E. C. JONES.

Steam-Plow

No 18,749

Patented Dec 1. 1857

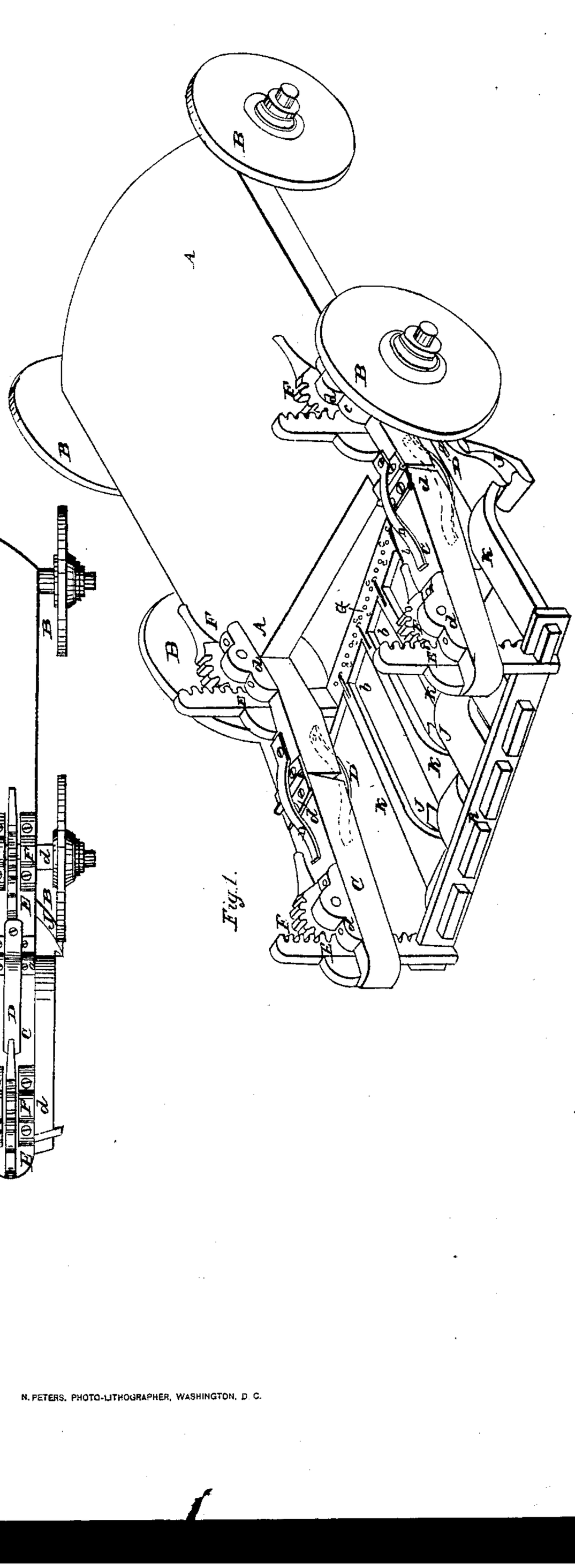

Fig. 1.

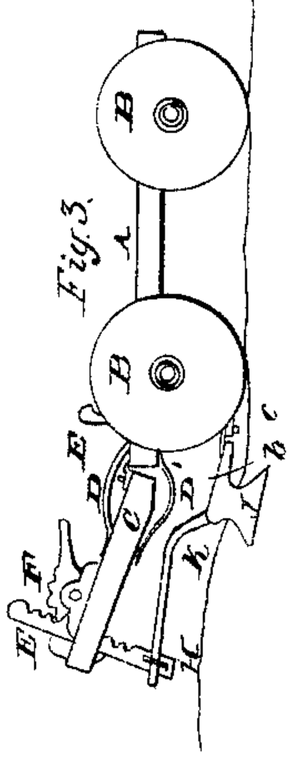

Fig. 3.

