No. 799,826. PATENTED SEPT. 19, 1905.

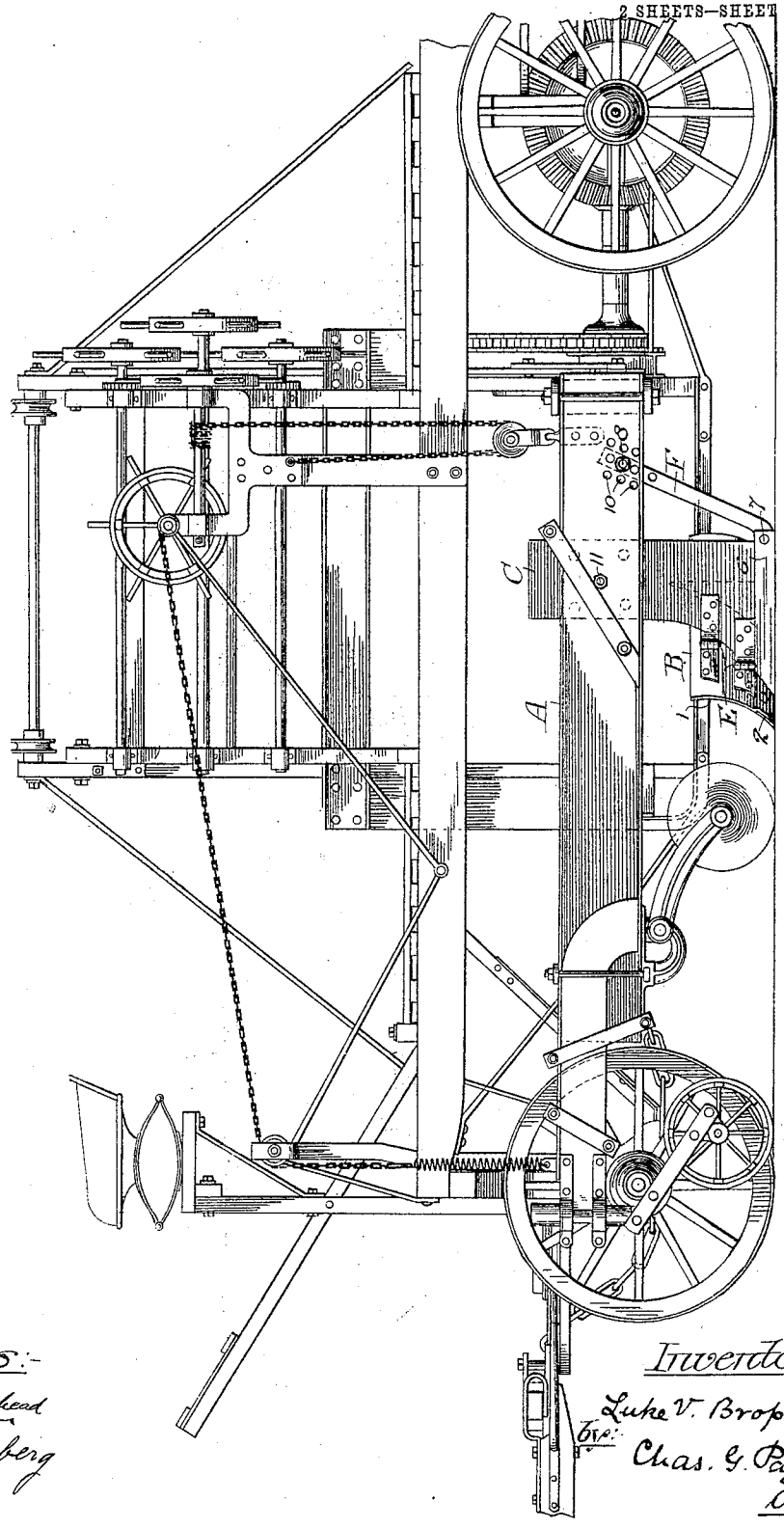
L. V. BROPHY.

