

(No Model.)

W. P. KIRKLAND.  
HARROW ATTACHMENT.

No. 284,307.

Patented Sept. 4, 1883.

FIG. 1.

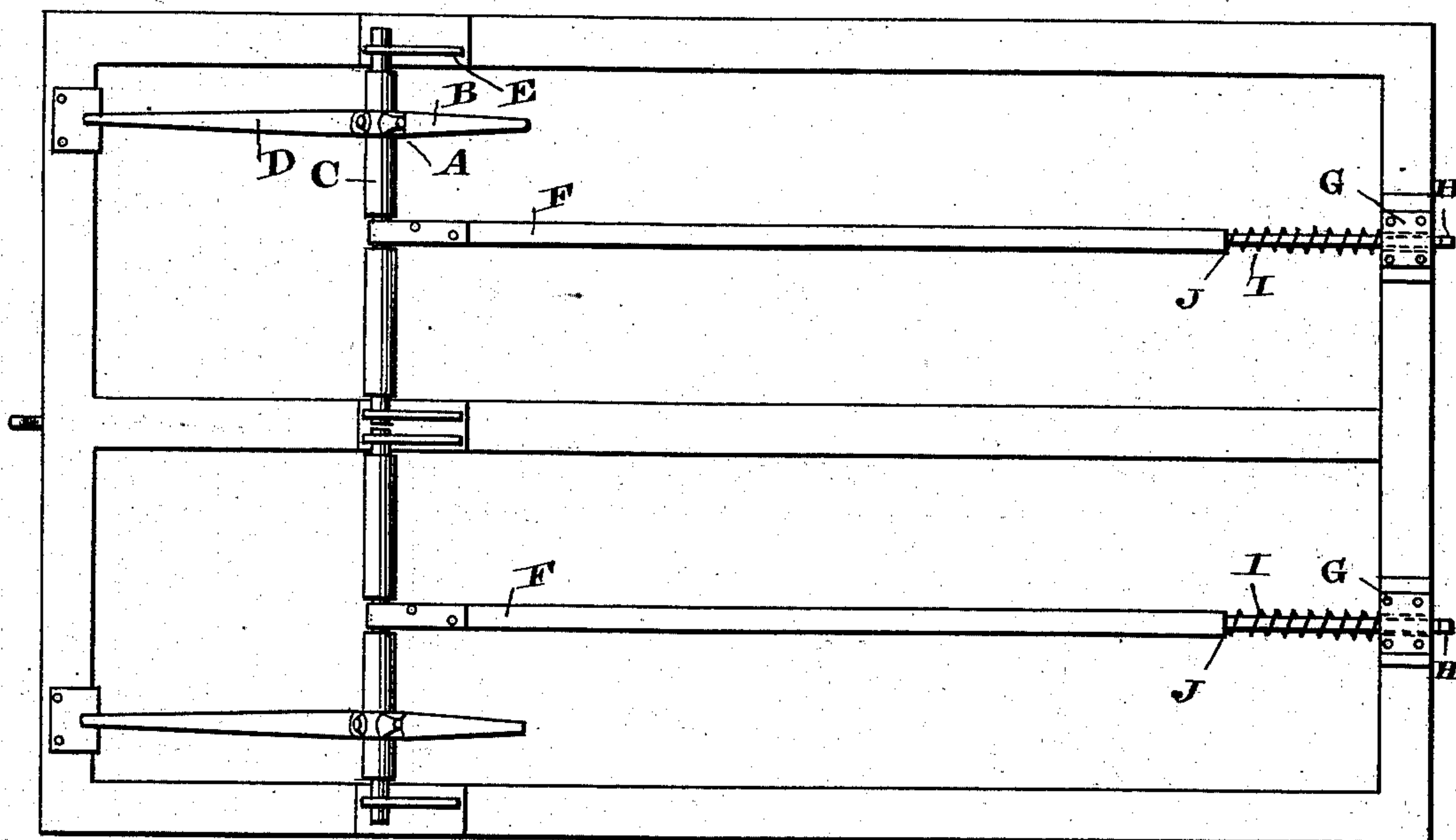
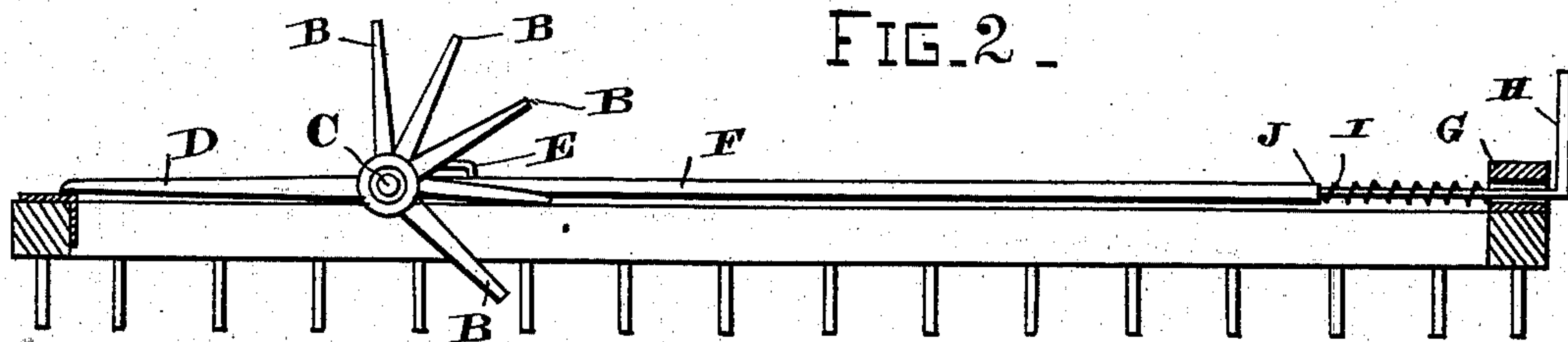


