

(No Model.)

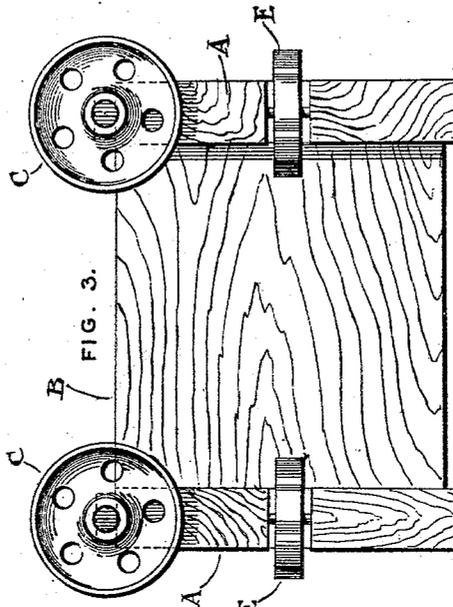
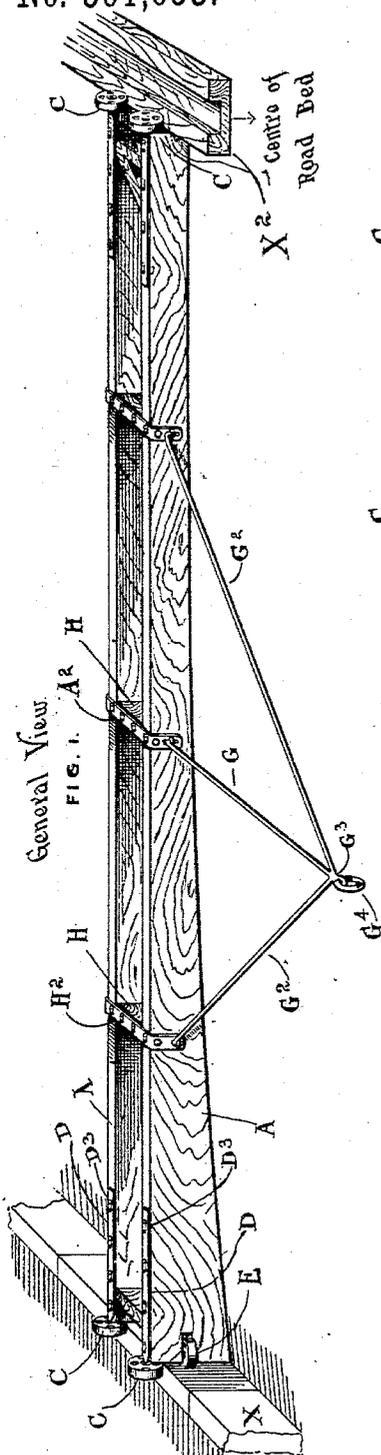
3 Sheets—Sheet 1.

D. A. WALKER.

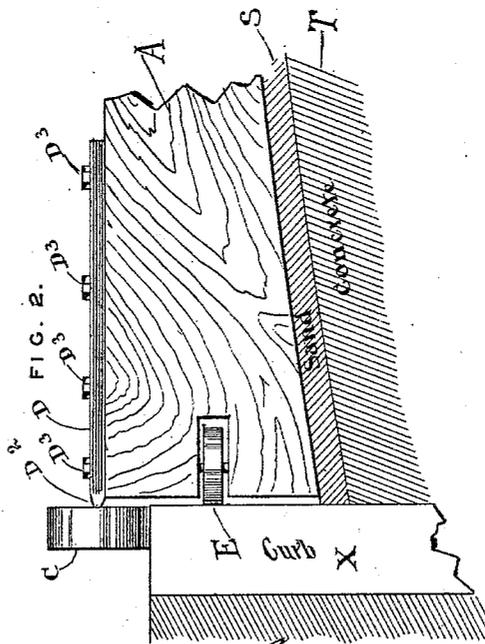
MACHINE FOR SHAPING SURFACES OF ROAD BEDS.

No. 561,633.

Patented June 9, 1896.



Plan of Ends.



Witnesses
 J. C. Lemon
 W. Smith.

