

No. 840,139.

PATENTED JAN. 1, 1907.

G. E. LE CLAIR.
COMBINED GRADER AND SCRAPER.
APPLICATION FILED APR. 14, 1906.

Fig. 1.

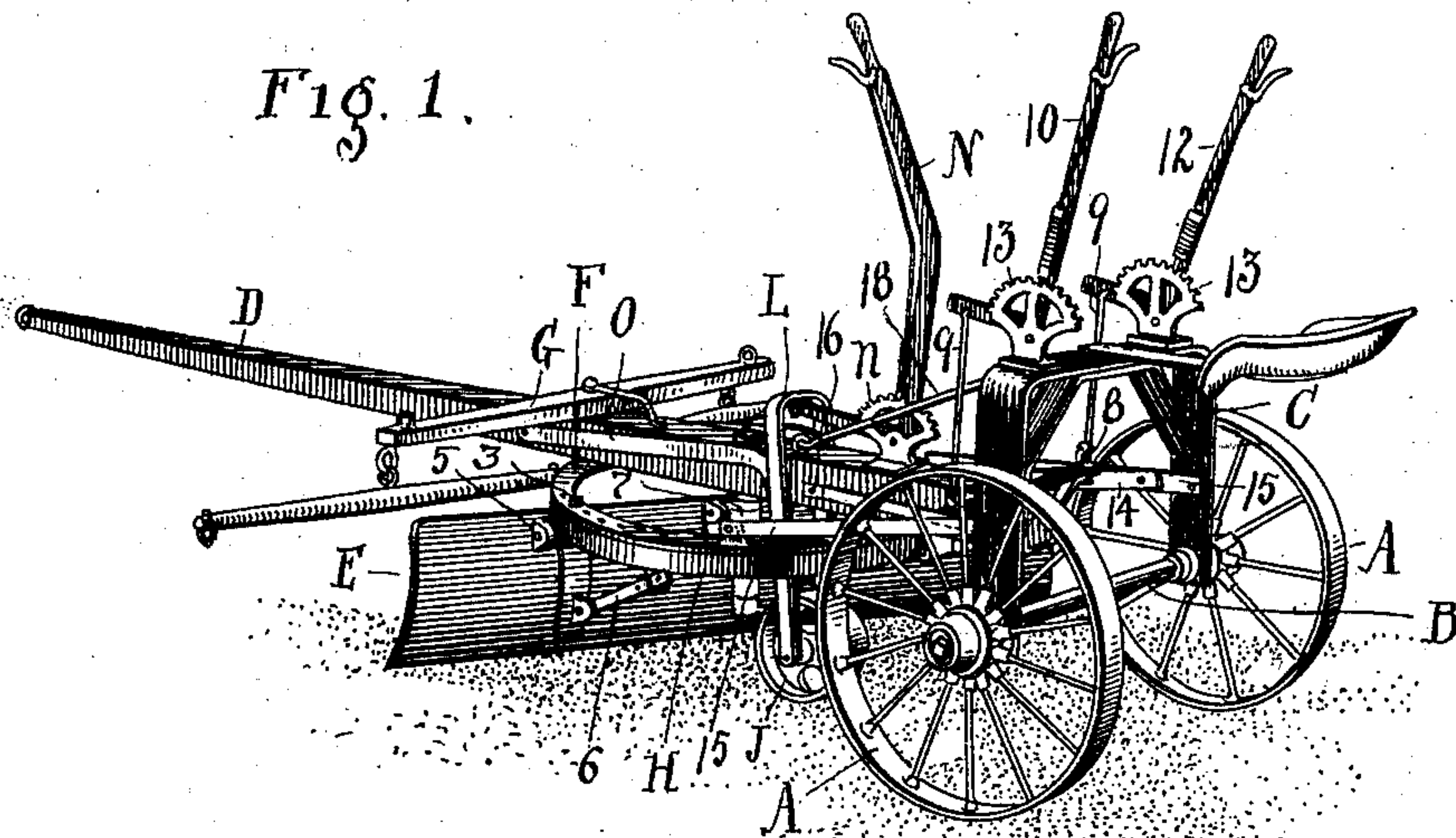


Fig. 2.

