Aug. 18, 1925. 1,550,027

C. J. HUG

FINISHING MACHINE

Filed Dec. 22, 1921 3 Sheets-Sheet 1

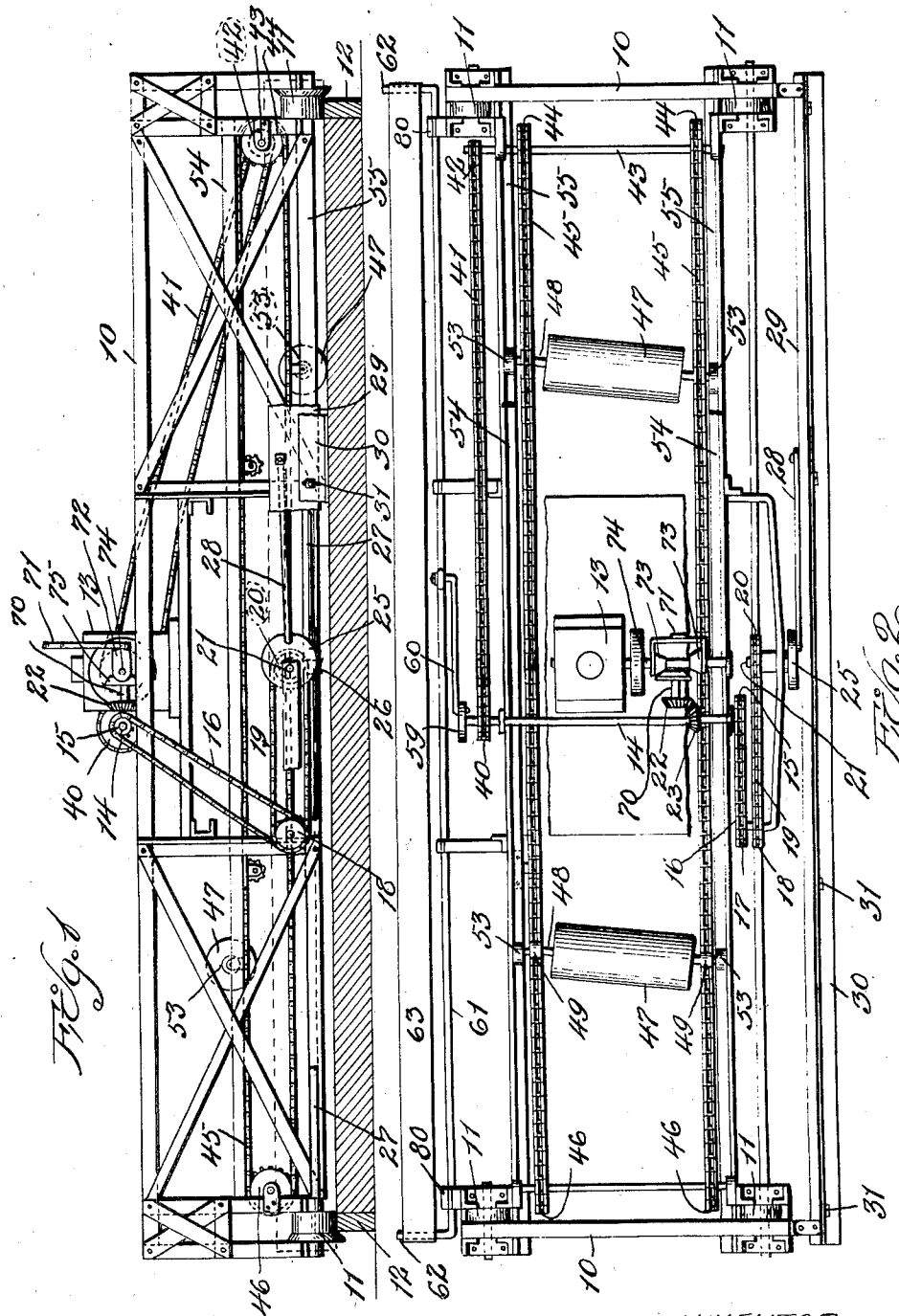


Fig. 1

Fig. 2

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Fig. 3

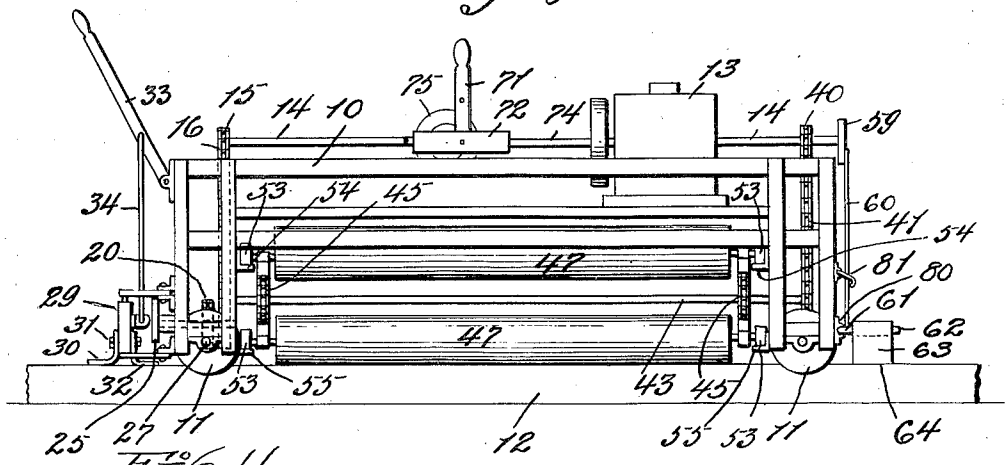


Fig. 4

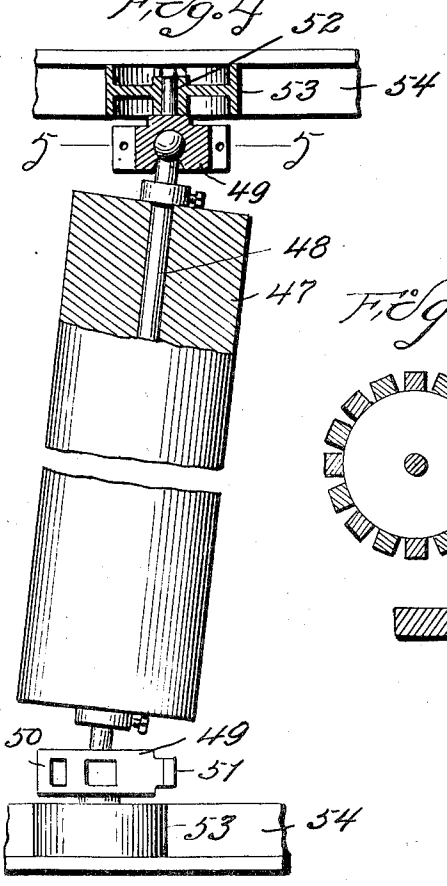


Fig. 5

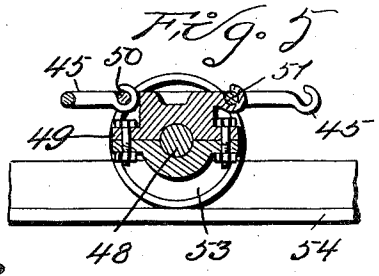


Fig. 6

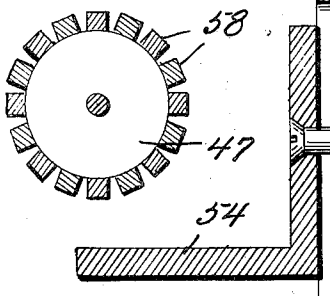


Fig. 7

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FINISHING MACHINE

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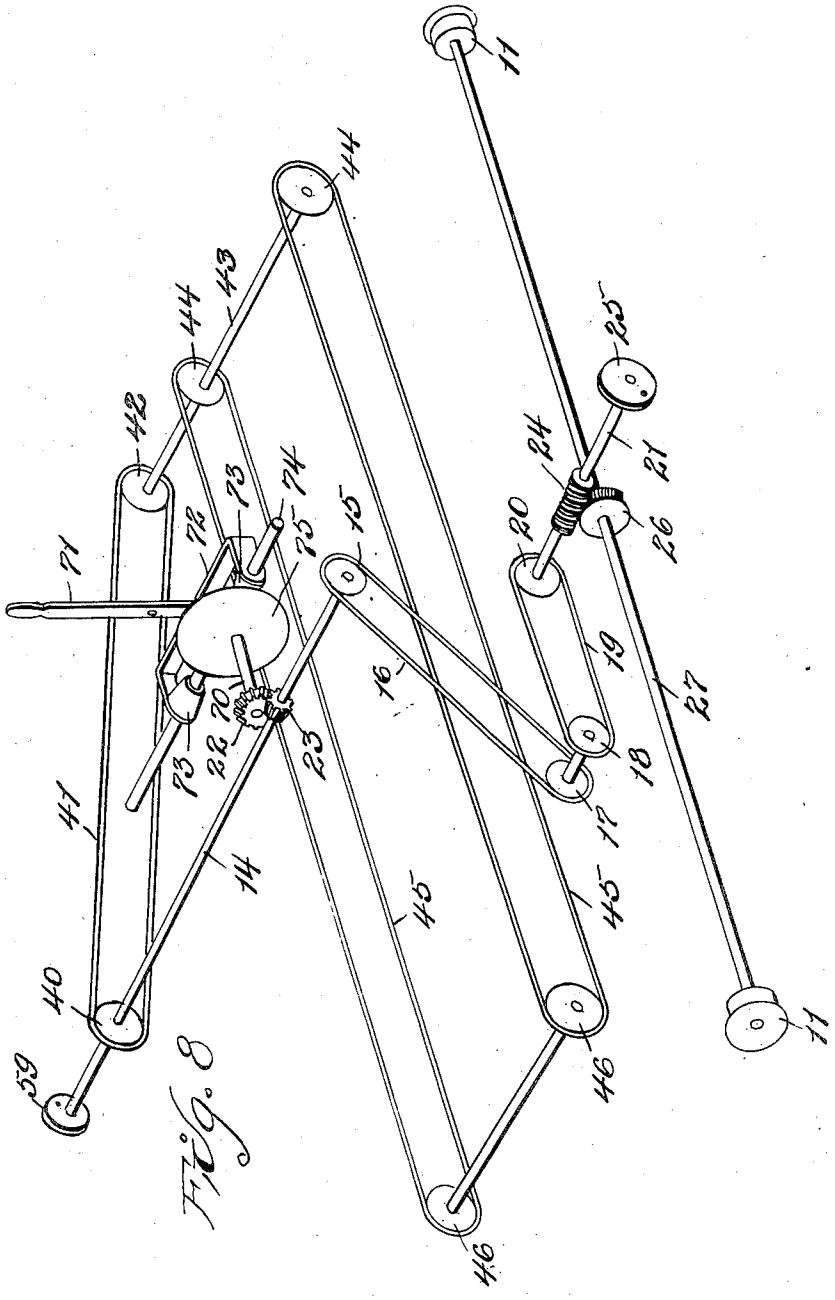


Fig. 8

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Patented Aug. 18, 1925. 1,550,027

UNITED STATES PATENT OFFICE.

CHRISTIAN J. HUG, OF HIGHLAND, ILLINOIS, ASSIGNOR TO THE HUG COMPANY, OF HIGHLAND, ILLINOIS, A CORPORATION OF ILLINOIS.

FINISHING MACHINE.

Application filed December 22, 1921. Serial No. 524,109.

To all whom it may concern:

Be it known that I, CHRISTIAN J. HUG, a citizen of the United States, residing at Highland, in the county of Madison and State of Illinois, have invented certain new and useful Improvements in Finishing Machines, of which the following is a specification, reference being had therein to the accompanying drawing.

