

B. OHMAN.  
TAMPING MACHINE.  
APPLICATION FILED NOV. 10, 1911.

1,043,245.

Patented Nov. 5, 1912.

3 SHEETS—SHEET 1.

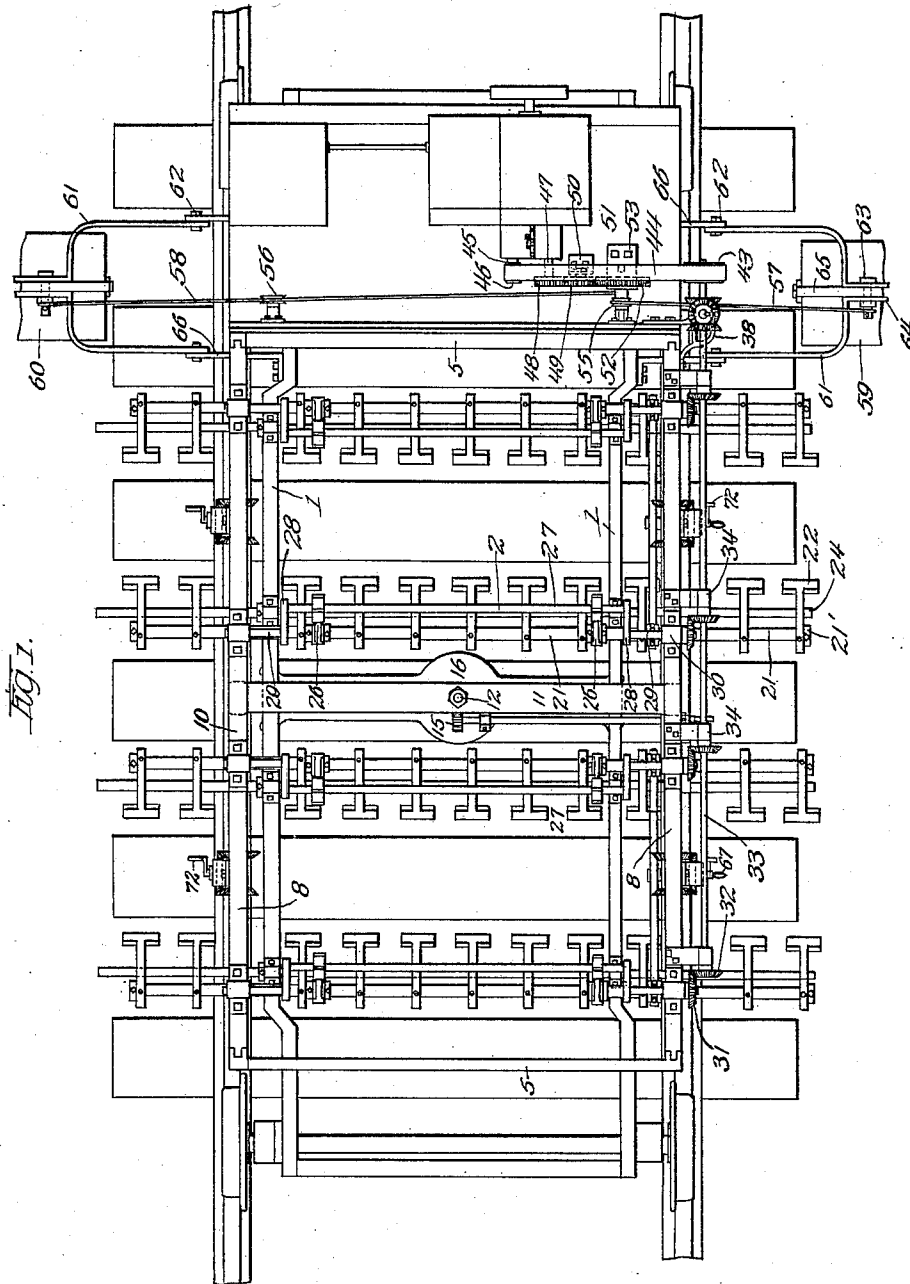


Fig. 1.

