

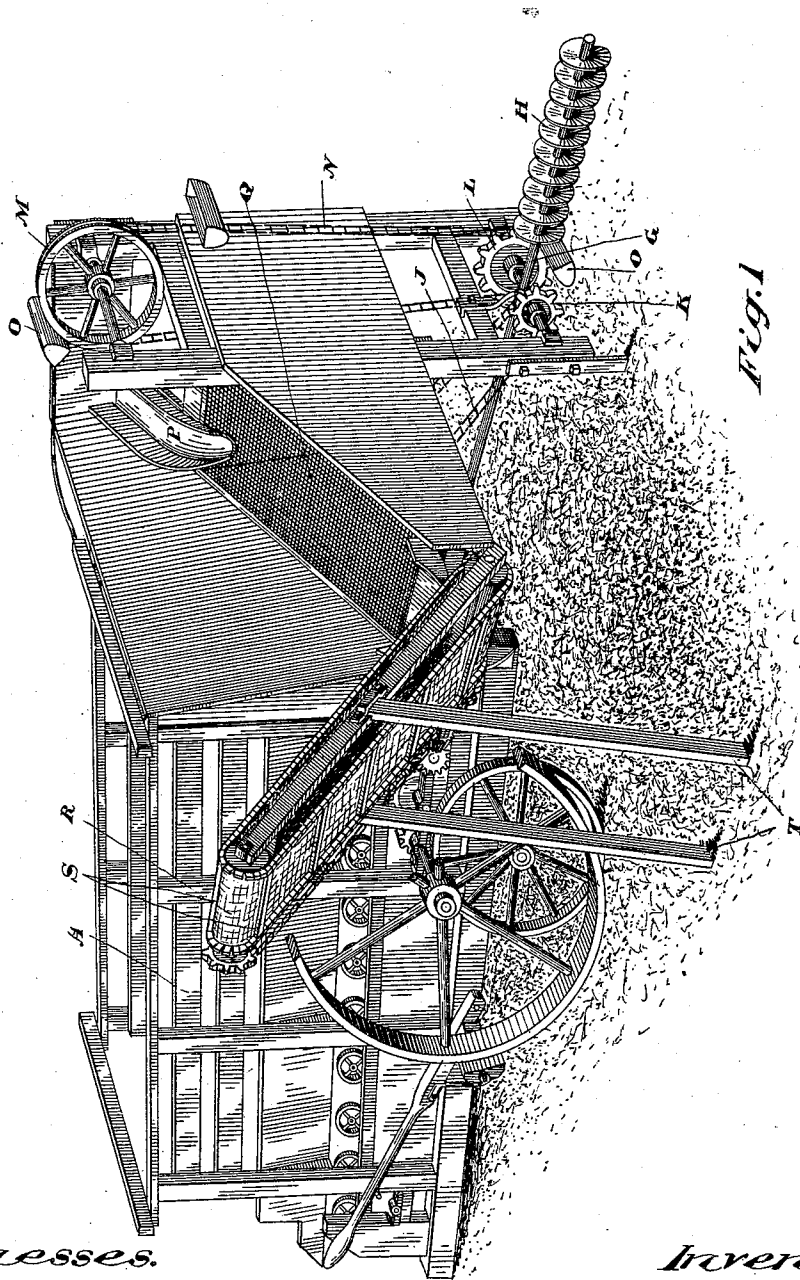
(No Model.)

2 Sheets—Sheet 1.

J. GRIERSON.
MACHINE FOR LOADING COAL.

No. 479,641.

Patented July 26, 1892.



Witnesses.

A. Cameron

W. G. McMillan

Inventor.

James Grierson
by *Donald C. Ridout & Co.*
Attys.

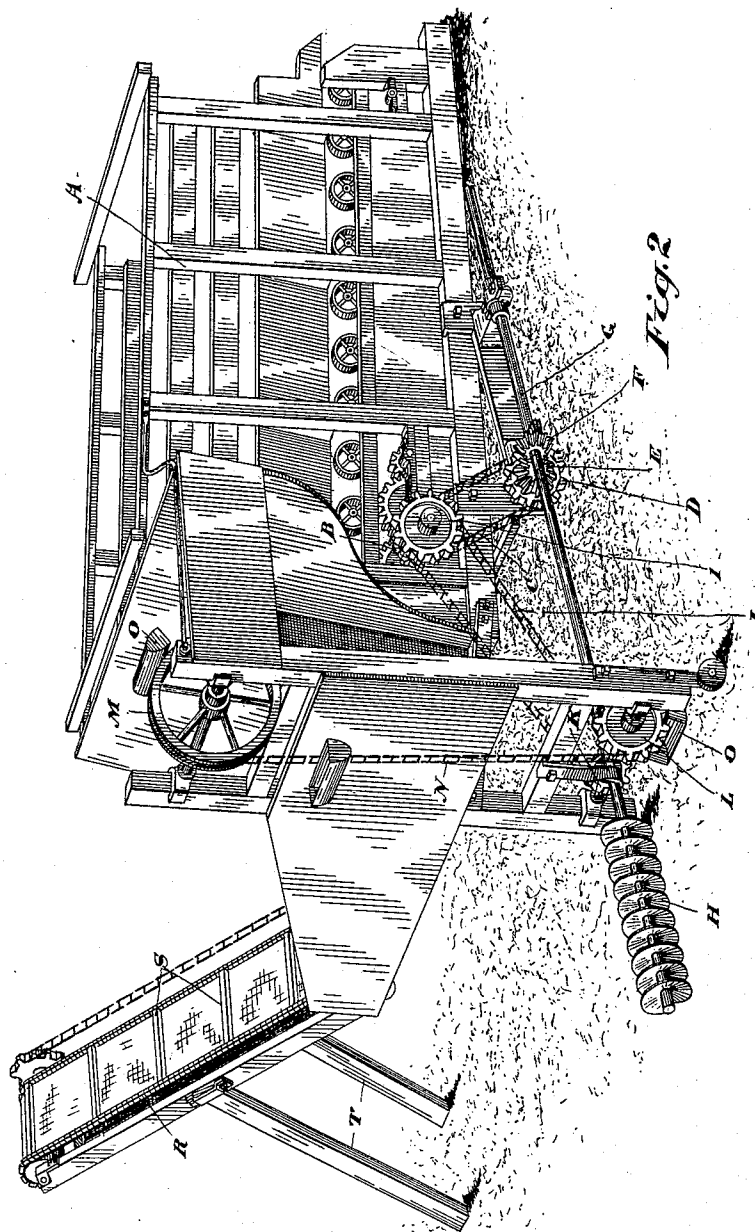
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UNITED STATES PATENT OFFICE.

