

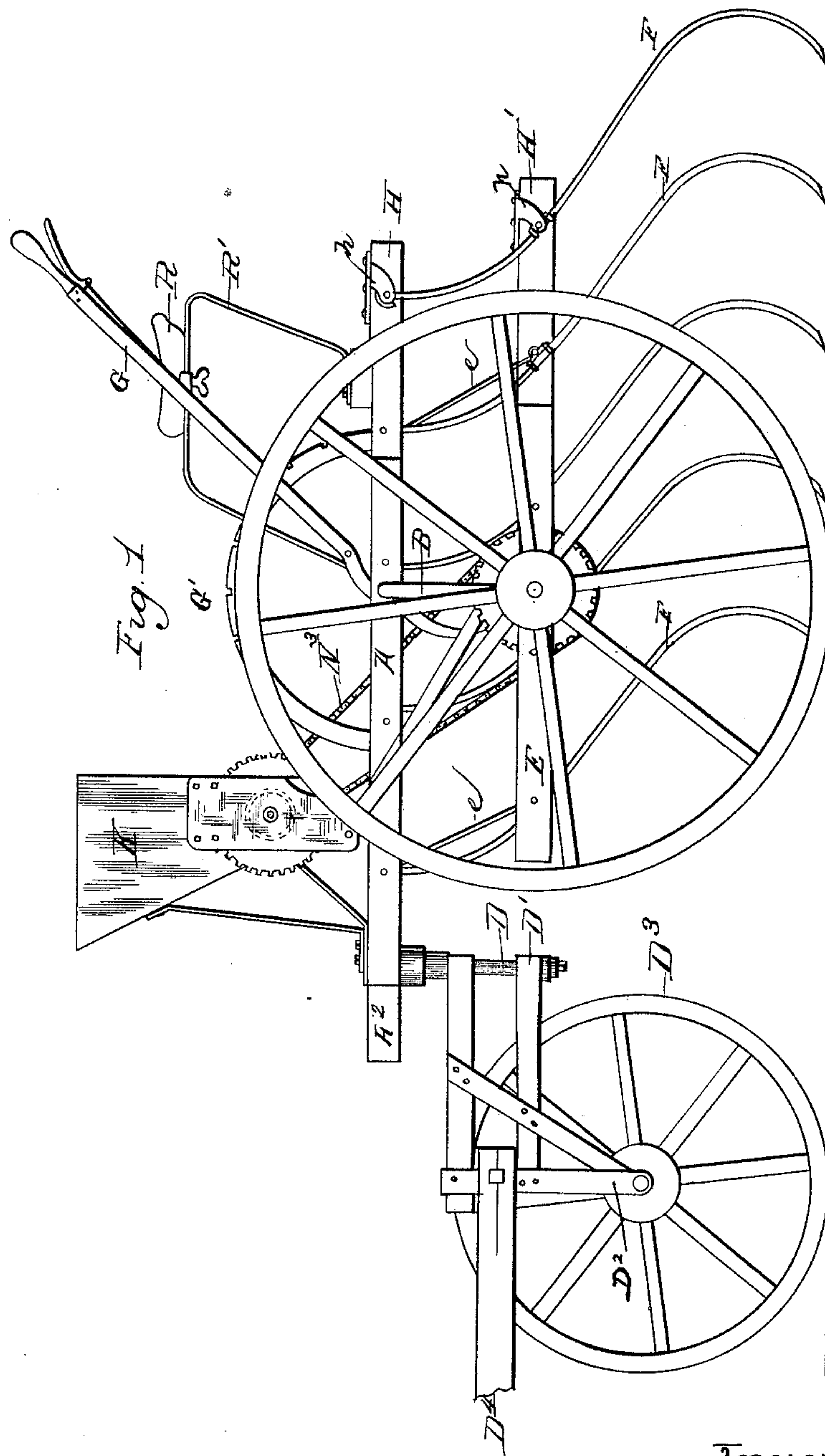
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3 Sheets—Sheet 1.

J. B. COON.
COMBINED SEEDER AND HARROW.

No. 406,881.

Patented July 16, 1889.



Witnesses
Fred. W. Cornwall
L. S. Bacon

Inventor
John B. Coon
By Joseph H. Hunter
his atty.