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A. L. Walcott

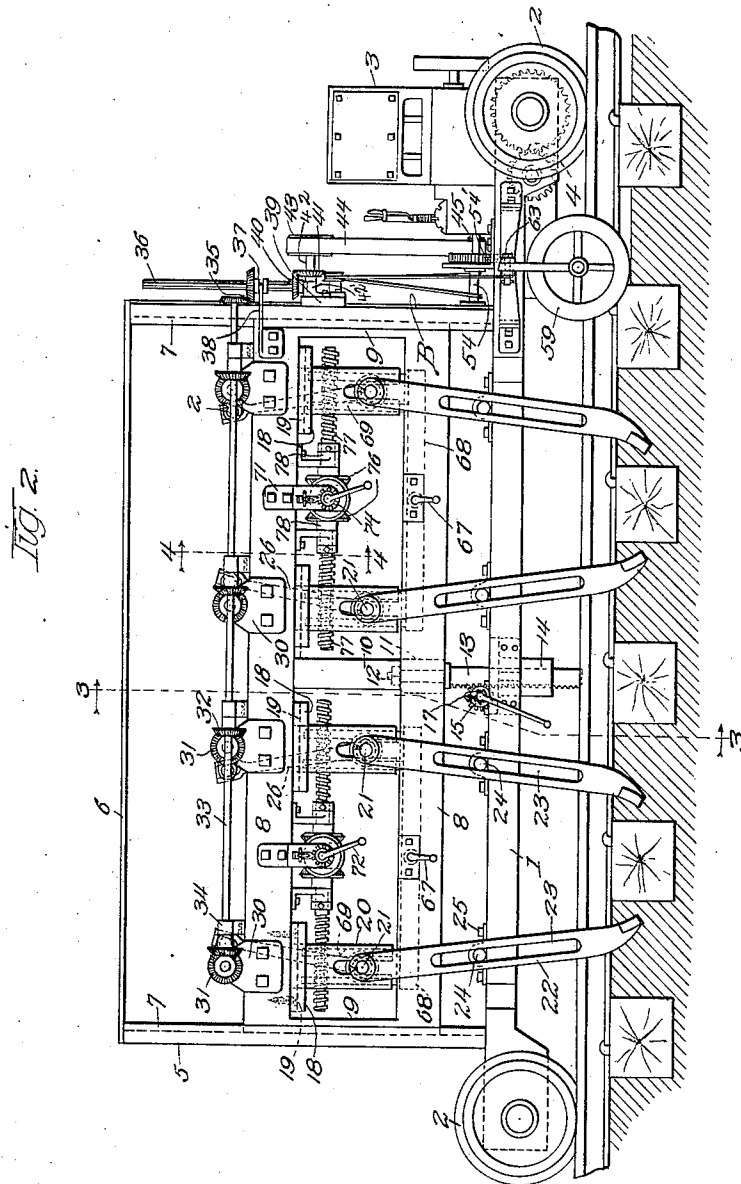
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3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

Fig. 3.