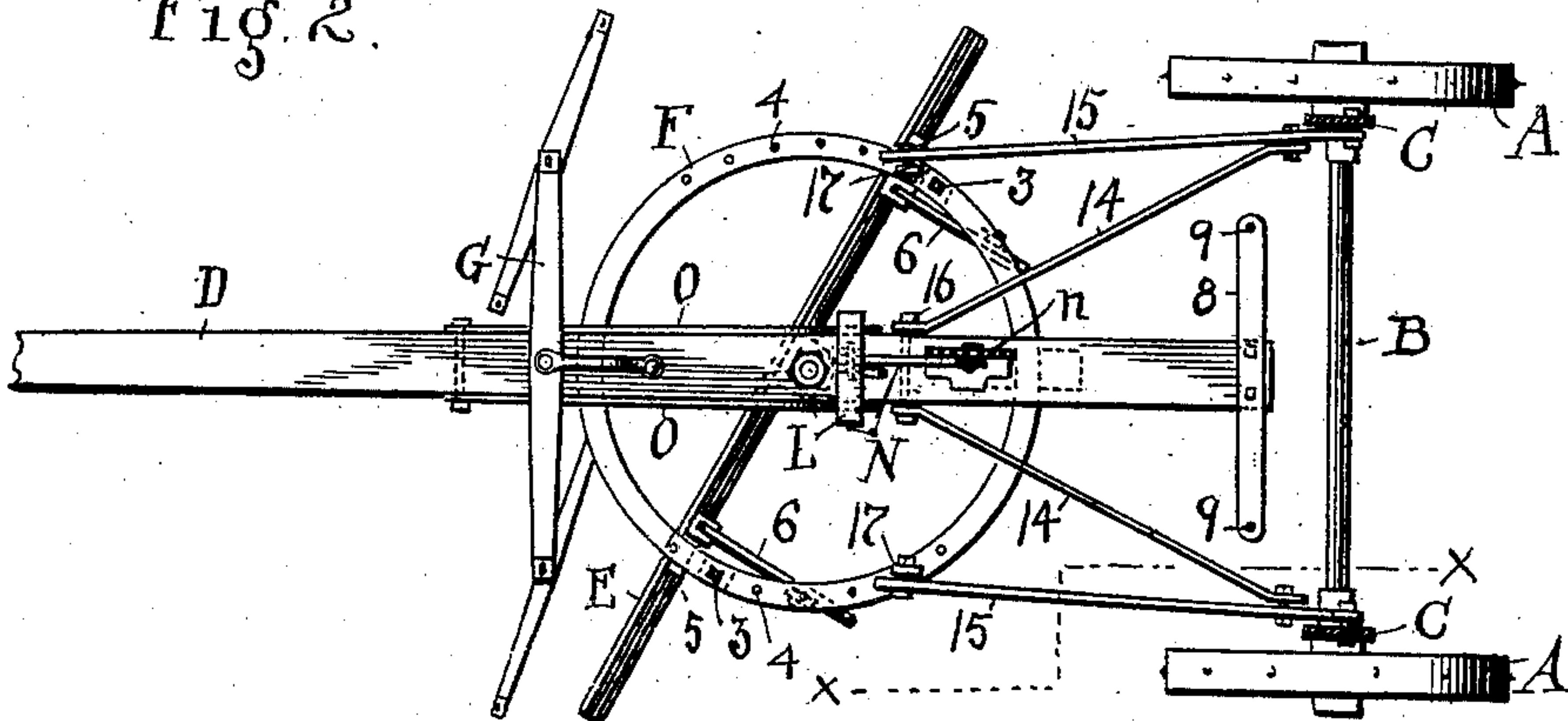
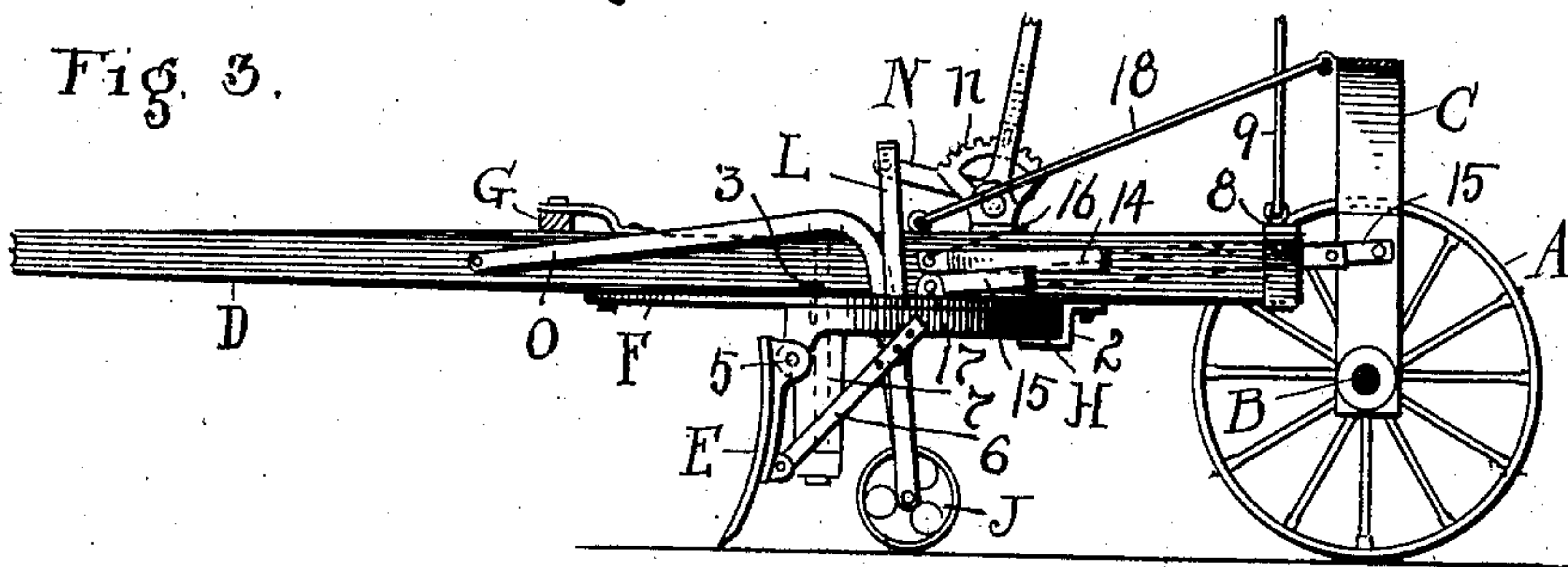