ELEVATING GRADER.

APPLICATION FILED MAY 18, 1905.

2 SHEETS—SHEET 1.

Fig. 1.



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2 SHEETS—SHEET 2.

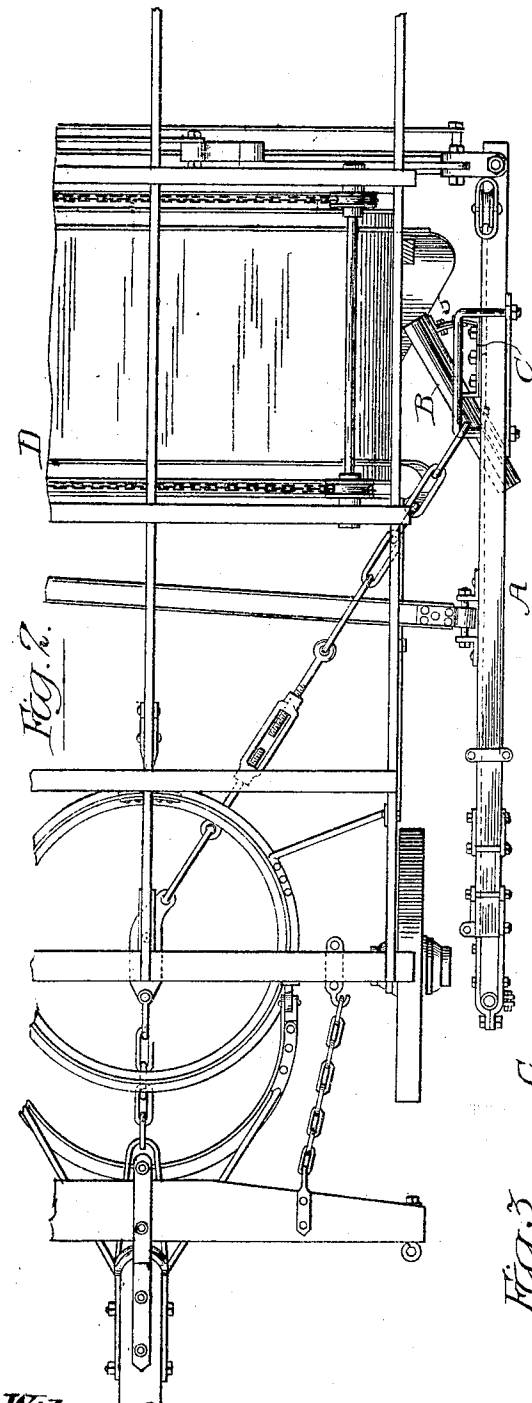


Fig. 2.

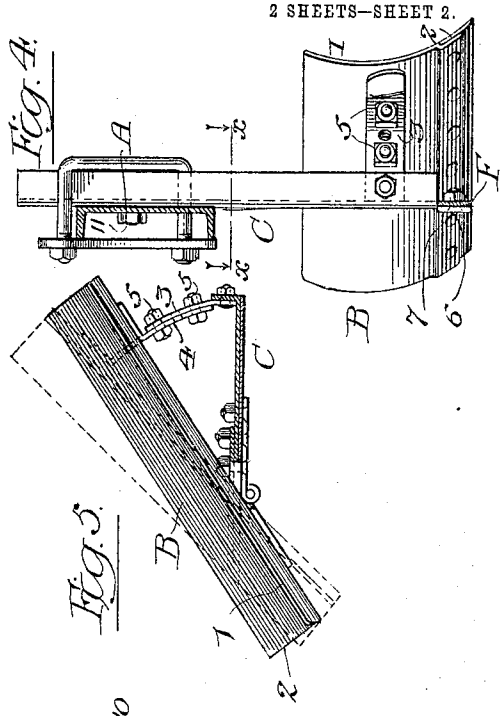


Fig. 4.