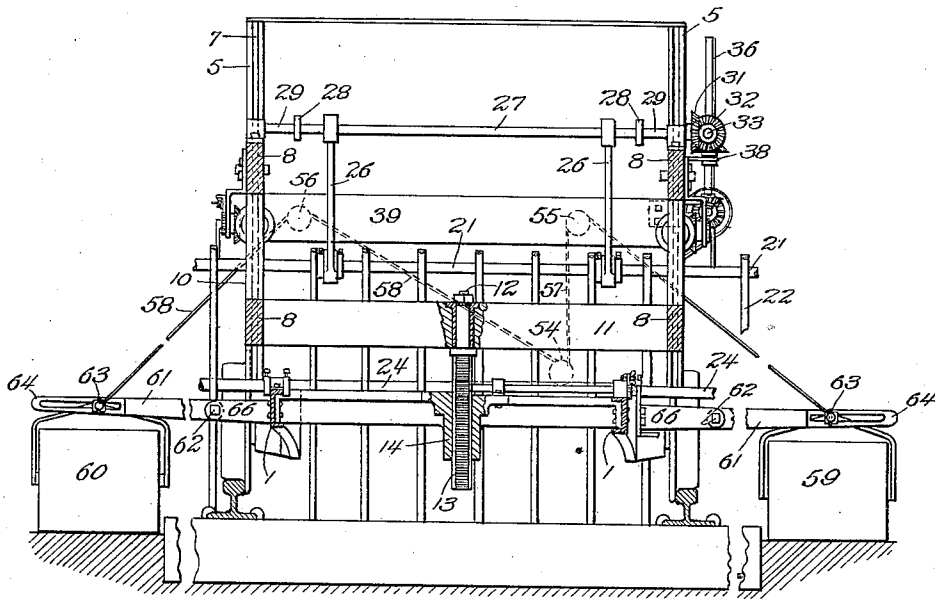
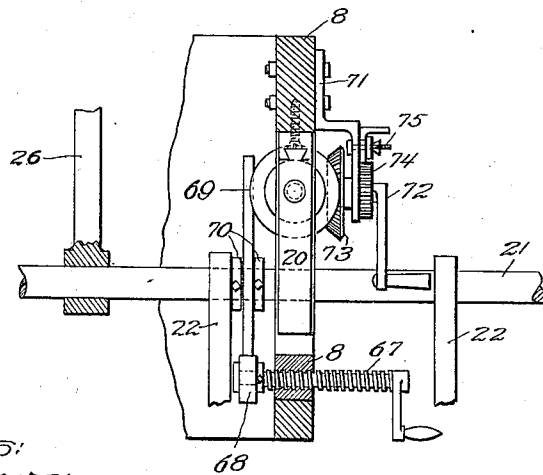


Fig. 4.



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# UNITED STATES PATENT OFFICE.

BERTIL OHMAN, OF CARDSTON, ALBERTA, CANADA.

## TAMPING-MACHINE.

1,043,245.

Specification of Letters Patent.

Patented Nov. 5, 1912.

Application filed November 10, 1911. Serial No. 659,645.

*To all whom it may concern:*

Be it known that I, BERTIL OHMAN, a citizen of Sweden, residing at Cardston, in the Province of Alberta, in the Dominion of Canada, have invented certain new and useful Improvements in Tamping-Machines, of which the following is a specification.

This invention relates to improvements in tamping machines and has reference to the employment of plungers arranged in pairs upon shafts which are capable of limiting movement in a plane at right angles to the plane of the plungers and which shafts are supported from a frame capable of movement in a vertical plane; means for regulating the distance between the ends of the plungers of any pair or set are also provided; and the invention includes certain constructions and arrangements of parts as will be hereinafter fully described in the following specification, pointed out in the claims and illustrated in the accompanying drawings which form a part of the specification and in which—

Figure 1 is a plan of my improved tamping machine. Fig. 2 is a side elevation. Fig. 3 is a vertical section taken on line 3—3 of Fig. 2. Fig. 4 is a section taken on line 4—4 of Fig. 2.

Like reference characters indicate corresponding parts throughout the several views.

1 is the base, mounted upon wheels 2, upon which my machine is carried. Upon one end of the base I provide a suitable engine 3 which furnishes power for operating the machine and for propelling the truck from place to place, the latter operation being effected through the medium of suitable transmission mechanism 4. Upon the base I provide an upright frame composed of vertical members 5 and connecting tie brace 6, the members 5 being rabbeted as at 7 for the retention in operative position of an inner frame formed of parallel horizontal members 8—8 connected by vertical end members 9—9, the horizontal members being braced by connecting beam 10.

11 is a transverse beam having its ends connected to the horizontal lower inner-frame members 8 pierced by a king bolt 12 to the lower extremity of which is secured a vertically disposed rack 13 that extends through bolster 14.

15 is a hand gear, disposed upon table 16 for engagement with the rack 13 by which

the same, and consequently the inner-frame, is raised or lowered vertically as desired. A dog 17 arranged upon the hand gear is adapted to lock the rack at any desired position.