JAMES GRIERSON, OF TORONTO, CANADA.

MACHINE FOR LOADING COAL.

SPECIFICATION forming part of Letters Patent No. 479,641, dated July 26, 1892.

Application filed December 3, 1891. Serial No. 413,906. (No model.)

To all whom it may concern:

Be it known that I, JAMES GRIERSON, of the city of Toronto, in the county of York, in the Province of Ontario, Canada, have invented
5 a certain new and Improved Machine for Loading Coal, of which the following is a specification.

The object of the invention is to design a machine by which coal may be taken from
10 the yard and elevated into carts without manual labor; and it consists, essentially, of an Archimedean screw arranged in connection with elevating-buckets, a screen, and an elevator, the whole being operated by a horse or
15 other suitable power and supported on wheels in such a manner that it can be transferred from one part of a coal-yard to another, as hereinafter more particularly described and then definitely claimed.

20 Figures 1 and 2 are perspective views of the machine from opposite sides.

A represents an ordinary horse-power, which I need not describe in this specification, as it is of ordinary construction, and I do not
25 confine myself to its use, my invention being applicable to any kind of driving-power.

B is a sprocket-wheel fixed to the driving-shaft of the horse-power. This sprocket-wheel is connected by a sprocket-chain C to
30 a sprocket-wheel D, which has connected to it a beveled pinion E, which pinion meshes with a beveled pinion F, held to the shaft G by a feather-key in such a manner that the shaft may be adjusted longitudinally with-
35 out moving the pinion F. On the end of the shaft G, I fix an Archimedean screw H, which screw is forced into the pile of coal it is desired to elevate. In addition to the sprocket-wheel B, I fix upon the driving-shaft of the
40 power a similar sprocket-wheel I, which is connected by a sprocket-chain J to a sprocket-wheel K, fixed to a counter-shaft on which a sprocket-wheel L is connected. This latter sprocket-wheel is connected to a pulley M by
45 a sprocket-chain N. A series of elevating-buckets O are connected to the sprocket-chain N and pass over the pulley M, as indicated in the drawings.

The following is a brief description of the

operation of the machine: The shaft G is first 50 adjusted so that the Archimedean screw H is in the pile of coal. The machine is then started and the Archimedean screw H draws the coal toward the buckets O, which, as they go up with the chain N, will fill themselves with 55 coal, discharging the said coal into the spout P, which conveys the coal into the screen Q. From this screen the coal falls into an elevator R, which consists of an endless apron having a series of slats S arranged across it, 60 as shown. This apron may be made of canvas or any suitable material. The elevator R is hinged, as shown, at the bottom of the screen, a pair of legs T being provided for the purpose of holding the elevator at the re- 65 quired elevation, so that the coal it elevates may be discharged by it into a cart placed below or in proximity to the elevator.

Although my machine is specially designed for loading coal, it will of course be under- 70 stood that it may be used for loading grain, or for any other purpose it is applicable to.

Although, as before stated, I do not confine myself to a portable horse-power, as shown, still I find its use very convenient and ap- 75 propriate for driving my elevating-machine, as it enables me to move it about and the power is always readily obtained.

What I claim as my invention is—

A portable loading apparatus comprising a 80 suitable frame, a horse-power connected thereto, an Archimedean screw H, having its shaft extending under the horse-power and adjustable lengthwise thereunder, the endless chain 85 of buckets N O, the screen Q, and an endless apron-carrier R, a gear-wheel B, receiving motion from the horse-power and driving the screw through the medium of the chain C and gears I, D, E, and F and the endless chain of 90 buckets through the medium of the chain J and gears K L, all constructed and arranged substantially as shown and described.

Toronto, October 15, 1891.

JAMES GRIERSON.

In presence of—

J. EDW. MAYBEE,
F. A. WOODWARD.