Fig. 3.



WITNESSES:

W. B. Moser
C. A. Bell

INVENTOR.

George E. Le Clair
BY *H. J. Fisher*
ATTORNEY.

UNITED STATES PATENT OFFICE.

GEORGE E. LE CLAIR, OF ELYRIA, OHIO.

COMBINED GRADER AND SCRAPER.

No. 840,139.

Specification of Letters Patent.

Patented Jan. 1, 1907.

Application filed April 14, 1906. Serial No. 311,664.

To all whom it may concern:

Be it known that I, GEORGE E. LE CLAIR, a citizen of the United States, residing at Elyria, in the county of Lorain and State of Ohio, have invented certain new and useful Improvements in a Combined Grader and Scraper; and I do declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to a combined grader and scraper; and the invention consists in a grader and scraper which has a two-wheeled carriage and operating mechanism arranged at the front thereof and connected mainly with the tongue or pole and means within reach of the driver seated on the carriage to control the elevations and operation of the scraper, all substantially as shown and described, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of the entire machine as it appears for use; and Fig. 2 is a plan view thereof, showing one of a number of positions to which the scraper or scraper-blade is adapted to be adjusted. Fig. 3 is a longitudinal sectional elevation of the machine on a line corresponding to $x x$, Fig. 2, with the tongue in full lines.

As thus shown the machine is carried, in the main, by the two wheels A and axle B, upon which there is mounted an arch or truss C starting from a point at the hub of the wheels at each side and raised to some distance above the wheels and provided with a flat top portion to support other parts and constituting what is hereinafter denominated a "carriage."

D represents the draft tongue or pole, to which the team is hitched, as usual, and E represents the scraper or scraper-blade. Said blade is supported from a carrying-ring F, rigidly secured to the bottom of tongue D relatively to whiffletree G and the carriage, as shown. In this instance the said ring is located well to the front of the carriage and approximately near to the whiffletree and is adapted to carry the scraper across its center and at more or less inclination to one side or another, according to its adjustment, and thus also bring the point of draft as near to the scraper as possible.

The scraper or blade is supported upon the said ring through a segment or semicircular

piece H, which is rotarily adjustable upon said ring, according to the angle at which the blade is to be set, right or left, and a bracket 2 sustains said segment centrally from the tongue or pole D, while suitable bolts 3 at its ends are adapted to engage through any one of the series of holes 4 at each side, and thus support the front ends of the segments or blade, which is pivoted at 5 to depending extremities of said segments, as seen in Fig. 3, and at its middle, Fig. 1, where a central support 7 carries the scraper. The inclination at which the blade works on said pivots is controlled by an adjustable brace 6 at each end or side of the machine, and thus it is within the province of the operator to place the blade in any vertical position or angle desired and according to the earth handled and the work to be done.