Inventor
 David Addison Walker
 per Wm. Hubbell Fisher,
 Attorney

D. A. WALKER.

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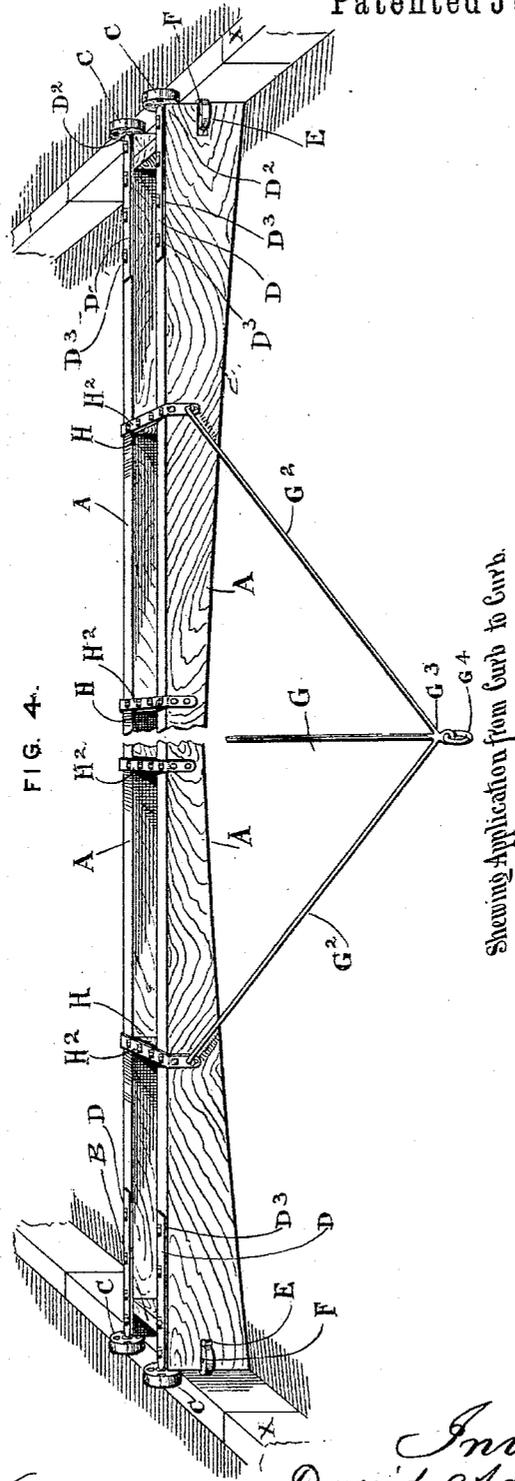


FIG. 4.

Showing Application from Curb to Curb.