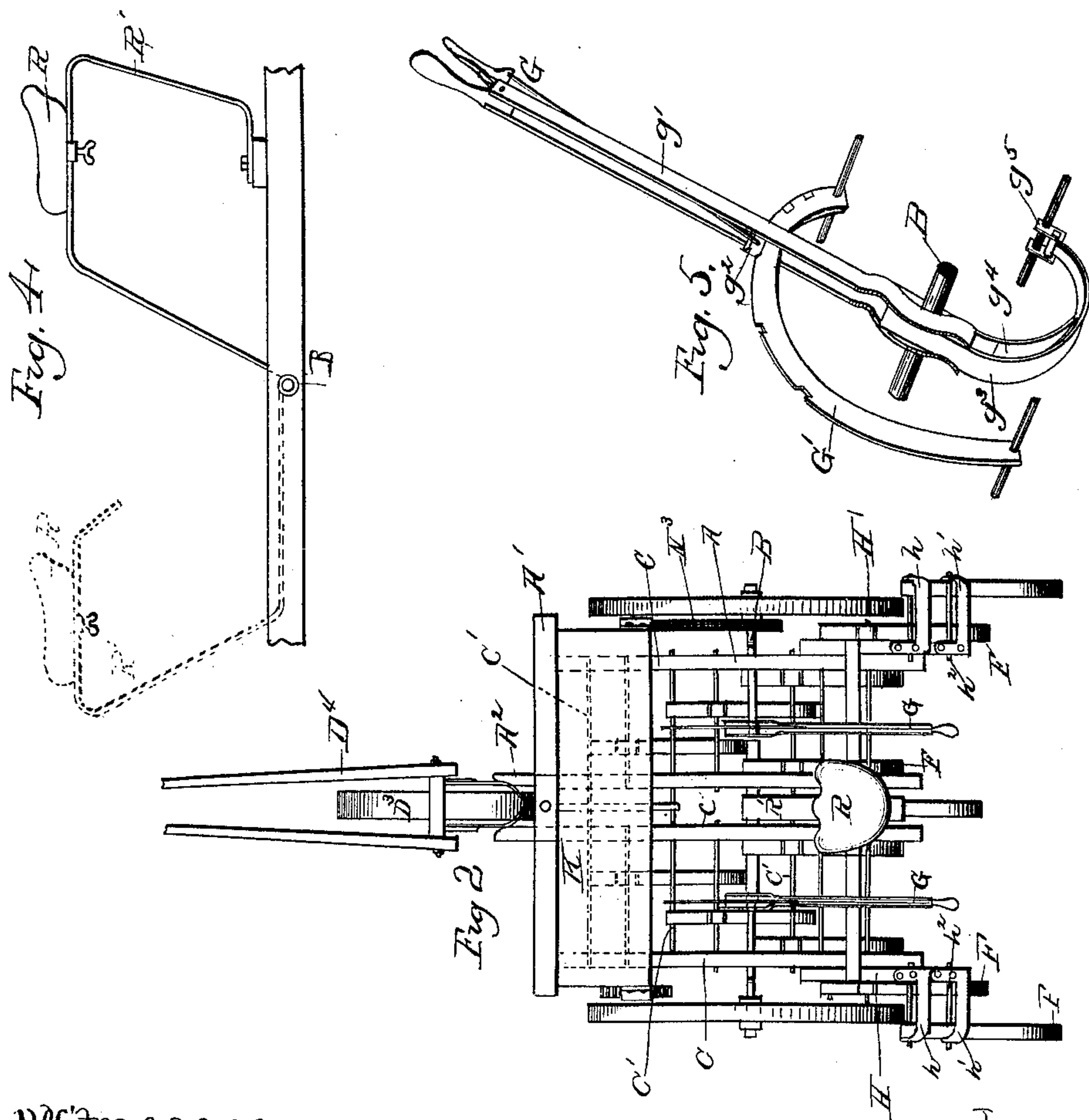
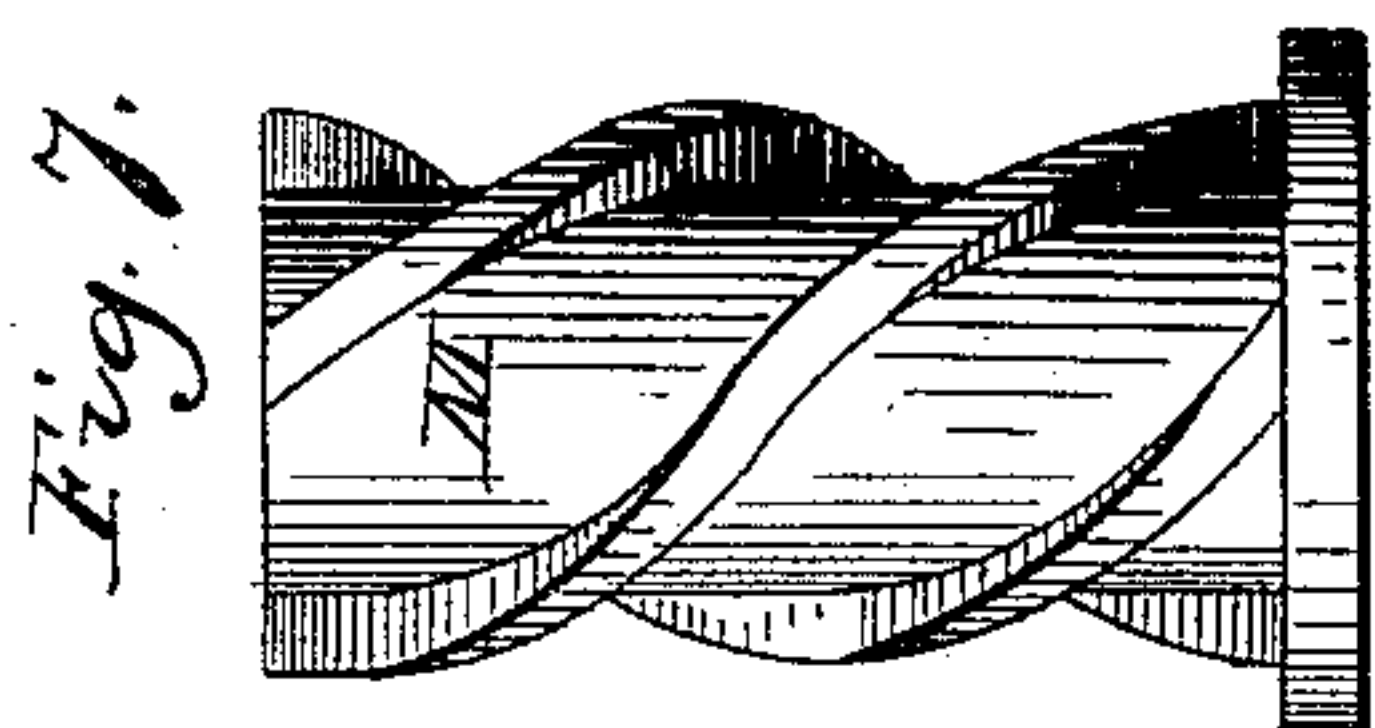
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