18 is a guide rabbeted as at 19 for the reception of a bifurcated traveling block 20 between the prongs of which is movably retained one extremity of the plunger shaft 21, provided with a collar 21', the other extremity of the shaft being similarly retained in the bifurcated end of the traveling block directly opposite upon the other side of the machine; 22 is the tamper or plunger secured upon the shaft 21 and slotted longitudinally as at 23 to receive one end of a guide shaft 24 journaled in a box 25 and extending from side to side of the base 1. Near either end of the plunger shaft 21 a crank arm 26 is secured which extends up and is connected to the crank shaft 27 which is connected to a counter shaft 29 offset at 28, the said counter-shaft being journaled in a box 30 fastened to the top face of the top inner-frame member 8.

All the shafts 29 are arranged upon one side of the machine as shown in Fig. 1 and are provided with gears 31 that mesh with gears 32 arranged upon the longitudinal drive shaft 33 journaled in boxes 34 secured upon the last named member 8. The offset 28 causes a reciprocating motion of the plunger shafts to which they are connected by means of the crank arm and consequently this reciprocating motion is imparted to the plungers arranged upon the plunger shafts. The power shaft 33 extends almost from end to end of the machine just above the horizontal plane of the top inner-frame member 8 and at one end is gear-connected as at 35 with a vertical shaft 36, the connecting gear of which shaft 36 is feathered thereon in order that it may be movable vertically upon the said shaft and the said connecting gear is further provided with a collar 37 likewise feather-engaged by the said shaft and slidable thereupon and adapted to be retained in any preferred position by a fork 38 secured to the top inner-frame member 8. The shaft 36 is vertically disposed upon a bracket secured to a transverse member 39 that connects the uprights 5 and the said shaft is provided with a terminal gear 40 made fast thereon that meshes with a gear 41 arranged on a stub shaft 42 also journaled in the bracket 42' arranged upon

the transverse member 39. The shaft 42 is provided with a pulley 43 that carries a belt 44 that also engages a pulley 45 on the engine shaft 46. 47 is another engine shaft provided with a gear 48 that meshes with a gear 49, journaled in a suitable bracket 50 secured to the platform 51 of the base, that meshes with a gear 52 journaled in a bracket 53 likewise fastened upon the platform 51 and in which latter bracket one axis of a drum 54, provided with a suitable detent 54', is journaled, the other axis being mounted in a suitable box secured to the end piece B of the frame.

55 and 56 are a pair of sheaves journaled in the transverse member 39 and over which cables 57 and 58, respectively, pass. One end of either cable 57, 58 is secured to the drum 54 while the opposite end of either cable is secured to a bolt 63 that extends through a slotted base-prolongation 64 of a substantially U-shaped yoke 61 and also engages a roller frame 65 that carries a roller 59 or 60; the said yoke 61 being pivotally secured as at 62 to arms 66 which are secured to the base 1 of the machine. The purpose of the rollers 59, 60 is to level and make compact the tamped filling as illustrated in Fig. 2 and their connections are such that when power from the engine is used to rotate the shaft of the drum 54, through its connections, in one direction both cables will be wound upon that drum thus raising both rollers off the ground in order that the machine may be moved from a place that has been operated upon by the said rollers to a place about to be operated upon by them when a reverse movement of the drum 54 will again lower the rollers for use.

Means for moving any set of plungers laterally are provided and consist in a worm 67 operable through the lower inner-frame member 8 and connected to a connecting member 68 lying parallel with the said member 8 and provided at either end with a pair of parallel upright arms 69 that pass on opposite sides of one of the plunger shafts 21 and between collars 70 on that shaft. By turning the worm 67 to the right it will force the shaft 68 away from the adjacent inner-frame member 8 thus causing the arm 69 to press against one of the collars 70 and impart a lateral motion to the plunger shaft 21 thus bringing the plungers on one side of the car nearer to the frame 1 and a set of plungers directly opposite on the same shafts away from the machine. By reversing the movement of the worm 67 a reverse lateral movement will naturally be imparted to the shaft 21. This arrangement enables the operator to tamp the road bed laterally or in a plane parallel with the rail ties.