My invention relates to improvements in finishing machines for roadways of concrete or the like, and has for its objects to provide a traveling mechanism which embraces the several operations of scraping and smoothing or trowelling the road surface by horizontally reciprocated flexible blades, of rolling or tamping the scraped surface transversely of the path of the machine, and trowelling the rolled surface to produce a final finish by means of a reciprocating finishing member.

The traveling mechanism is adapted to be supported by and travel upon the kerb or edge-form between which the road foundation and superstructure has been deposited. The embodied mechanism is so constructed that either, any two, or all of the operations above outlined may be performed while the machine, which is self-propelled, is moving forwardly or backwardly or is at rest.

Other results incident to the operation and use of the machine of my invention will be disclosed by the appended description.

Drawings.

Fig. 1 is a front elevation of a machine embodying my invention, the strike-off board being removed except as to a fragment thereof.

Fig. 2 is a top plan view of the same.

Fig. 3 is a side elevation of the same.

Fig. 4 is an enlarged view partly in section of the roller-mounting employed therein.

Fig. 5 is an enlarged detail of the chain-mounting of said roller, taken in section on the line 5—5 of Fig. 4.

Fig. 6 is an end-view of the tamping member employed in my machine.

Fig. 7 is an enlarged sectional view of the track supporting the chain carrying the tamping-members.

Fig. 8 is a diagrammatic view illustrating the arrangement of the driving mechanism.

Description.

As illustrated, I employ a traveling frame 10 supported on wheels 11 resting on the kerbs or side-forms 12—12; the motive power is generated by the motor 13 actuating the tractor wheels 11 and the other mechanism through the jack-shaft or driving shaft 14, (driven by bevel-gears 22—23) power being transmitted to the wheels 11 through the sprocket 15, chain 16, sprockets 17—18 and chain 19 to the sprocket 20, thus driving the shaft 21, carrying the worm-gear 24 and the disc 25.

