

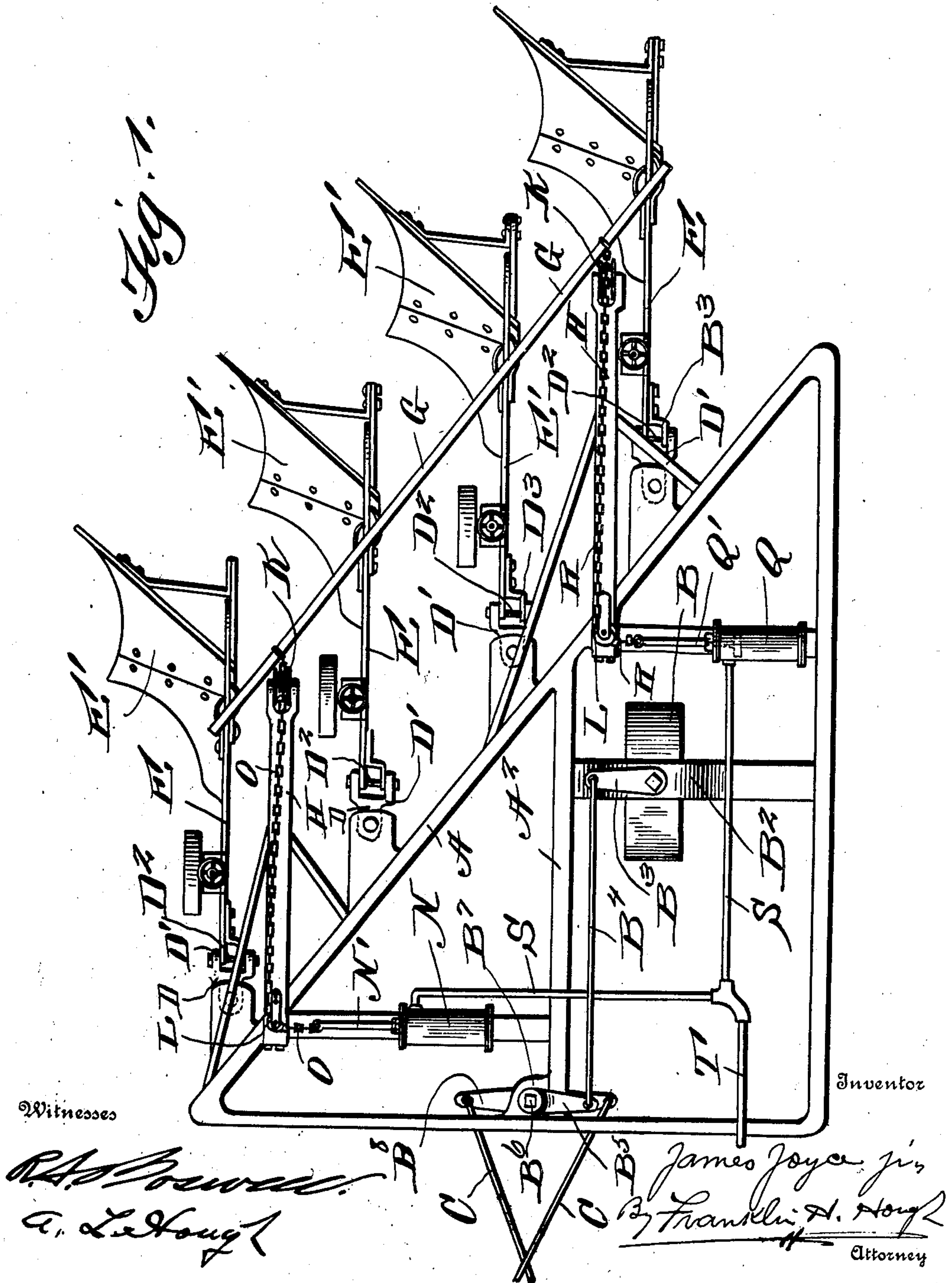
No. 863,999.

PATENTED AUG. 20, 1907.

J. JOYCE, JR.  
STEAM PLOW.

APPLICATION FILED APR. 24, 1907.