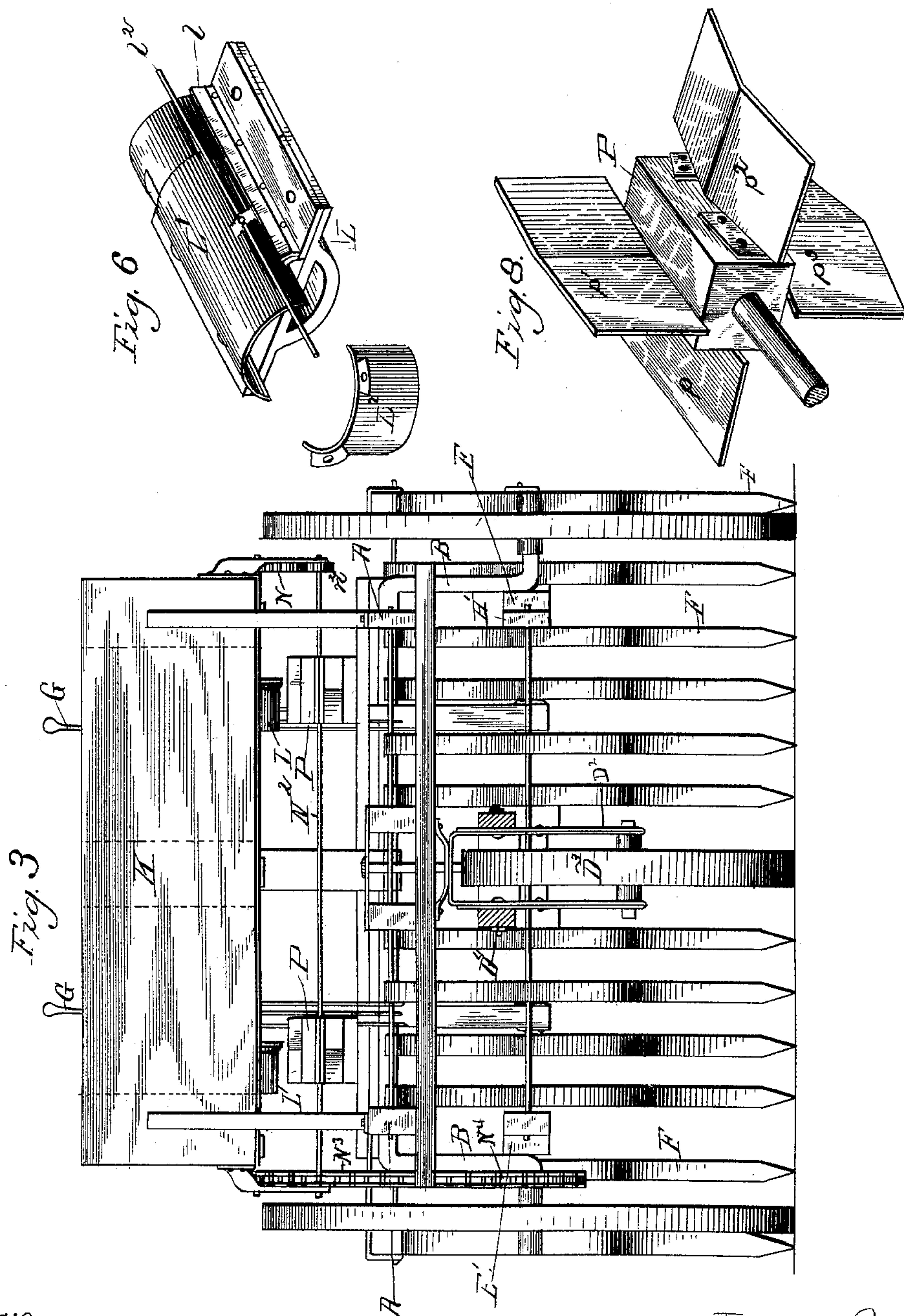
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His Atty.