The gear-wheel 26 meshes with and is driven by the worm 24, and rotates the shaft 27 (on which said gear wheel 26 is fixed) on which the traction-wheels 11 are mounted.

The disc 25 actuates the rod 28 to reciprocate the strike-off board 29.

As shown in Fig. 3 the strike-off board 29 has on its outer face a flexible strike-off blade 30, made adjustable vertically, and removably attached to the board 29 by bolts 31. On its opposite face the strike-off board 29 has the trowelling blade 32, which is flexible, and whose lower face rests upon the surface of the pavement being worked. The strike-off board 29 is thrown into or out of operative position by the hand-lever 33 and connecting-rod 34. The strike-off board 29, thus mounted and equipped, serves to even off the pavement surface by the strike-off blade 30, and to trowel that surface by the blade 32.

The jack-shaft 14 has fixed upon it the sprocket 40, driving through the chain 41, the sprocket 42 on the shaft 43. Shaft 43 is equipped with the sprockets 44—44 whereby chains 45—45 are driven, the chains 45—45 being aligned by the sprockets 46—46.

The rolling or tamping members 47 are carried by the chains 45—45, whereon they are mounted by the means illustrated in Figs. 4 and 5, the axle 48 passing through the member 47 and having its terminals

swivelled in the bearing blocks 49 (see Fig. 4), the block 49 having flexible engagement at the points 50 and 51 (see Fig. 5) with the chain 45. The block 49 has the integral hub 52 whereon the wheel 53 is mounted, and the wheel 53 is arranged to ride alternately on the upper track 54 and the lower track 55, the relative positions of the tracks 54 and 55 being illustrated in Fig. 3, and their adjustable mounting, by means of bolts 56, and slots 57 in the vertical members of the frame 10, are shown in Fig. 7.

I have found it advantageous to have the member 47 formed as shown in Fig. 6, a series of ribs 58 being arranged as shown, to impact with their outer faces successively on the surface being worked.

The shaft 14 carries the disc 59 driving the rod 60 (see Fig. 2) to reciprocate the frame 61. That frame 61 has rather loosely suspended from its terminal arms 62 a float or strip of loosely hung flexible material 63 arranged to sag in contact with the street surface (said surface being indicated as 64 in Fig. 3) to the end that, being moved to and fro with the movement of the entire machine, and reciprocated transversely to the path of the machine by the horizontal movement of the frame 61, its contact with the street surface 64 will have a scouring or trowelling action thereon.

The bevel-gear 22 is mounted on the shaft 70, and its movement, and direction of movement, is controlled by the hand-lever 71, operating the reversible driving gear comprising the yoke 72, cones 73—73 slidably mounted on the engine shaft 74, and alternately having frictional engagement with the bevel-faced wheel 75 on the shaft 70.

Mode of operation

The rolling or tamping members 47 are set, as shown in Fig. 2, at an angle with relation to their path of travel, in order to work or tamp the street surface with a razor-like movement. The machine operates in either direction along the street or road, and its operations are (when driven with the strike-off board 29 in front) as follows:

The strike-off member 30 performs the usual function of striking-off inequalities or projections of the surface being worked.

Next, the trowelling blade 32 exerts its scouring or trowelling effect upon the surface.

Next, the rolling or tamping elements 47 travel across that surface transversely to pack or tamp the material of the pavement.

Finally, the float 63 trowels the rolled surface.

When the movement of the machine is reversed, the float 63 may be thrown out of contact with the road surface 64 by pulling up the terminals 62 (the frame 61 is hingedly mounted at the points 80) and engaging one of said terminals 62 with the hook 81. But the float 63 and other operative parts will perform their respective functions regardless of the direction of movement of the machine, the sequence of the several operations being immaterial.

Claims.

1. In a finishing machine the combination of a frame arranged to travel on kerbs; a reciprocating strike-off board adjustably mounted at the forward end of said frame; and a series of tamping elements arranged to travel transversely in one direction across the path of the machine.

2. A finishing machine comprising a frame; a strike-off board adjustably mounted at the front of said frame; a flexible strike-off blade secured to said strike-off board; a flexible trowelling blade mounted on the rear face of said strike-off board; and a series of tamping elements operatively mounted on said frame behind said strike-off board to travel across the path of travel of the finishing machine.

In testimony whereof I hereunto affix my signature.

CHRISTIAN J. HUG.