A. J. POWERS.

FINISHING MACHINE.

APPLICATION FILED MAY 28, 1913.

1,102,435. Patented July 7, 1914.

2 SHEETS—SHEET 1.

Fig. 1.

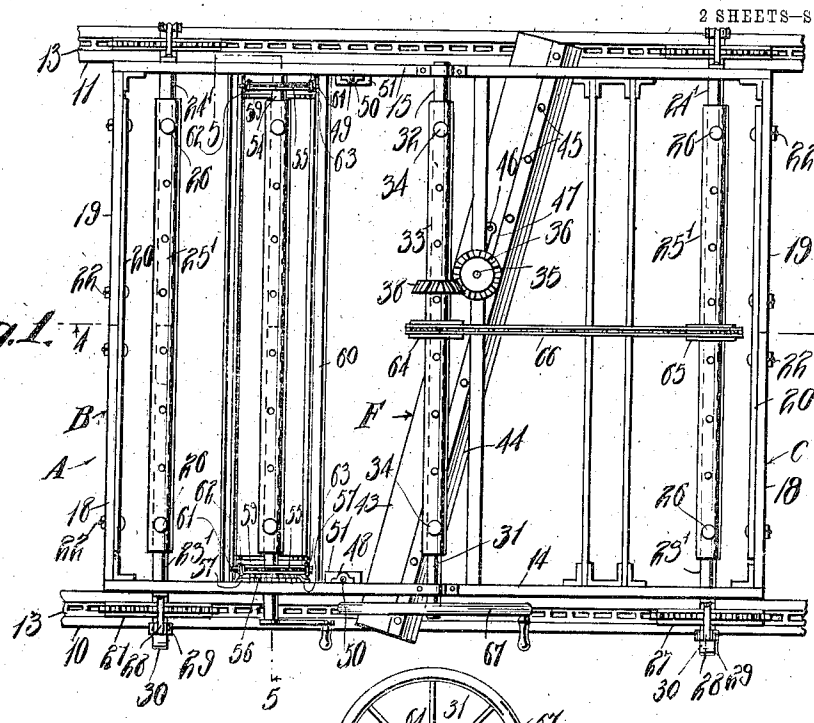


Fig. 2.

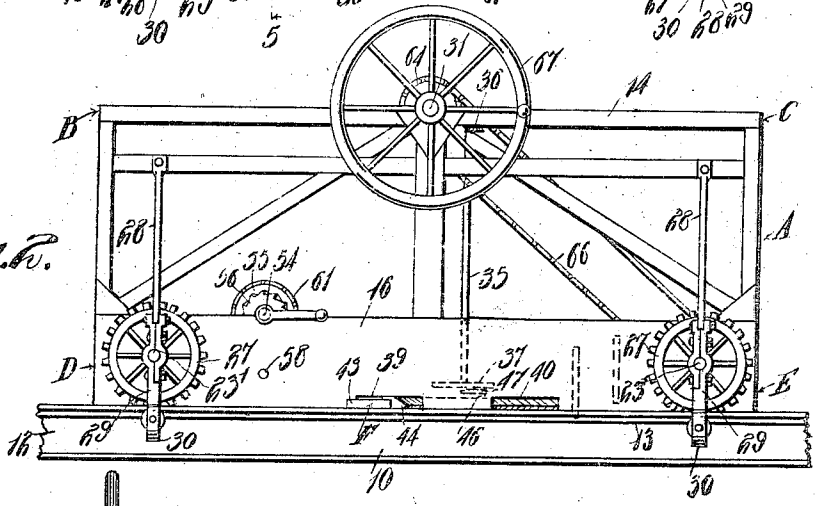
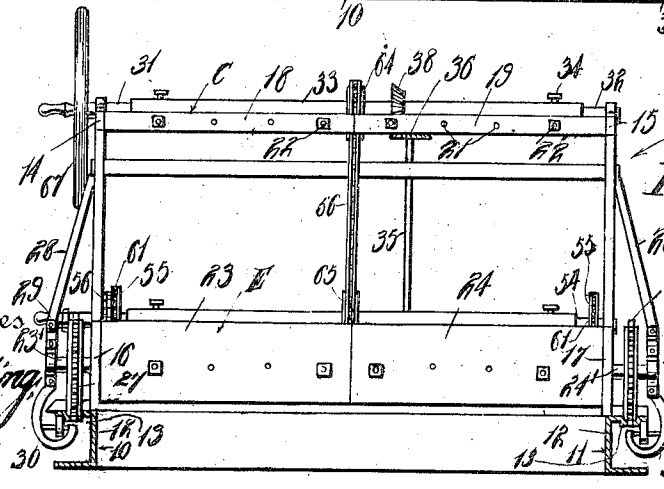


Fig. 3.