Fig. 5.

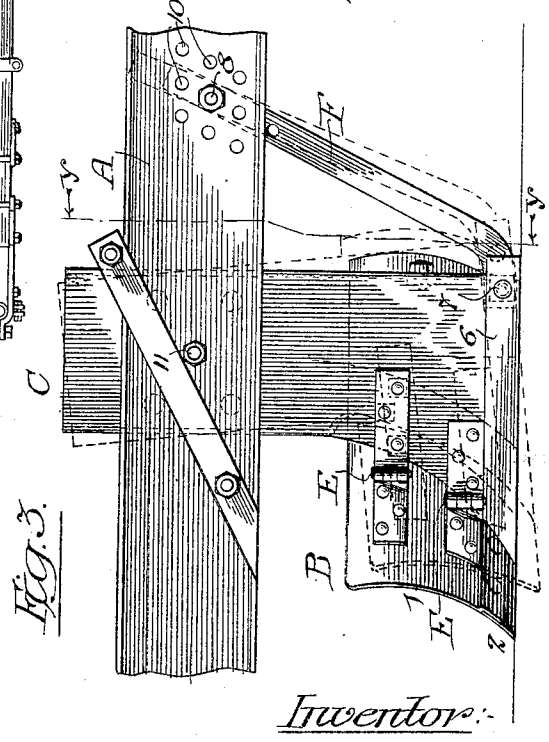


Fig. 3.

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UNITED STATES PATENT OFFICE.

LUKE VINCENT BROPHY, OF BARBERTON, OHIO, ASSIGNOR TO NATIONAL DRILL AND MANUFACTURING COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF WEST VIRGINIA.

ELEVATING-GRADER.

No. 799,826. Specification of Letters Patent. Patented Sept. 19, 1905.

Application filed May 18, 1905. Serial No. 260,920.

To all whom it may concern:

Be it known that I, LUKE VINCENT BROPHY, a citizen of the United States, residing at Barberton, in the county of Summit and State of Ohio, have invented certain new and useful Improvements in Elevating-Graders, of which the following is a specification.

My invention relates to machines commonly known as "elevating-graders" and involving as a matter of general construction a wheeled body-frame, a plow, and an elevating-conveyer to which the plowed-up soil is delivered from the plow.

Objects of my invention are to render a machine of such general character particularly effective for work in sandy or other mobile soil, to vary the resistance in opposition to the plowing action and delivery to the elevating-conveyer proportionally to the mobility of the soil, to adjust the plow with reference to the character of the work without materially interfering with the delivery of soil from the plow to the elevating-conveyer, to provide for a free and effective delivery from the plow to the elevating-conveyer, and to provide certain novel and improved details tending to increase the general efficiency of the machine.

In the accompanying drawings, Figure 1 is a side elevation of the major portion of an elevating-machine embodying my invention, the elevating-conveyer being omitted for convenience of illustration. Fig. 2 is a top plan view of a portion of the machine, including a portion of the elevating-conveyer. Fig. 3 is a side elevation of the plow and portion of the plow-beam on a larger scale than in preceding figures. Fig. 4 shows the plow in rear elevation, the beam being shown in cross-section. Fig. 5 is a section on line x x in Fig. 4 looking downwardly.

A indicates the plow-beam suspended at one side of the wheeled truck or carriage. B indicates the plow, and C denotes the plow-standard, which is attached to the plow-beam A. The truck or carriage is provided with a transversely-arranged elevating-conveyer D, a portion of which is illustrated in Fig. 2, it being here observed that the general arrangement of the carriage, the elevating-conveyer, the plow-beam, and the plow-standard is substantially like that shown in Letters Patent No. 743,487 to Thomas J. Gray, dated November 10, 1903, for improvements in "elevating-conveyers" or "grading and ditching machines," as devices or machines of this class are indifferently termed. Fig. 1 also shows the plow-beam supported for up-and-down adjustment substantially as in said patent.