71 is a bracket-box secured to and depending from the top inner-frame member 8 in which is journaled the shaft 72 of a hand

gear 73 and on this shaft is mounted a ratchet 74 adapted for locking engagement with a dog 75 whereby rotation of the shaft 72 is prevented. Hand gear 73 meshes with a pair of opposed gears 76 each of which is provided with a worm shaft 77 journaled in bracket-collars 78 depending from and secured to the top inner-frame member 8, each of which is threaded in one of the traveling blocks 20. By rotating the hand gear 73 in one direction the worm shafts will cause the traveling blocks 20 to move away from each other thus increasing the distance between the plungers 22 and by rotating the said hand gear in the opposite direction the said plungers will be brought closer together. The purpose of this arrangement is to enable each plunger to operate over the entire intervening space between a pair of rail ties.

What is claimed is:—

1. The combination with a wheeled base and an engine disposed upon that base, of a vertically rabbeted frame mounted on said base, an inner frame slidably engaging the first named frame, a centrally disposed rack secured to said inner frame and supporting the same, traveling blocks suitably mounted in said inner frame, plunger shafts mounted in said traveling blocks adapted for reciprocating movement, a longitudinal power shaft, transmission mechanism connecting the said power shaft and plunger shafts, transmission mechanism connecting the aforesaid engine and the said power shaft and plungers terminally carried by the said plunger shafts.

2. The combination with a wheeled base and an engine disposed upon that base, of a vertically rabbeted frame mounted on said base, an inner frame slidably engaging the first named frame, a centrally disposed rack secured to said inner frame and supporting the same, bifurcated traveling blocks suitably mounted in said inner frame, reciprocating plunger shafts mounted in said traveling blocks, plungers terminally carried upon said plunger shafts, a longitudinal power shaft, transmission mechanism connecting the said power shaft and plunger shafts, transmission mechanism connecting the aforesaid engine and the said power shaft and manually operable means carried by the said inner frame and connected to the said plunger shafts for moving the latter laterally.

3. The combination with a wheeled base and an engine disposed upon that base, of a vertically rabbeted frame mounted on said base, an inner frame slidably mounted in the first named frame, a centrally disposed rack secured to said inner frame and supporting the same, bifurcated traveling blocks suitably mounted in said inner frame, reciprocating plunger shafts mounted in said traveling blocks, plungers terminally carried

upon said plunger shafts, a longitudinal power shaft, transmission mechanism connecting the said power shaft and the said plunger shafts, transmission mechanism 5 connecting the aforesaid engine and the said power shaft, manually operable means carried by the said inner frame and connected to the said plunger shafts for moving the latter laterally and manually operable means 10 connected to the said inner shaft and to the aforesaid traveling blocks for moving the latter longitudinally.

4. The combination with a wheeled base and an engine disposed upon that base, of a 15 vertically rabbeted frame mounted on said base, an inner frame slidably mounted in the first named frame, a centrally disposed rack secured to said inner frame and supporting the same, bifurcated traveling blocks suitably mounted in said inner frame, reciprocating plunger shafts mounted in said traveling blocks, longitudinally slotted plungers 20 terminally carried by said plunger shafts, guide shafts extending transversely of the wheeled base engaging the said longitudi-

nally slotted plungers, a longitudinal power shaft, transmission mechanism connecting the said power shaft and the said reciprocating plunger shafts, transmission mechanism 30 connecting the aforesaid engine and the said power shaft, manually operable means carried by the said inner frame and connected to the said reciprocating plunger shafts for moving the latter laterally, manually operable means secured to the said inner 35 frame and to the aforesaid traveling blocks for moving the latter longitudinally, oppositely disposed rollers pivotally connected to the said wheeled frame and transmission mechanism connecting the aforesaid engine 40 and the said rollers.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two subscribing witnesses.

BERTIL OHMAN.

Witnesses:

ADELBERT CAZIER,  
ZEBULON WILLIAM JACOBS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."