Witnesses

M. C. Fielding

Henry J. Bright

Inventor

A. J. Powers,

By Edwards Brandle

Attorneys

A. J. POWERS.

FINISHING MACHINE.

APPLICATION FILED MAY 28, 1913.

1,102,435.

Patented July 7, 1914.

2 SHEETS—SHEET 2.

Fig. 4.

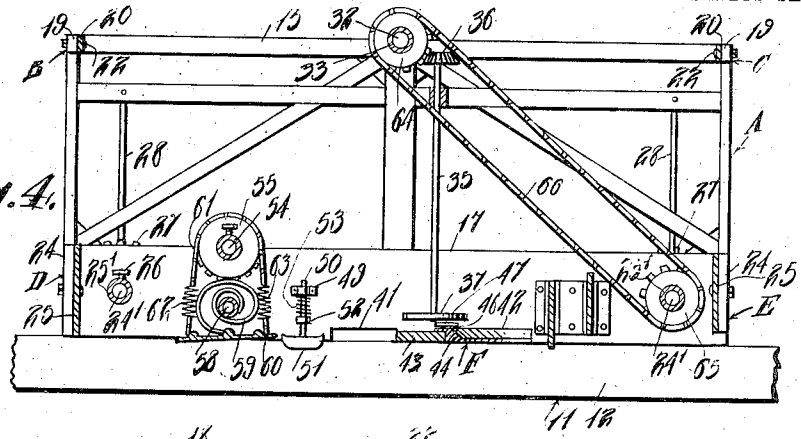


Fig. 5.

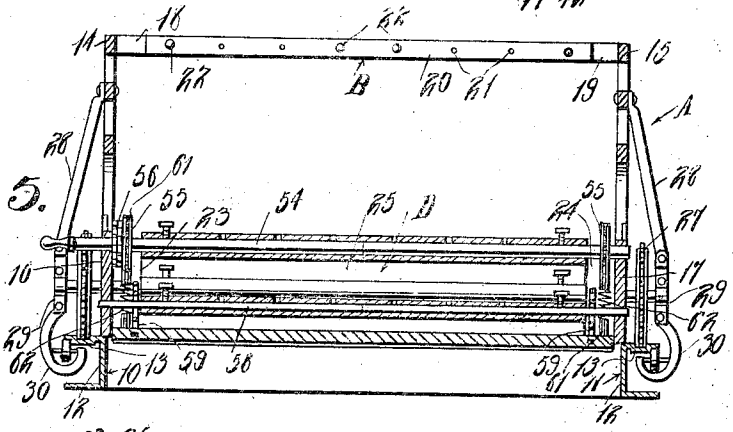


Fig. 6.

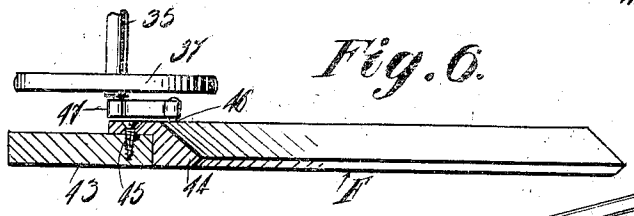


Fig. 7.

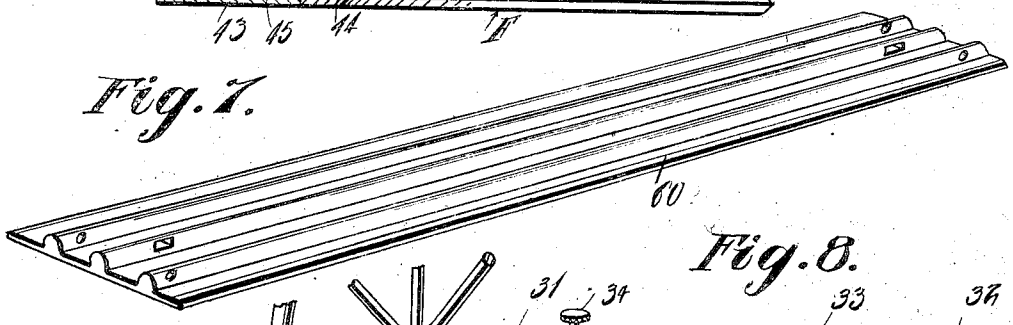
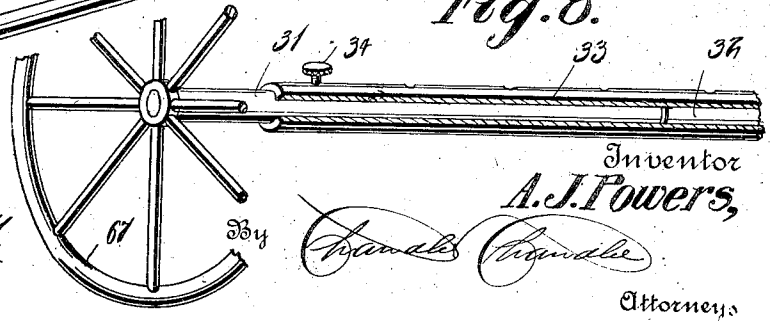


Fig. 8.