2 SHEETS—SHEET 1.



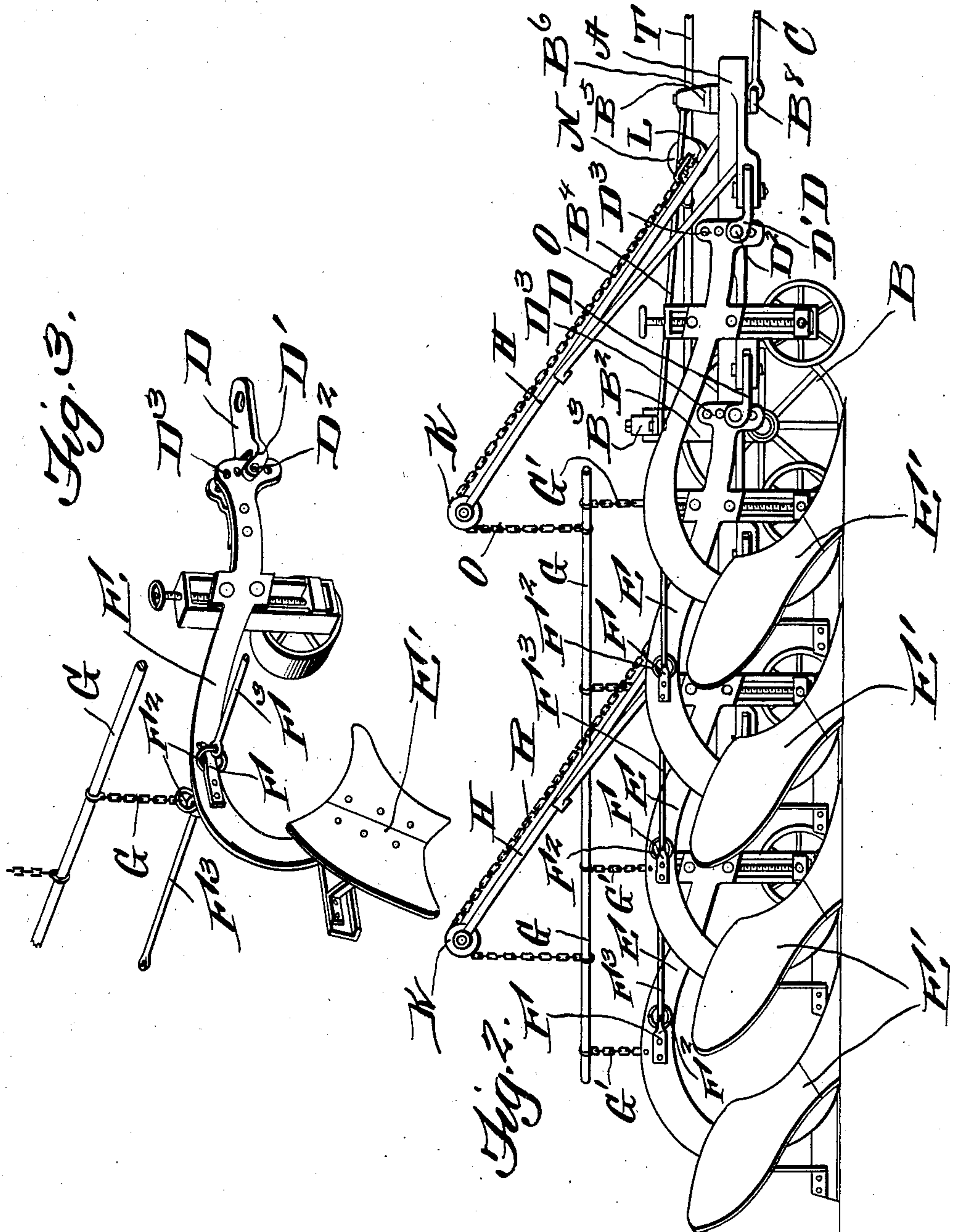
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2 SHEETS—SHEET 2.



Witnesses

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# UNITED STATES PATENT OFFICE.

JAMES JOYCE, JR., OF SIKESTON, MISSOURI.

## STEAM-PLOW.

No. 863,999.

Specification of Letters Patent.

Patented Aug. 20, 1907.

Application filed April 24, 1907. Serial No. 370,014.

*To all whom it may concern:*

Be it known that I, JAMES JOYCE, Jr., a citizen of the United States, residing at Sikeston, in the county of Scott and State of Missouri, have invented certain  
5 new and useful Improvements in Steam-Plows; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use same, reference being had to the accompanying  
10 drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in steam plows, and the object of the invention  
15 is to produce a simple and efficient apparatus of this nature whereby steam may be utilized for actuating mechanism for raising plows when coming to obstructions, and for other purposes.

The invention consists in various details of construction and combinations and arrangements of parts  
20 which will be hereinafter fully described and then specifically defined in the appended claims.

