S. E. Bolles,

Stump Elevator.

No. 12,666. Patented Apr. 10, 1855.

UNITED STATES PATENT OFFICE.

SOLOMON E. BOLLES, OF ROCHESTER, MASSACHUSETTS.

MACHINE FOR RAISING AND TRANSPORTING STONES.

Specification forming part of Letters Patent No. 12,666, dated April 10, 1855; Reissued November 6, 1860, No. 1070.

To all whom it may concern:

Be it known that I, SOLOMON E. BOLLES, of Rochester, in the county of Plymouth and State of Massachusetts, have invented a new and useful Machine for Digging Stones; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a perspective view of the whole apparatus; Fig. 2 is a back sectional view of a portion of the axletrees, derrick and bedframe combined; Fig. 3 is a section of the bedframe, a portion of the windlass and tongue; Fig. 4 is a section of a front view of a portion of the derrick; Fig. 5 is a section of a brace by which a portion of the derrick, bedframe and axletree are secured and combined; Fig. 6 is a section of that portion of the axletree on which the wheel revolves, and by which the axletree is secured to the underside of the bedframe.

Fig. 1: A A are the wheels which need no further specification; B B B B is a triangular derrick, supported by the bedframe C C C C—shown at H H in Fig. 2—said bedframe derrick and axletree combined, forming directly the novelty of the aforesaid machine. D is the tongue, which needs no further description. E is a shaft around which the chain is coiled, in raising stones by means of the windlass. F is the well known power windlass which also needs no particular description in this specification. G is a common tackle block. H is a chain passing through the aforesaid block and around the shaft E. I I is the stone designed to be removed by aforesaid machine. J J is a rope, coiled around the drum K, on the shaft of the windlass F, and which is uncoiled, by the rotation of the windlass, when the said machine is in operation by means of operators at the crank and the team attached to the end of said rope at L. *a* is a pin which prevents aforesaid drum K from revolving on the shaft of windlass F; and which is removed when the rope is to be recoiled on the aforesaid drum. *b* is a ratchet on the drum K in which catches a pawl when the machine is in operation solely by the operators at the crank; shown more particularly at D in Fig. 3.

Fig. 2: A A A is the aforesaid device shown by B B, &c., in Fig. 1. B B are those portions of the axletrees on which the wheels revolve. C C C C are sections of portions of the axletrees and braces the peculiar novelty of which is more prominently shown in Figs. 5 and 6. D D are nuts; E E are washers which need no further specification. F is the block described by G in Fig. 1. G is a staple by which the block F is secured to the derrick. H H is the bedframe when the axle is secured to the derrick. I I is the chain shown by H in Fig. 1. *a a a a* are bolts by which the axletrees and braces are secured to the derrick and bedframe. *b* is a bolt. *c c* are strong wide plates, or flanges, welded to the axletrees and firmly secured to the bedframe with the bolts *d d*. *e e* are edge views of strong iron straps, which confine the braces C C to the axletrees. Said straps are secured by nuts, shown by *b b* in Fig. 5. *f f* are bolts which secure the angles of the top of the derrick. *g g* are nuts and strap which secure the staple G to the top of the derrick.

Fig. 3: A A A A A is the bedframe, aforesaid. B is a cog wheel on the shaft of the windlass. C is a drum, (see K Fig. 1,) around which is coiled the rope shown by J J in Fig. 1. D is a ratchet on the end of the drum C. E E are cranks. F F is a shaft extending across the bedframe. *a a a a* are bolts passing through the bedframe and the plates or flanges, aforesaid, permanently uniting them as one. *b b b b* are bolts and caps forming the journals of the shaft F. *c c c c* are bolts which secure the tongue to the bedframe. *d* is a screw bolt which secures the washer *g* to the shaft F. *e* is a pin, shown by *a* in Fig. 1. *f* is a pawl, which, when the aforesaid machine is in operation, solely by the operators at the cranks, catches into the ratchet D and prevents the rope aforesaid from unwinding from the drum C.

Fig. 4. A A is a front view of the derrick. B is a shaft shown also at E in Fig. 1. C is a cog wheel of larger diameter than B in Fig. 3. D is a ratchet wheel on the shaft B of a smaller diameter than the cog wheel C aforesaid—cast with and forming a part of said wheel C; E is a pawl which prevents the windlass from reacting when in operation. *a*, *a*, *a*, *a* are bolts and straps which

combine the derrick, &c. (see *f*, *f*, &c., Fig. 2.) *b*, *b*, *b*, *b* are bolts and caps which form the journals of the shaft B.

Fig. 5. A is a side view of a strong iron brace—seen at C in Fig. 2. B is a strap, also shown by *e*, *e* in Fig. 2. *a*, *a*, *a*, *a* are bolts which secure the brace A to the derrick and bed frame. *b*, *b* are nuts which confine the braces, by means of the strap B, to the axletree, &c., aforesaid.

Fig. 6: A is that portion of the axletree on which the wheel revolves. B is the strap shown and described by C in Fig. 2 and by B in Fig. 5. C C is the plate or flange shown also by *c c* in Fig. 2. D is a washer. E is a nut which needs no specification. *a a* are bolts which secure the strap B, &c. *b b* are bolts which secure the plates or flanges aforesaid to the bedframe and which are noted by *d d* in Fig. 2.

Operation: The above parts of the aforesaid stone digger being put together in its proper construction and connection, as herein described, and particularly shown by Fig. 1, the said machine placed in its proper position for operation as also shown by Fig. 1, the operation and novelty aforesaid may then be noted, by fastening the chain to the stone, in the ordinary manner, or by drilling shallow holes into the stone aforesaid, and hooking the points of the hooks on said chain into them. Attach all or a portion of the team to the rope aforesaid, (at L in Fig. 1) to assist the operators at the cranks of the windlass. Thus by the exertions of the operators in conjunction with the power of the team, a massive stone may be raised from its bed, and when raised, is loaded to be transported to any desired locality. When the stone aforesaid is hoisted from its bed and held by the windlass—the team released from the rope. Said rope may then be recoiled around the drum, by removing the pins aforesaid as shown at *a* in Fig. 1.

Non-confinement: I do not confine myself in the aforesaid invention and specification to any particular size of bed frame—to any particular height of derrick—to any particular size of tackle block, single or compound—to any size of axletree or windlass—or even to the raising of stones as aforesaid and removing them from their beds, without digging and blasting in the ordinary manner. Said invention may be used for removing stones in any practical locality and position for the building of walls and for other useful purposes.

What I claim as my invention, and desire to secure by Letters Patent, is—

The construction of an axletree for "stone-digger"—in combination with the bedframe and derrick—substantially, and for the purposes, and as set forth in the specification.

SOLOMON E. BOLLES.

Witnesses:
JNO. DAVIS,
WALTER TABER.

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