Witnesses
 J. C. Lennon
 A. Smith

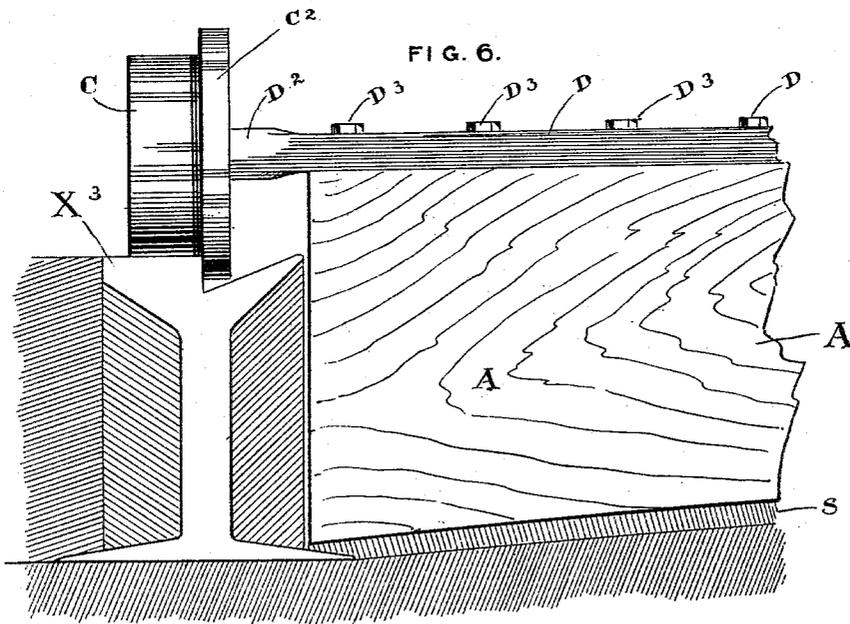
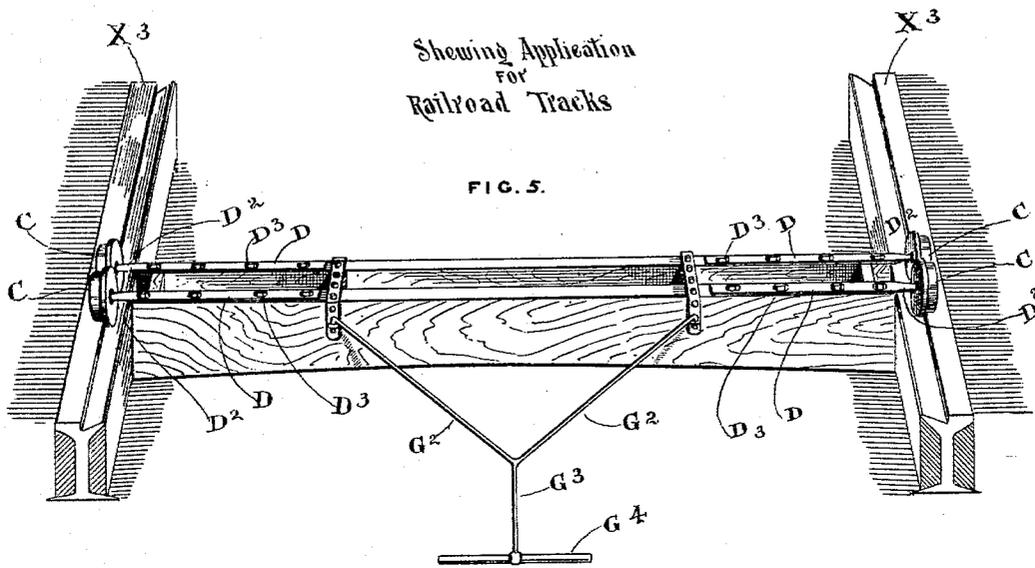
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UNITED STATES PATENT OFFICE.

DAVID ADDISON WALKER, OF CINCINNATI, OHIO.

MACHINE FOR SHAPING SURFACES OF ROAD-BEDS.

SPECIFICATION forming part of Letters Patent No. 561,633, dated June 9, 1896.

Application filed July 2, 1894. Serial No. 518,275. (No model.)

To all whom it may concern:

Be it known that I, DAVID ADDISON WALKER, a citizen of the United States, and a resident of the city of Cincinnati, in the county of Hamilton and State of Ohio, have invented a certain new and useful Machine for Shaping the Surface of Street-Beds and Road-Beds in the Process of Constructing the Street or Road, of which the following is a specification.

The several features of my invention and the various advantages resulting from their use, conjointly or otherwise, will be apparent from the following description and claims.

In the accompanying drawings, making a part of this application, and in which similar letters of reference indicate corresponding parts, Figure 1, Sheet 1, is a front view in perspective of a machine, illustrating my invention and adapted for use in a street from a curb to the middle (center) of the street. Fig. 2, same sheet, is an enlarged elevation of one end of the said machine and showing in section a part of a street-pavement in process of construction. Fig. 3, same sheet, is a plan or elevation of either one of the ends of the machine shown in Fig. 1. Fig. 4, Sheet 2, is a view in perspective of a machine embodying my invention and illustrating the application of my invention in a machine extending across the street from curb to curb. Fig. 5, Sheet 3, shows in perspective the mode in which my invention can be applied with the best advantage to form the road-bed between the railroad-tracks at the desired level and height. Fig. 6 is an enlarged view, partly in elevation, partly in section, and illustrating the mode in which my machine shown in Fig. 5 operates.

I will now more particularly describe my invention.

Where there are no tracks or rails in the street, the machine shown in Figs. 3 and 4 is the one preferred.