UNITED STATES PATENT OFFICE.

JOHN BURRFELLOWS COON, OF COLD SPRING, PHELPS COUNTY, MISSOURI.

COMBINED SEEDER AND HARROW.

SPECIFICATION forming part of Letters Patent No. 406,881, dated July 16, 1889.

Application filed December 12, 1887. Serial No. 257,732. (No model.)

To all whom it may concern:

Be it known that I, JOHN BURRFELLOWS COON, a citizen of the United States, residing in Cold Spring township, in the county of Phelps and State of Missouri, have invented certain new and useful Improvements in Combined Seeder and Harrow, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to an improvement in combined harrow and seeder; and it consists in the peculiar construction and arrangement of the parts thereof hereinafter described and claimed.

The object of my invention is to provide a machine adapted to be used as a seeder or harrow, with parts so arranged that an adjustment may be made of the same in a quick and easy manner.

A further object of my invention is to so construct a combined seeder and harrow that by the detachment of certain parts it may be transformed into a separate harrow.

I attain these objects by the construction illustrated in the accompanying drawings, wherein like letters of reference indicate corresponding parts in the several views, and in which—

Figure 1 is a side elevation of a combined machine. Fig. 2 is a top plan view. Fig. 3 is a front view. Fig. 4 is a view of the seat-support. Fig. 5 is a detail of the operating-lever. Fig. 6 is a view of the seed-cup. Fig. 7 is a view of the screw feeding-shaft. Fig. 8 is a view of the seed-distributor.

In the drawings, A represents the upper or main frame supported on an arched axle B, on the ends of which the wheels are placed. The frame consists of four parallel side bars C, united at their ends by cross-bars, the axle, and cross-rods C'.

To the front of the main frame A, on its under side, is secured a depending post D, having a shoulder on its upper end. To this post is pivotally and detachably secured a frame consisting of two substantially U-shaped yokes D', united at their outer ends by vertical supports D², extending below the same, and in which a wheel D³ is mounted. To the outer sides of this yoke is attached the tongue D⁴ of the machine.