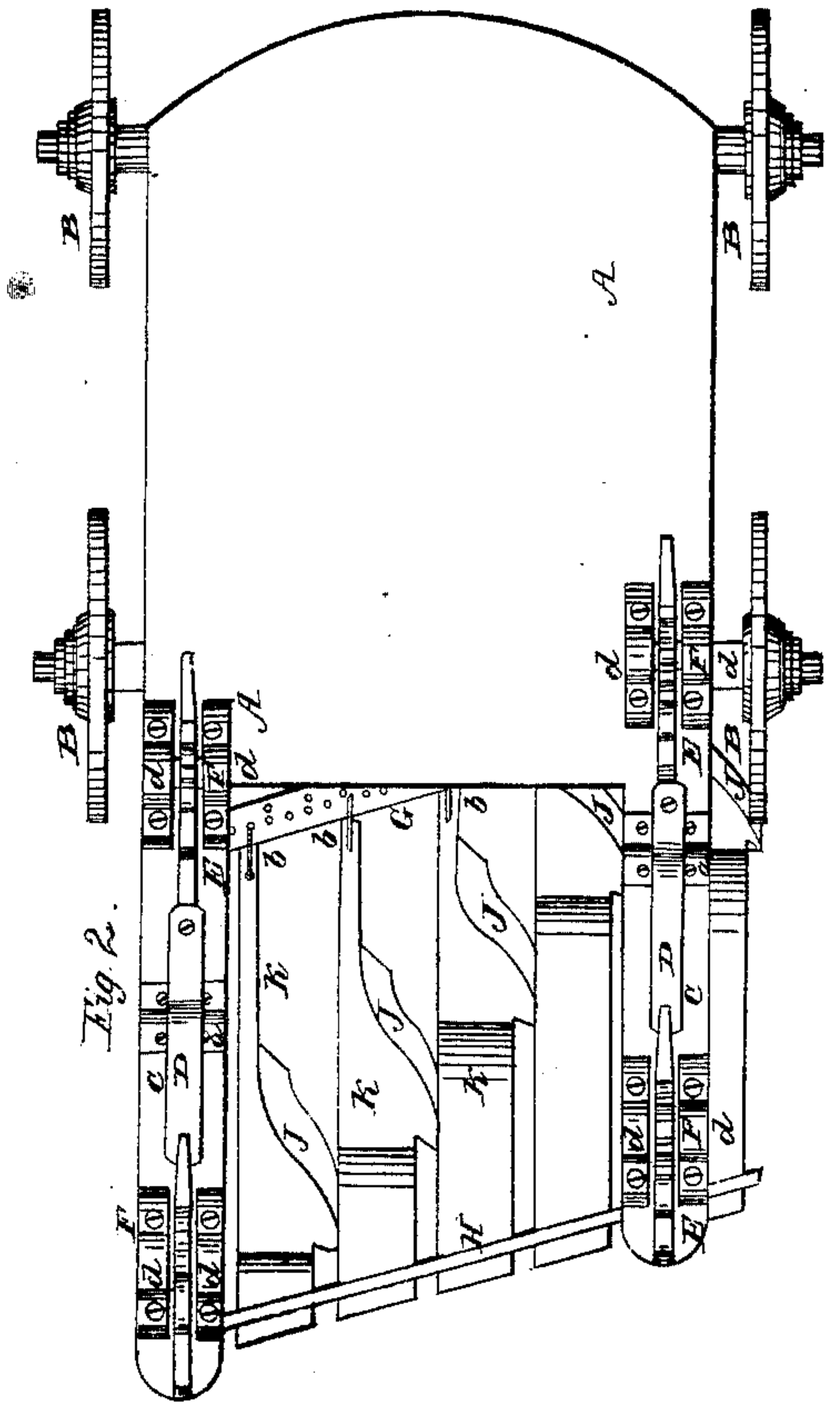

Fig. 2.

# UNITED STATES PATENT OFFICE.

EDWARD C. JONES, OF PITTSBURG, PENNSYLVANIA.