A and A² indicate parallel beams, located edge downward and united together near each end by the respective cross bridge-pieces B B. This structure A A B B is supported at each end on wheels or rollers C C, adapted to roll upon the top of the adjacent curb X. These wheels are suitably connected to the structure or forming part A A². The preferred means are the iron bars D, bolted as

shown at D³, the top of the beams A A² extending in the form of axles D² over the curb. On these axles, respectively, run the rollers C. 55

To avoid friction and to prevent the ends of the beams from scraping against the curbs, to which each is respectively adjacent, the horizontal rollers E are present, and each rotates on its vertical axle or spindle F. It will be understood that each roller projects somewhat beyond the adjacent end of the beam to which it is connected. 60

Means for the traction of the machine are provided. A preferred description of such means is shown, and consists of the mid-traction bar G, fastened to the beams A A at their mid-length, and the oblique traction bars or rods G² G², connected at their rear ends to their respective sides of the beams almost midway between the mid-length of the beam and the end of the latter. All of these bars G G² G² converge and are connected together at a point, as G³, at a distance in front of the beams A A. In Fig. 4 of the drawings the connection of the central traction to the beams is to be understood, because the beams are centrally broken away and approximated to bring their ends and the curbs of the street within the limits assigned for the drawing. 70 75 80

Between the end bridging B B intermediate bridging-pieces H are present between the beams A A, and iron straps, as H³, bolted to these bridging-pieces H and to the beams A A, substantially as shown, secure the beams and bridging firmly together in one compact whole. At the junction G³ of the traction-bars G G² G² is located a ring G⁴ or a handle. Traction-power is here applied. The lower edges or bottoms of the beams are shaped alike, and in the same plane at any given point on a line running parallel to the length of the street. The shape or contour of the bottoms of the beams A will correspond to that of the street to be made. Inasmuch as streets are ordinarily higher in the middle than at the curb the beams will usually be concave at their lower edge. The higher the crown of the street the more concave will be the beams. 85 90 95 100

In practice the height of the crown of the street above its height at the curb will vary from one to six inches. The depth of the bar (vertically) is sufficient to reach down to the

point where the leveling is to be done by the machine.

I will now describe the operation of my invention.

5 Where the pavement consists, first, of a sub-
 foundation of concrete, secondly of a layer of
 sand superimposed thereon, and, lastly, of
 vitrified brick or granite blocks or the like
 set on this sand. The sand or equivalent
 10 bedding is then laid upon the concrete. My
 machine is then pulled over the sand. The
 rollers C C rest on the top of the curb and
 the rollers E E each revolve against the inner
 side of the adjacent curb. The lower edge
 15 of the front beam A forces all superfluous
 sand before it and reduces the sand every-
 where to the proper height for laying thereon
 the stone or brick blocks wherewith the street
 is to be paved. The upper surface of the
 20 sand or equivalent substance here laid on
 will then have substantially the shape or con-
 formation shown in Fig. 2, and this will be
 the fact, although the upper surface of the
 concrete below the sand is uneven and does
 25 not carry out the proper curve—viz., the curve
 the upper surface of the street is to assume.
 To thus shape the upper surface of the sand,
 &c., in readiness for the paving to be set
 thereon is with my machine the work of only
 30 a few minutes. Heretofore such shaping has
 been done in pieces by means of what is
 known as a "loop," a small instrument doing
 but a portion of the width of the street at a
 time, and compelling frequent retractions of
 35 the loop over the same place and over the
 joining spaces between this place and others
 run over with the loop. The work accom-
 plished by the loop is also less symmetrical
 than that accomplished by the use of my in-
 40 vention.

I will now describe the other machines made according to my invention.

In Fig. 1 is shown a machine adapted to
 shape the surface of the street bedding or
 45 layer S for one-half the width of the street at
 a time—viz., between the curb and the cen-
 ter of the street. In this instance the wheels
 C C of one end rest upon the curb X and the
 horizontal wheels E rest against the side of
 50 the curb. At the center of the street I lay
 down a temporary center beam or rail X².
 This latter is preferably of iron. Upon this
 rail run the adjacent vertical wheels C C of
 the machine, and against the side of this beam
 55 run the horizontal wheels E E. (Not seen in
 Fig. 1 because hidden by the beam X².) As
 fast as one portion of the street is shaped the
 beam is advanced along the center of said
 street and the machine again moved forward.
 60 The other side of the street is duly shaped in
 like manner.