The plow is arranged opposite the lower receiving end of the elevating-conveyer, which takes the loose soil from the plow during the progress of the work. The plow comprises a horizontally-oblong and transversely-curved plate or moldboard 1, to the lower edge portion of which is secured the share 2. The forward side or face of the moldboard is transversely concave, and the forward side or face of the plowshare is preferably flush with the front side of the moldboard along the line of juncture between the upper longitudinal edge of the oblong plate which forms the share and the front side of the moldboard, it being also observed that the plate forming the plowshare 2 is transversely curved in conformity with and in continuation of the transversely front side or face of the moldboard. The moldboard and the plowshare are also longitudinally straight, as illustrated, whereby the plow B resembles a scraper-blade having its lower longitudinal marginal portion adapted to form a plowshare. The forward portion of the moldboard is attached to the plow-standard by hinges E E, having their strap portions fastened to the landside of the plow-standard and to the back or land side of the moldboard. The rear end portion of the plow has an adjustable connection with the rear portion of the plow-standard, as best illustrated in Figs. 4 and 5. This adjustable connection is attained by brace 3, secured to the plow-standard, and a brace 4, secured to the landside of the plow, these braces being provided with suitable openings for bolts 5, which can be inserted through registering openings in said braces and then securely fastened in place by means of nuts. By this arrangement the horizontal angle of the plow can be varied with reference to the character of the soil, an adjustment of the plow from its position shown in full lines in Fig. 5 being indicated by dotted lines in said figure. For loose or sandy soil the plow can be adjusted so as to plow and scrape a wider path or furrow and deliver the sand to the elevating-conveyer—as, for example, for such work the plow could be adjusted to the position indicated by dot-

ted lines in Fig. 5; but where the soil is still mobile, but a little harder or more united, then the plow can be adjusted back from said position indicated in dotted lines. In other words, the horizontal angle of the plow relative to the line of progression can be varied, and thereby made more or less oblique, according to the character of the work.

The form and arrangement of the moldboard and its relation to the elevating-conveyer permits free and rapid delivery of sandy soil and the like to the elevating-conveyer, and this form and arrangement of plow permits the machine to operate much more rapidly than where an ordinary plow is employed.

F indicates a brace hinged to the heel of the landside proper, 6, of the plow, said brace being shown hinged at its lower end by a pivot 7 and at its upper end connected with a plow-beam by a bolt 8, which is removably fastened by a suitable nut in one of a series of holes 10 in the plow-beam. By this arrangement the brace F can be adjusted so as to vary the dip of the point of the plow as may be desired, it being observed that the plow-standard is secured to the plow-beam by a central bolt 11, which can be used as a pivot.

What I claim as my invention is—

1. In an elevating-grader, a wheeled carriage provided with an elevating-conveyer; and a plow supported opposite the delivery end of the elevating-conveyer and constructed with a horizontally-straight and oblong moldboard provided with a share at its lower marginal portion, the forward portion of the moldboard being hinged to the plow-standard and arranged for horizontal diagonal adjustment independently thereof; and means for adjustably holding the moldboard in position relatively to the plow-standard.

2. In an elevating-grader, a transversely-arranged elevating-conveyer; the plow comprising the moldboard 1 and share 2; the plow-standard C attached to the plow-beam; hinge connections between the forward end portion of the moldboard and the standard, and adjustable brace connection between the plow-standard and the rear end portion of the moldboard, and means for tilting the plow.

3. In an elevating-grader, a truck or carriage provided with a transversely-arranged elevating-conveyer; a plow suspended at one side of the carriage and constructed with an oblong, transversely-curved plate forming the moldboard and having a lower marginal part forming the share; a standard secured to a plow-beam, hinge connection between the moldboard and the standard, and an adjustable connection between the moldboard and standard in rear of said hinge connection; the combined moldboard and share being adjustable horizontally to vary its angle to the line of progression.

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