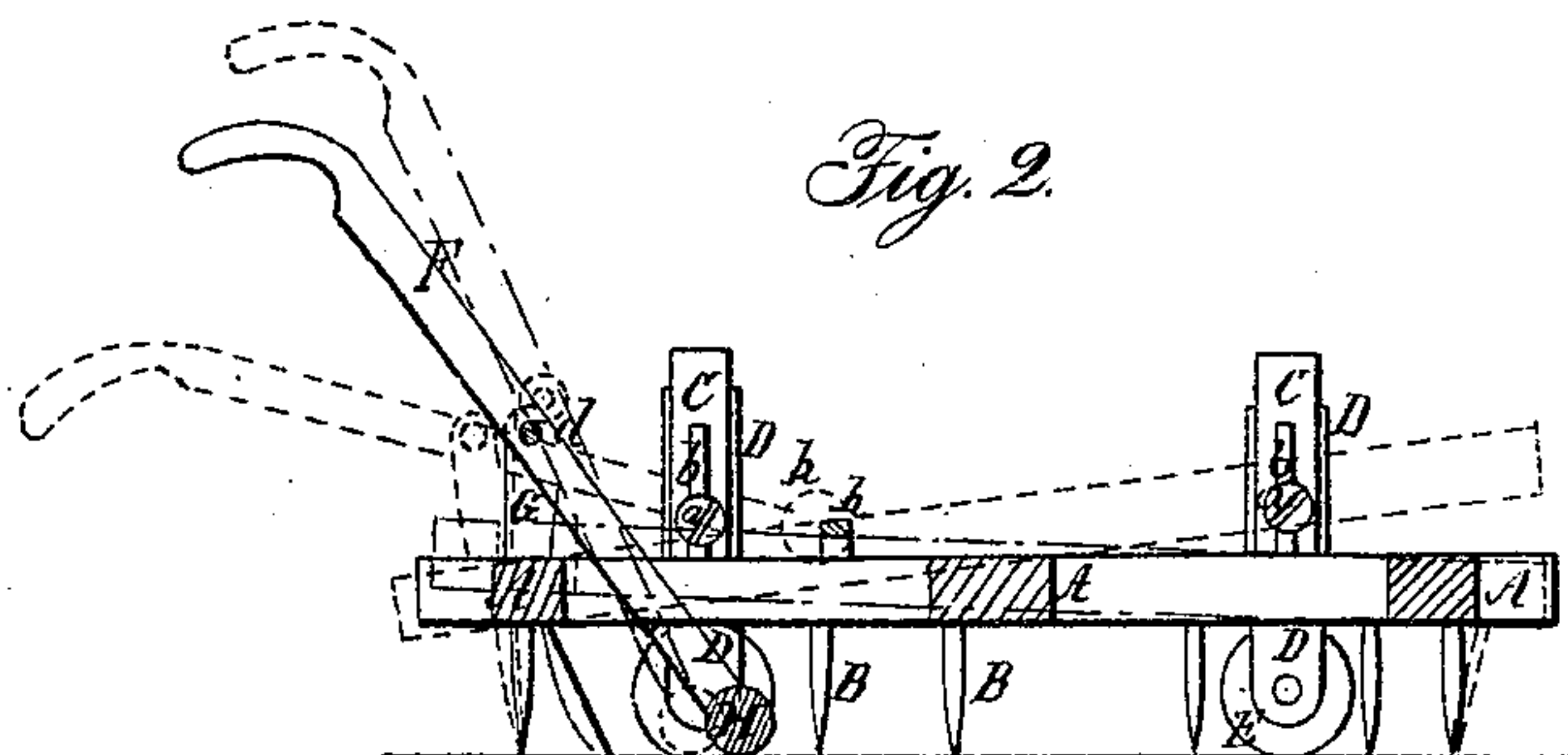
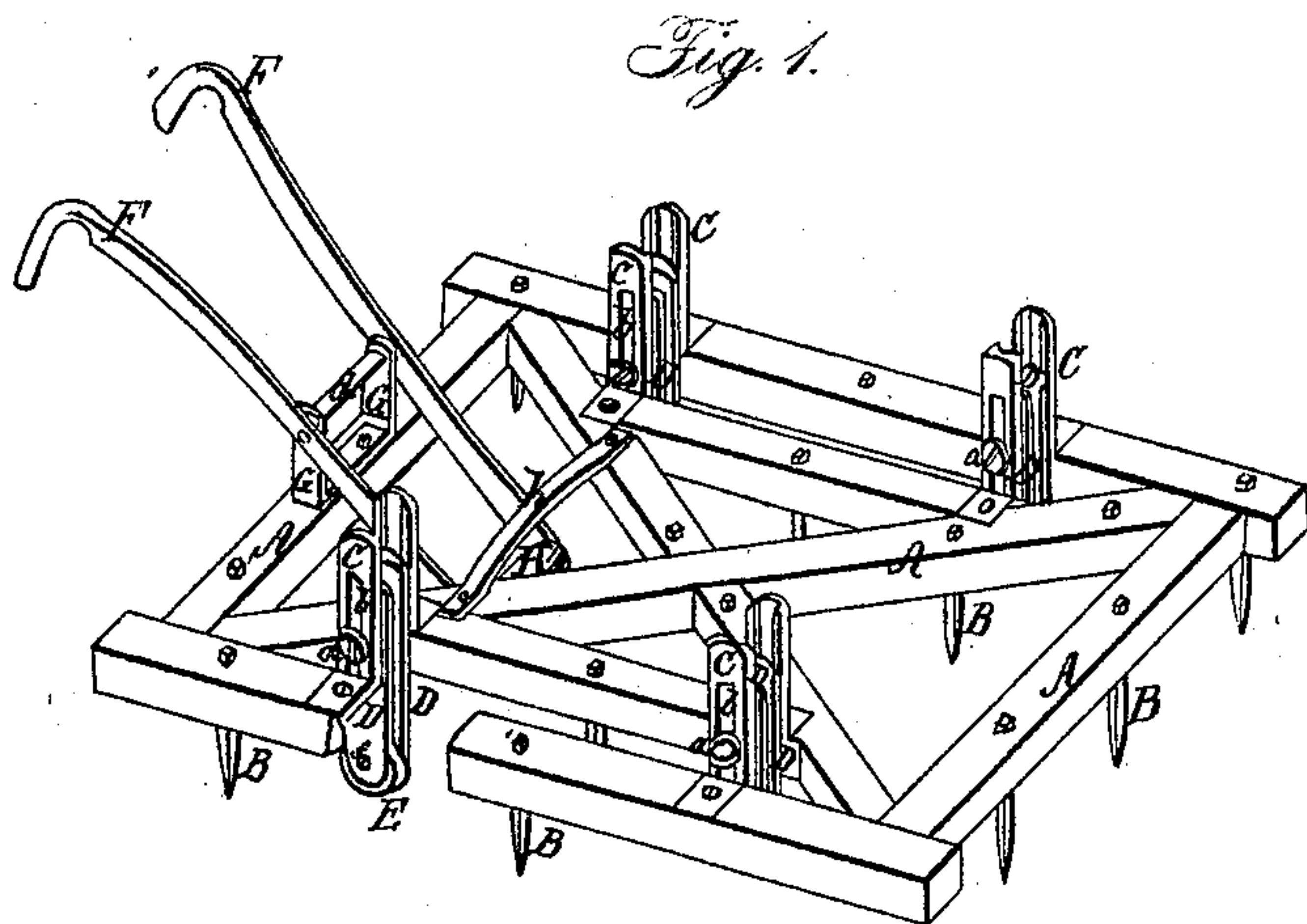