Fig. 5 illustrates a machine adapted to form
 the surface of the street between rails I of a
 track. In such a case the rollers C may have
 65 flanges C² and the end horizontal rollers be
 omitted, the flanges of the wheels C keeping

the ends of beams A at a proper distance
 from the track-supports. A similar device
 can be used between adjacent rails of two
 parallel street-tracks. Inasmuch as these
 70 machines do not differ in principle nor sub-
 stantially in detail of construction from that
 shown in Fig. 4, already described, I dismiss
 further description of them with the observa-
 tion that the bottom surface of the beams A
 75 of each one is formed so as to properly shape
 that portion of the street for which they are
 especially designed.

The application of my invention is quite
 wide and farther reaching than heretofore
 80 indicated. One instance of this is in relation
 to asphalt. Where the latter substance is to
 form the upper surface of the pavement, my
 machine is successfully employed to form its
 upper surface. The asphalt when first laid and
 85 spread down on the foundation is of a gran-
 ular nature. Then my machine is quickly
 drawn over it and at once shapes it, so that
 no further labor is required in shaping it, and
 it (the pavement) is ready after the proper
 90 time in which the asphalt will harden has
 elapsed for the heavy roller to be applied.

Where the street or road-bed to be shaped
 has no curbs, temporary rails may be em-
 95 ployed in lieu thereof.

The length of the beam or beams A may
 vary.

Where there is a street-track or there are
 street-tracks, the curb may be utilized at one
 end of the beam A and also the track-rail
 100 nearest the other end of the said beam for
 supporting the rollers on wheels C.

Instead of two beams A A there may be one
 large single beam A; but the latter construc-
 105 tion is likely to be unwieldy and is obviously
 not so mechanically excellent as the com-
 pound construction shown in the drawings.

Under the title "traction power" is in-
 cluded the drawing of the device by hand or
 by horse, or by steam-engine or the traction-
 110 motor, &c.

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

1. A machine for shaping road and street
 beds, consisting of the piece A, having its
 115 bottom conformed to the curve which the sur-
 face street in cross-section is to have, and pro-
 vided at its ends with vertical rollers C, and
 with the horizontal rollers E, substantially as
 and for the purposes specified. 120

2. A machine for shaping road and street
 beds, consisting of the piece A having its
 bottom conformed to the curve which the sur-
 face street in cross-section is to have, and pro-
 125 vided at its ends with vertical rollers C, and
 with the horizontal rollers E, and with con-
 nected means for moving it along, substan-
 tially as and for the purposes specified.

3. In a machine for shaping the surface of
 the road or street bed, the beam A having at
 130 each end the vertical rollers C and horizontal
 rollers E, and adapted to make the curb or

curbs of the street guideway and support of the beam, roller C being located on the curb, and the lower edge of the piece A being sufficiently deep below the top of the curb to reach and shape the portion S of the street being paved, substantially as and for the purposes specified.

4. In a machine for shaping a road-bed, the beams A, A, and intervening bridgings B and the metal pieces D, secured to the beams and each terminating in an axle D², carrying a wheel or roller C, substantially as and for the purposes specified.

5. In a machine for shaping a road-bed, the beams A, A, and intervening bridgings B and the metal pieces D, secured to the beams and each terminating in an axle D², carrying a wheel or roller C, each end of a beam A carrying a horizontal roller E, substantially as and for the purposes specified.

6. In a machine for shaping a road-bed, the beams A, A, and intervening bridgings B and the metal pieces D, secured to the beams and each terminating in an axle D², carrying a wheel or roller C, and the strap-pieces H, and

draft irons or pieces as G, G², substantially as and for the purposes specified.

7. In the construction of a road or street bed, having curbs, the following apparatus, the beam A whose length is a part of the width of the street and provided at each end with the supporting-wheels C and horizontal wheels E, and the shiftable temporary rail X², substantially as and for the purposes specified.

8. In a machine for shaping road and street beds, the portion A having its under side conforming to the shape of the street to be made, and provided at each end with vertical rollers for supporting the portion A, and also provided at one end with the horizontal roller E for abutting against the structure or support upon which the adjacent vertical wheel rolls and thereby avoiding friction with said support, substantially as and for the purposes specified.

• DAVID ADDISON WALKER.

Attest:

A. S. LUDLOW,
K. SMITH.