Witnesses

W. C. Fielding

Henry T. Burgess

Inventor

A. J. Powers,

By Thomas & Thomas

Attorneys.

UNITED STATES PATENT OFFICE.

ANTHONY J. POWERS, OF MERIDIAN, MISSISSIPPI.

FINISHING-MACHINE.

1,102,435. Specification of Letters Patent. Patented July 7, 1914.

Application filed May 28, 1913. Serial No. 770,492.

To all whom it may concern:

Be it known that I, ANTHONY J. POWERS, a citizen of the United States, residing at Meridian, in the county of Lauderdale, State of Mississippi, have invented certain new and useful Improvements in Finishing-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to finishing machines for use in the construction of concrete pavement and walks.

The object of the invention resides in the provision of a machine of the character named which is adapted to be supported by and travel upon the side members of a concrete walk form and which includes mechanism operable during movement of the machine for smoothing and finishing the upper surface of the walk.

A further object of the invention resides in the provision of a machine of the character named which can be operated with great rapidity so that a resultant saving in time and labor will be had.

A still further object of the invention resides in the provision of a machine for finishing the upper surface of concrete walks which will be simple in construction, efficient in use, and which may be manufactured at a comparatively small cost.

With the above and other objects in view the invention consists in the details of construction and in the arrangement and combination of parts to be hereinafter more fully described and particularly pointed out in the appended claims.

In describing the invention in detail reference will be had to the accompanying drawings wherein like characters of reference denote corresponding parts in the several views, and in which—

Figure 1 is a plan view of a machine constructed in accordance with the invention; Fig. 2, a side elevation of same; Fig. 3, an end view; Fig. 4, a section on the line 4—4 of Fig. 1; Fig. 5, a section on the line 5—5 of Fig. 1, Fig. 6, an enlarged transverse section through the floater; Fig. 7, a perspective view of the trowel, and Fig. 8, a fragmental perspective view of the operating shaft.

Referring to the drawings 10 and 11 indicate the side members of a concrete pavement form and upon which the machine is adapted to travel during its operation. These side members 10 and 11 are constructed of angle iron and which includes an outwardly directed upper flange 12 provided with a longitudinal groove 13.

The machine is shown as comprising a frame A which includes upper side members 14 and 15, and lower side members 16 and 17. The frame A further includes upper end members B and C each of which is formed of sections 18 and 19 which are connected together by a plate 20. These sections 18 and 19 and the plate 20 are provided with a plurality of openings 21 certain of which are adapted to register as the sections 18 and 19 are moved longitudinally of the plate so as to permit the insertion of bolts 22 therethrough to secure the sections and plate together. The frame A also embodies lower end members D and E each of which comprises sections 23 and 24 secured by a plate 25 in a manner similar to the connection between the sections 18 and 19 of the upper end members B and C. By this construction it will be apparent that the width of the frame A may be varied so as to meet requirements and conditions.

The frame A is supported upon a pair of axles journaled in the lower side members 16 and 17. Each of these axles comprises sections 23′ and 24′ which are slidably mounted in a sleeve 25′ whereby the axles may be varied in length so as to conform to variations in the width of the frame A. Mounted in each sleeve 25′ is a plurality of set screws 26 for the purpose of locking the axle sections 23′ and 24′ against movement and thus maintaining the axle a given length. Fixed on the outer ends of each of the sections 23′ and 24′ is a toothed wheel 27 which engage respectively in the grooves 13 of the side members 10 and 11 of the form. Extending laterally and downwardly from each side of the frame A in the vertical plane of each of said axles are arms 28 to the outer end of which are secured respectively U-shaped guide members 29 which rotatably receive the end of the adjacent axle section and are disposed in embracing relation to the flanges 12 of the side members of the form.