J. TEMPLE.

Harrow.

No. 30,789.

Patented Nov. 27, 1860.



Witnesses:

*C. Cohen*  
*J. Hirsch*

Inventor:

*James Temple*  
*By atty A Broughton*

# UNITED STATES PATENT OFFICE.

JAMES TEMPLE, OF BELLEFONTE, ASSIGNOR TO JOSEPH KEYSER, OF  
PHILADELPHIA, PENNSYLVANIA.

## IMPROVEMENT IN HARROWS.

Specification forming part of Letters Patent No. 30,789, dated November 27, 1860.

*To all whom it may concern:*

Be it known that I, JAMES TEMPLE, of Bellefonte, in the county of Centre and State of Pennsylvania, have invented certain new and useful Improvements in 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 accompanying drawings, in which—

Figure 1 represents a perspective view of said harrow. Fig. 2 represents a longitudinal vertical section through the same.

My invention relates to the combination, with a harrow, of adjustable supporting wheels or rollers and a hinged lever, by means of which the harrow-teeth may be set to run at a greater or less depth, and either end of said harrow can be raised or lowered to pass over any obstruction.

To enable those skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A represents the frame of the harrow, and B represents the teeth.

The grooved standards C are secured to the frame A, and the plates D are provided with suitable tongues, which fit into the grooves of the standards C, and by which the position of the plates D can be adjusted so as to raise or lower the harrow-frame on the wheels.

The frame is secured in any desired position by means of the set-screws *a*, which pass through the slots *b* of the standards C and into the plates D.

The axles *c* of the supporting wheels or rollers E have their bearings in the plates D, and they can be raised or lowered by adjusting the position of said plates. The rollers E serve

the purpose of preventing the harrow-teeth from entering the soil beyond a certain depth, and this depth is regulated by adjusting the position of the supporting-rollers.

F F represent two levers, which also serve as handles, and which are pivoted at *d* to the bracket G on the rear end of the harrow. The roller H is secured to the lower end of the levers F, and runs on the ground under certain circumstances when the harrow is drawn over the field. When the rear end of the harrow is to be raised the handles or levers F are raised, as represented in red lines in Fig. 2, when the roller H is pressed on the ground and rolls thereon while the rear end is raised. To raise the front end of the harrow the levers F are depressed, and the roller H is consequently raised, and, coming in contact with and pressing against the lower side of the cross-bar *h*, it raises the front end of the harrow, as represented by black dotted lines in Fig. 2. The levers or handles F also answer the purpose of guiding or steering the harrow while it is drawn over the field.

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

In combination with the adjustable supporting wheels or rollers E, the hinged levers F F for adjusting the height of the harrow-teeth and raising and lowering either end of the harrow to pass obstructions, substantially in the manner and for the purpose herein described.

JAMES TEMPLE.

Witnesses:

JAS. H. RANKIN,  
WM. I. SMITH.