I illustrate my invention in the accompanying drawings, in which:—

25 Figure 1 is a top plan view of my improved steam plow. Fig. 2 is a rear elevation, and Fig. 3 is a side view.

Reference now being had to the details of the drawings by letter, A designates a framework which is  
30 made preferably of metal, either hollow or cast, and is of substantially triangular shape, and mounted upon a suitable carrying wheel B which is journaled in a suitable hanger (not shown), the shank portion of which is journaled in the arched yoke B<sup>2</sup>. Fixed to said  
35 shank portion is a crank arm B<sup>3</sup> pivoted to the bar B<sup>4</sup>, which in turn is pivotally connected to the lever B<sup>5</sup> fastened to the stub shaft B<sup>6</sup> which is journaled in a suitable bearing in the angle block B<sup>7</sup> bolted or otherwise secured to the frame proper and also to the reinforcing or cross-beam A<sup>2</sup>. To the lower end of said  
40 stub shaft B<sup>6</sup> is fixed a lever B<sup>8</sup> to which the cables C, which are crossed, are fastened. Said cables are crossed in order to make the guide wheel have the proper direction when turning.

45 Fastened at intervals to the diagonally disposed portion of the frame is a series of hitching clips or braces D, which are made preferably of metal, and each of said hitching clips has a forked end D', the arms of which carry a pin D<sup>2</sup> upon which the adjustable perforated plates D<sup>3</sup> are mounted, which plates  
50 are bolted or otherwise secured to the forward ends of the plow beams E. E' designates plows, preferably with stubble bottoms. Fastened to the side of each of said beams E is a resilient hook F, being held normally in a closed relation against the beam to which it  
55 is fastened and is designed to hold a ring F<sup>2</sup> to which

the rods F<sup>3</sup> having eyes at the ends are connected. By these rods and rings, it will be noted that the various plow beams are connected together, and by the construction shown, means is provided whereby in the  
60 event of any of the plows catching upon an obstruction and throwing the same out of the ground, that particular plow will be detached from the other series without injuring the same.

A lifting beam G is connected by means of chains  
65 G' with each plow beam, said chain having direct connection with one of the rings F<sup>2</sup>, as shown, and H, H designate lifting cranes which are fastened at their forward ends to the main frame of the apparatus and carry the grooved sheaves K and L, the former of  
70 which are journaled at the rear forked ends of said lifting cranes and are vertically disposed, while said sheaves L are horizontally journaled and near the inner ends of said cranes.

N designates a steam cylinder having a piston rod  
75 N' adapted to be driven by a piston mounted within said cylinder, and O designates a chain which is fastened at one end to said piston rod and passing about the two sheaves K and L, is fastened to said lifting  
80 beam G.

Q designates a second steam cylinder having a piston stem Q' actuated by a piston within the cylinder Q, and R designates a chain which is fastened to the piston stem Q', passes about two of the sheaves L and K, as shown, and is fastened to the lifting beam G. A  
85 steam pipe S communicates with said cylinders, and branching from said pipe is a supply pipe T which is adapted to have direct communication with a steam boiler (not shown) of a traction engine.

The operation of my invention will be readily understood and is as follows. The plow frame is adapted  
90 to be connected to any form of traction engine, and the apparatus shown is adapted to turn six furrows at once, although it will be understood that any number of plows may be utilized as may be desired, and  
95 in the event of it being desired to raise the plows for any purpose, it may be done by causing steam to act upon the pistons within said cylinders which will cause the lifting bar and the plows attached thereto to be raised from the ground. In the event of any one of the plows striking an obstruction, the hinged  
hooks fastened to the plow beams will open and allow the particular plow which meets the obstruction to be detached from the others without injury to the same.

What I claim is:—

1. A steam plow comprising a frame, a series of pivotally mounted plow beams thereon, steam actuated mechanism for raising and lowering the beams, each of said beams having a lateral projection, a boxing having open faces through which said lateral projection extends, a screw swiveled in the top of each casing and passing through said lateral projection, a bearing block mounted within each casing and carrying a caster wheel, and de-

tachable connections between said -plow beam, as set forth.

2. A steam plow comprising a frame, a series of pivotally mounted plow beams thereon, steam actuated mechanism for raising and lowering the beams, each of said beams having a lateral projection, a boxing having open faces through which said lateral projection extends, a screw swiveled in the top of each casing and passing through said lateral projection, a bearing block mounted within each casing and carrying a caster wheel, a resilient

finger mounted upon the face of each beam, the free portion of each finger being slightly curved, a ring normally held by the curved finger and rods connecting the rings held by said finger, as set forth.

In testimony whereof I hereunto affix my signature in 15 the presence of two witnesses.

JAS. JOYCE, JR.

Witnesses:

CHAS. C. PINNELL,  
L. C. MCCOY.