## IMPROVEMENT IN GANG-PLOWS.

Specification forming part of Letters Patent No. **18,749**, dated December 1, 1857.

*To all whom it may concern:*

Be it known that I, EDWARD C. JONES, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Gang-Plows Propelled by Steam-Power; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same.

The nature of my invention consists in coupling the plows constituting a gang to a front and back bar hung to the back end of a steam-carriage in such a manner that the said bars can be raised or lowered at their ends by means of rack-rods, levers, or other equivalent means, for the purpose of adjusting the depth of the furrows cut by the plows, and in connecting, further, the whole gang of plows with the steam-carriage, so that the position of the same adapts itself to the undulations in the surface of the ground to be plowed. To show this arrangement more fully I will proceed to describe the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a perspective view; Fig. 2, a top view, and Fig. 3 a diagram showing the manner in which the plows adapt themselves to the unevenness in the ground.

In all these figures the same letters of reference are marked on like parts.

A represents the frame of a steam-carriage.

B B are the wheels of the carriage. There is no boiler, engine, or any other part for the propelling and steering of the carriage shown in the drawings, as the same have no reference to my invention.

C C are beams at the back end of the carriage, which are attached to the frame A by hinges *a a*.

D D D′ D′ are springs above and below the beams C C.

E E′ are rack-rods passing through the frame A and beams C C.

F F are toothed segment-levers gearing into the racks E E′ and supported by the bearings *d d*.

G is a bar fastened to the racks E E, and H another bar connected with the racks E′ E′.

J J are the plows; K K, the plow-beams, the back ends of which pass through proper openings in the bar H, and are sufficiently wide to insure a steady position of the plows vertically. The front ends of the plow-beams are connected with the bar G by means of the links *b b*, hooked into holes *c c*. There is a sufficient number of these holes provided in the bar G for the purpose of enabling me to give the plows any desired position laterally, so as to form more or less of an angle with the line of draft, whereby they take more or less land.

The operation of the described machine is as follows: By turning the segment-levers F F up or down the bars G and H are lowered or raised, and as the four levers F F are independent from each other, it is obvious that by their means either of the sides of the gang, or the front or back of it, or the whole gang, may be raised or lowered. In this way a perfect control is had over the position of the plows, (in order to cut furrows of more or less depth,) or to lift the same over obstructions, such as stumps, rocks, &c. The arrangement of the hinged beams C C and springs D D′ is for the purpose of allowing the gang to adapt itself to any undulations in the ground to be plowed. When the machine moves over level ground the springs D D′ keep the beams C C in such a position that the soles of the plows are horizontal; but if an abrupt fall or descent occurs in the ground, so that the carriage gets into a lower position in relation to the gang, as is indicated in Fig. 3, the beams C C will be pressed against the springs D D by the resistance of the ground under the soles of the plows. The springs D D, yielding, will allow the beams C C, and with the same the whole gang, to adopt the position as shown in Fig. 3, in which the sole of the plows is not horizontal any more, but follows the descent in the ground. The arrangement of the hinged beams C C and springs D D prevents at the same time the breaking of the plows or of parts connected therewith, which would occur in consequence of the pressure or resistance of the ground on the sole of the plows in an abrupt descent of the surface, as they yield to the said pressure. If an abrupt rise occurs in the ground to be plowed, the beams C C will bear against the lower springs, D′ D′, which in yielding will allow the gang to accommodate itself to the ascent of the ground in a similar manner, as above described.

Having thus fully described my improve-

ment, what I claim herein as new, and desire to secure by Letters Patent, is—

1. The arrangement of the hinged beams C C and springs D D′, or any equivalent device therefor, when constructed and operating substantially as described.

2. The coupling of the plows to a front bar, G, and back bar, H, as described, which bars can be raised or lowered by means of the rack-rods E E′ and segment-levers F F, or any equivalent means in their place, substantially in the manner and for the purpose herein set forth.

EDW. C. JONES.

Witnesses:
JOHN A. MARTIN,
HENRY MOSER.