Rotatably mounted in each guide member 29 is a roller 30 which engages the under side

of respective flanges 12. These members 29 serve to hold the machine against upward movement during the operation of same as will be apparent. Journaled in suitable brackets on the upper sides 14 and 15 is an operating shaft which comprises sections 31 and 32 slidably mounted in a sleeve 33. A plurality of set screws 34 are carried by the sleeve 33 and are adapted to engage the sections 31 and 32 so as to lock the shaft sections against longitudinal movement in the sleeve 33. By this construction it will be apparent that the operating shaft can be lengthened and shortened so as to conform to variations in the width of the frame A. Journaled in the frame A is a vertical shaft 35 which has fixed on its upper end a toothed gear 36 and on its lower end a disk 37. The gear 36 meshes with a beveled gear 38 fixed on the sleeve 33 so that upon rotation of the operating shaft a corresponding rotation of the shaft 35 will be produced. The lower side member 16 is provided with openings 39 and 40, while the lower side member 17 is provided with openings 41 and 42. Adapted to be interchangeably engaged in these openings 39, 40, 41 and 42 are the terminals of a floater F which includes a body portion 43 constructed preferably of wood and a front facing 44 constructed of steel and secured to the body 43 through the medium of screws 45. Rising from the upper side of the body 43 of the floater F is a pin 46 which has fixed on its upper end a lateral arm 47. The free end of this lateral arm 47 is eccentrically pivoted to the under side of the disk 37 so that as the shaft 35 is rotated the floater F will be moved both longitudinally and transversely of the frame A. By interchangeably inserting the terminals of the floater F in the openings 39, 40, 41 and 42 it will be apparent that the angular disposition of the floater with respect to the longitudinal axis of the machine may be changed. Formed on the inner side of the lower side members 16 and 17 at the rear of the openings 39 and 41 are vertically alined eyes 48 and 49 respectively and slidably mounted in the eyes 48 and 49 are rods 50 which terminate at their lower ends respectively in edge tools 51. Formed on each rod 50 is a flange 52 and encircling each rod between the flange 52 and the eye 48 is a spring 53 which constantly tends to move the rod 50 and edge tool 51 downwardly. Journaled between the side members 16 and 17 at the rear of the edge tool 51 is a shaft 54 which has mounted on each end thereof a sprocket wheel 55. Also fixed on the shaft 54 between the sprocket wheel 55 and the side member 16 is a double ratchet wheel 56 with the teeth of which pawls 57 mounted on the side member 17 are adapted to coöperate and lock the shaft 54 against rotation in either direction. Mounted in the side members 16 and 17 directly beneath the shaft 54 is a rod 58, which carries at each end a coil spring 59 one end of which is secured to said rod and the other end to a trowel 60 disposed transversely of the frame. It will be apparent that through the medium of the coil springs 59 the trowel 60 is yieldingly supported so as to properly operate upon the material as the machine moves. Engaged with each of the sprocket wheels 55 is a sprocket chain 61, the terminals of said chain being secured to opposite ends of the trowel 60 and said chain further having included therein springs 62 and 63. By rotating the shaft 54 it will be apparent that either end of the trowel 60 may be slightly elevated and yieldingly held in such elevated position by either the springs 62 or 63. It will be noted that both the shaft 54 and rod 58 are capable of being adjusted so as to vary the length thereof to conform with variations in the width of the machine.

Fixed on the sleeve 33 is a sprocket wheel 64 which is connected to a sprocket wheel 55 fixed on the sleeve 25 of one of the axles of the machine by a sprocket chain 66. The section 32 of the operating shaft has fixed thereon just outwardly of the upper side member 14 a hand wheel 67 through the medium of which the operating shaft may be conveniently rotated. It will be noted that not only will the rotation of the operating shaft impart an irregular movement to the floater F but such rotation will also effect the propulsion of the machine by reason of the connection of said shaft with one of the axles. As the operating shaft is operated through the medium of the pawl 57 the propulsion of the machine will be effected and at the same time the floater F will be operated to impart an initial smoothness to the material. As the machine moves along the edging tools 51 will smooth the extreme edges of the material and then the latter will be operated upon by the trowel 60 to impart a final smoothness to the upper surface thereof.

What I claim is:—

1. In a machine of the class described, the combination of a wheeled frame, a floater mounted on said frame for movement transversely and longitudinally of the frame, an operating shaft rotatably mounted on the frame, a vertical shaft rotatably mounted on the frame and operatively connected to the operating shaft, a disk fixed on the lower end of the vertical shaft for rotation therewith, a link connecting said disk and the floater whereby rotation of the disk will move the floater both transversely and longitudinally of the frame, and means for propelling the frame.

2. In a machine of the class described, the combination of a wheeled frame, means for propelling said frame, a floater movably supported by said frame, connection between

the floater and the propelling means for operating the former during the travel of the frame, yielding edge tools supported by the frame in the rear of the floater, a yieldingly supported trowel at the rear of said edge tools, and means for raising either edge of said trowel.

In testimony whereof, I affix my signature, in the presence of two witnesses.

ANTHONY J. POWERS.

Witnesses:
E. McMorries,
Walker Broach.