E E' represent frames located on each side of the machine below the main frame A, to which they are secured by hinge-rods e, the frames being arranged to form a space between at the center. To these frames E E' are attached the spring harrow-teeth F, which are formed of yielding material and substantially S shape, their upper ends extending above the lower frames and being pivotally secured on cross-rods on the upper frame A. These lower frames are arranged below the axle, and by their peculiar connection with the upper frame are allowed a swinging movement, so that the teeth may be raised or lowered as occasion demands. To operate these frames back and forth, I employ spring-levers G, which are fulcrumed on the axle and have their lower ends curved back and made fast to cross-bars at or near the center of the lower frames. These levers are formed of two parallel hand-bars g', between which the pawl g² is actuated to engage the teeth on the rack-bars G'. The ends of bars g' are secured to a block, through which the axle passes. To the lower end of the block, on its upper and lower sides, are secured curved springs g³ g⁴, which are united at their outer end. A clip g⁵ is connected with the outer end, which unites it with the cross-rod.

On the outer face of the rear ends of the side bars of the frames E E' and A are secured rearwardly-extending bars H H', the latter extending beyond the former. They have curved metallic arms h h', as shown in Fig. 2, secured thereto and extending out laterally beyond the wheels, and have rods h² fixed thereon, to which are secured teeth arranged to operate just outside and inside the respective wheels, the upper end of the inner teeth being secured to a projecting end of a cross-rod of the upper frame.

On the forward end of the frame A is mounted the seed-box K, having cups L, which are formed with apertures in their upper face to receive the seed, the size of the aperture being regulated by adjustable covers L', working in flanges l. A rod l² connects the several covers, so as to operate them simultaneously.

One end of the cups L is open to allow the seed to pass out. It has a guard l² to con-

duct the seed in a direct line downward. In the cups are placed the screw feed-cylinders M, which are operated by a shaft having gear N on its end, which meshes with pinion n^2 on the end of shaft N^2 , driven by an endless chain, as N^3 , which passes over a sprocket-wheel on the end of shaft N^2 and a wheel N^4 on the axle operated by one of the supporting-wheels.

10 On the shaft N^2 , directly below the discharge ends of the cups, are secured seed-distributers P, as shown in Fig. 8, consisting of a rectangular block having plates or deflectors p, p', p^2 , and p^3 thereon on the respective
15 sides. The deflectors are formed in a manner to equally distribute the seed, the first plate p being flat, the succeeding ones being inclined, the incline of the same increasing in each successive plate, so that the seed will
20 be thrown farther to the side as it strikes the respective plates or deflectors, the first dropping it directly down, the second, third, and fourth scattering it to one side more or less, according to the inclination of their sides.

25 When it is desired to use the machine as a harrow separately, it is only necessary to detach the seed-box and the front wheel-supporting frame and secure the shaft on the projecting ends A^2 of the inner side bars of
30 frame A. The seat R is then moved back on the end of the seat-supporting rod R' , and the latter, being pivoted on the axle, is turned forward, as shown in dotted lines in Fig. 4, thereby throwing the weight of the
35 driver forward and more easily balancing the mechanism.

I am aware that many changes and alterations of the several parts of my machine can be made, which I do not hereby specify,
40 without in the least departing from the nature and principle of my invention.

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

1. In a combined seeder and harrow, the 45 combination, with the upper frame, of the two lower frames hinged to the upper frame, the spring-teeth pivoted to the upper frame and secured to the lower frames, the arched axle, and the levers fulcrumed on the axle and 50 connected with the lower frames, substantially as described.

2. The combination, with the upper frame, of the two lower frames, the hinges connecting the same, the spring-teeth pivotally secured to the upper and secured to the lower 55 frames, the bars H H', the lateral arms on the bars, and the teeth on the arms, substantially as described.

3. The combination, with the upper and 60 lower frames, of the downwardly-extending post D on the upper, the detachable wheel-supporting frame on the post, composed of two substantially U-shaped yokes united at their ends by vertical supports, in which the 65 wheel is mounted, and the tongue secured to the said wheel-supporting frame.

4. The combination, with the upper and lower frames and teeth, of the feed-box, the cups on the box, the shafts and gearing for 70 operating the feed, and the distributers below the cups, composed of revolving rectangular blocks having deflectors of varying incline thereon, substantially as described.

5. The combination, with the upper frame, 75 of the movable seat-support pivoted on the axle of the machine and adapted to be moved forward, the removable tongue, and the front wheel-frame, as described, detachably secured to the main frame, substantially as de- 80 scribed.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN BURRFELLOWS COON.

Witnesses:

JAMES ELISHA FULCHER,
ED. J. MILLER.