FIG. 2.



WITNESSES.

*Wilbur Bradford*  
*Edwin Derry*

INVENTOR.

*William P. Kirkland*  
*By C. W. M. Smith.*



# UNITED STATES PATENT OFFICE.

WILLIAM P. KIRKLAND, OF SAN FRANCISCO, CALIFORNIA.

## HARROW ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 284,307, dated September 4, 1883.

Application filed November 27, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM P. KIRKLAND, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented a new and useful Harrow Attachment to Free the Teeth when Clogged or Fouled, of which the following is a specification.

In the harrowing of lands the harrow frequently becomes foul or clogged by the accumulation of gathered-up weeds, brush, straw, &c., which neutralizes in a great degree the effect of the teeth upon the soil and requires a frequent lifting up of the harrow-frame, so that the rubbish may be discharged; hence the object of my invention is to provide a means whereby the harrow is lifted up in an automatic manner and frees itself of such accumulations. I accomplish this object by the means illustrated in the accompanying drawings, in which—

Figure 1 is a top view of a harrow embodying my improvements, and Fig. 2 is a sectional side view.

Similar letters of reference are used to indicate like parts throughout the several views.

The harrow-frame is provided with a segmental wheel or sector, A, one or more, that may be placed one on each side, as shown in the drawings; or such sectors may be placed within each division of the harrow-frame at a convenient distance from the drawing end. The sector is composed of suitable teeth or arms, B B, and is mounted upon an axle, C, having its bearings or journals upon the harrow-frame. From the sector extends an operating or tripping arm, D, which arm, when disengaged, rests upon the end piece of the harrow-frame. The boxings E of the axle are elongated, so that the toothed segment and axle may be drawn backward and permit the arm D to fall down and engage with the ground or earth; and to accomplish this object a draw-bar, F, is connected to the center of the axle and extends back to the rear end of the harrow-frame, passing through a boxing, G, and terminating in a crank-arm, H. A spiral spring, I, is placed around a journal formed on the end of the draw-bar, which has its bearings against the collar J and boxing G, so that when the operating-bar is drawn backward the spring will be compressed between

these two points, and when the hand of the operator releases the crank-arm the spring will expand and carry the draw-bar forward.

In practice the sliding bar F is drawn backward by the crank or handle, carrying with it the segmental toothed wheel, the axle of which moves back in the elongated journals, which permits the end of the arm D to fall to the ground, causing the harrow-frame to be elevated sufficiently to allow the accumulated rubbish to pass from under the harrow, or rather permitting the harrow to pass over it and clear itself of any obstructions which may interfere with the proper action of the teeth, and at the same time the segmented wheel will perform an entire revolution, and the end of the arm assume its former position upon the frame, the reaction of the coiled spring carrying back the axle against the opposite ends of the elongated boxes, while the teeth of the segment will enter the ground to assist in the revolution and keep the harrow away from the ground until the obstruction is passed.

The spring for disengaging the arm and returning it to its resting-place upon the harrow-frame may be either spiral or elliptical. The last or elliptical is preferred.

The attachment may be applied to almost any kind of harrow upon one or both sides thereof, and a pair of old light wagon-wheels may be reduced in size and used for the segmental wheels.

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

In combination with the toothed sector, provided with an outwardly-extended arm adapted to rest upon the harrow-frame, the elongated axle-bearings, and the spring-provided draw-bar connected to the axle of the toothed sector, so that by operating the spring draw-bar the end of the arm will fall to the ground and be returned to its resting-place, substantially in the manner and for the purpose herein set forth and specified.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 15th day of November, 1882.

WILLIAM P. KIRKLAND. [L. s.]

Witnesses:

C. W. M. SMITH,  
CHAS. E. KELLY.