Behind scraper E, I employ a roller or wheel J. Said roller is relatively small and carries a yoke L, which is engaged with the spindle of said roller at each side and extends over and above the tongue, where a crank-arm on lever N engages the said yoke and contributes to hold the tongue in any desired elevation. Said lever N is pivotally supported on the tongue, and a suitable pawl thereon is adapted to engage segment n . Support for the tongue over or upon the said wheel J is derived through the right-angled carrying-pieces O, which have their rear and lower ends engaged with the ends of spindle of wheel J and their forward ends or arms loosely bolted to tongue D well to the front of the whiffletree, as shown in this instance. The adjustments effected through lever N, yoke L, and wheel J are therefore transmitted to tongue D through said right-angled side supporting-pieces O, which serve to bring a balancing support to the tongue from that point. Otherwise the tongue is supported from truss C at the rear by means of a fixed cross-piece 8 at its rear end, links 9 extending practically up therefrom, and right-angled levers 10 and 12, respectively, which are supported on the top of said truss and have pawl-engaging ratchet-segments 13, by which the rear elevation of the tongue is fixed.

It will be noticed that there are two of these levers for controlling the elevation of the tongue through the cross-bar 8 at its rear, so that thereby the tongue may be tilted laterally, as may be desirable at any time, according to the levels that are being worked

upon. Through this mechanism also the elevation of the rear end of the tongue is made positive and is divested of any up-and-down play when adjustment thereof is accomplished, thus making these rear connections in a sense positive connections for the tongue and cooperating with the right-angled side pieces O in determining the elevation and relation of the tongue to the other parts.

Other mechanism connected with the tongue is comprised in the two draft rods or bars 14, engaged at their rear ends in or through the connecting-bars 15 and running at an inward inclination to the front, where they are loosely bolted to the sides of the tongue through bolt 16. Connecting bars or rods 15 are fixed near the base or bottom of truss C at their rear, and their front ends are attached to lugs 17 on ring F, so that they serve both as connections and stays for the sides of said ring from the carriage. A balancing rod or bar 18 extends from the tongue to the top of the carriage, which helps to maintain the right-angular relations of said parts and the uprightness of the truss.

What I claim is—

1. In a combined grader and scraper, a set of supporting-wheels, a tongue adjustably suspended at its rear from said wheels, a roller beneath the rear portion of said tongue, and means from which the tongue is balanced and vertically adjusted between its ends, and a scraper-blade supported from said tongue in advance of said roller.

2. In a combined grader and scraper, a two-wheeled carriage, a tongue adjustably suspended at its rear end from said carriage and side draft-rods from carriage to tongue, a separate roller-support for the tongue between its ends and means to fix the elevation of the tongue as to said support, a ring fixed on said tongue and a scraper adjustably supported from said ring.

3. In a combined grader and scraper, a wheeled carriage, a tongue adjustably suspended therefrom at its rear end and having draft connections with said carriage loosely engaged at their ends, in combination with a roller supporting the tongue between its ends, a yoke over the tongue connected with said roller and an adjusting lever mounted on the tongue to raise and lower said yoke, and right-angled carriers engaged at one end on said roller and at their other ends with said tongue forward of said yoke.

4. In a combined grader and scraper, a suitable wheeled carriage and a tongue loosely supported therefrom at its rear end, in combination with a carrying-roller for the tongue forward of said carriage, a yoke over the tongue having its ends engaged with the spindle of said roller, a lever mounted on the tongue engaged with said yoke and right-angled side supporting pieces for the tongue resting on said roller-spindle at the lower ends and having their upper front ends loosely engaged at the sides of the tongue, and a scraper supported from said tongue.

5. In a combined grader and scraper, a suitable carriage, a tongue and link connections therewith from said carriage, and means to laterally tilt the tongue, comprising a cross-piece fixed at its rear end, separate lever-adjusting mechanism mounted on said carriage and linked to the ends of said cross-piece, and separate roller-supported mechanism loosely connected with the tongue forward of said carriage.

6. A combined grader and scraper comprising a wheeled carriage, in combination with a tongue having link connections with the carriage, a roller and parts resting thereon to adjustably support the tongue between its ends, a supporting-ring fixed to the tongue, a scraper and a rotarily-adjustable segment supporting said blade from said ring.

7. The wheeled carriage and the tongue adjustably supported therefrom, a separate roller beneath the rear portion of the tongue, and means to carry the body of the tongue therefrom, a ring on said tongue and a segment adjustable on said ring, a scraper supported from the ends of said segment and means to fix the inclination of the scraper to a vertical plane.

8. The carriage and the tongue adjustably suspended therefrom at its rear end and link connections between the carriage and the tongue, an adjustable roller-support for the tongue between its ends and a transversely-arranged scraper adjustably supported from said tongue in advance of said roller-support.

In testimony whereof I sign this specification in the presence of two witnesses.

GEORGE E. LE CLAIR.

Witnesses:

C. A. SELL,

E. M. FISHER.