Dec. 4, 1962 D. R. CUMPTON 3,066,585

HEATED ROAD ROLLER

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Fig. 1

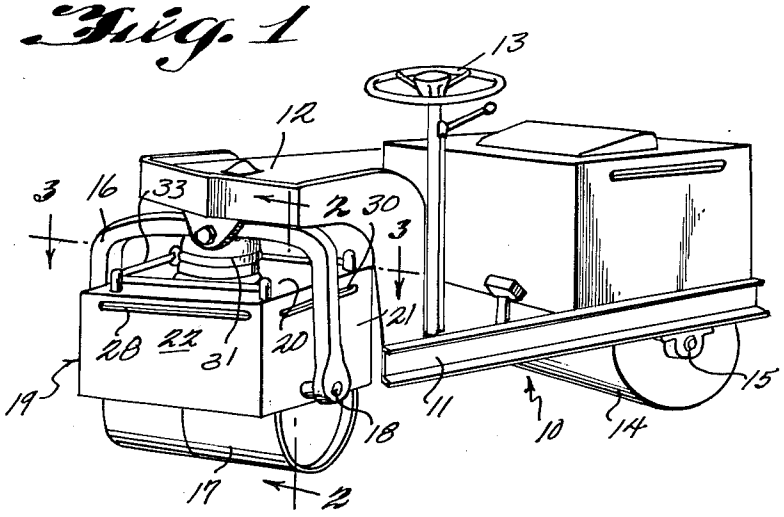
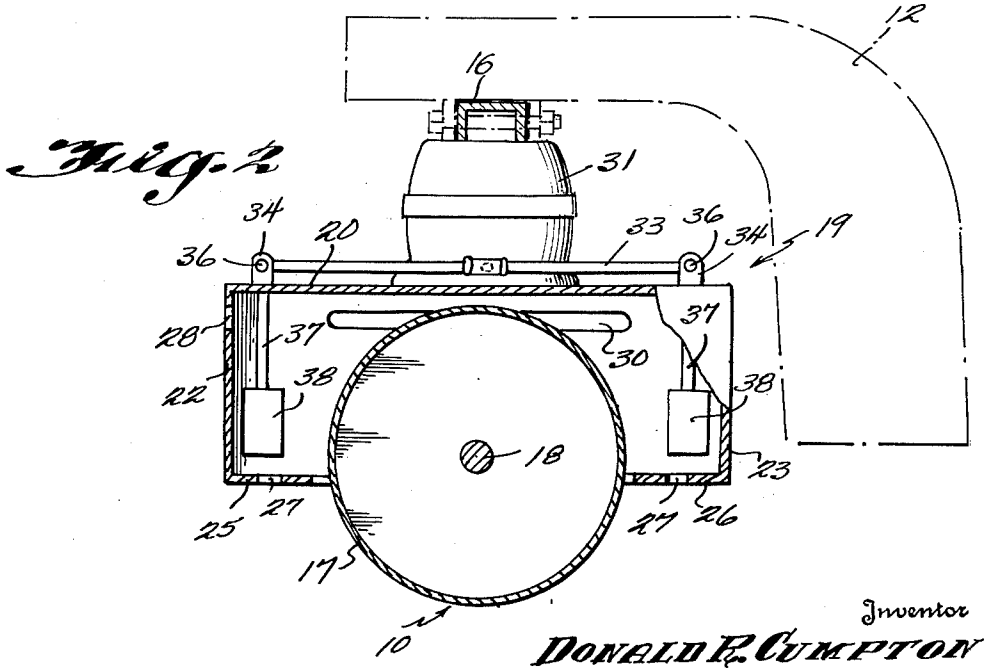


Fig. 2



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Fig. 3

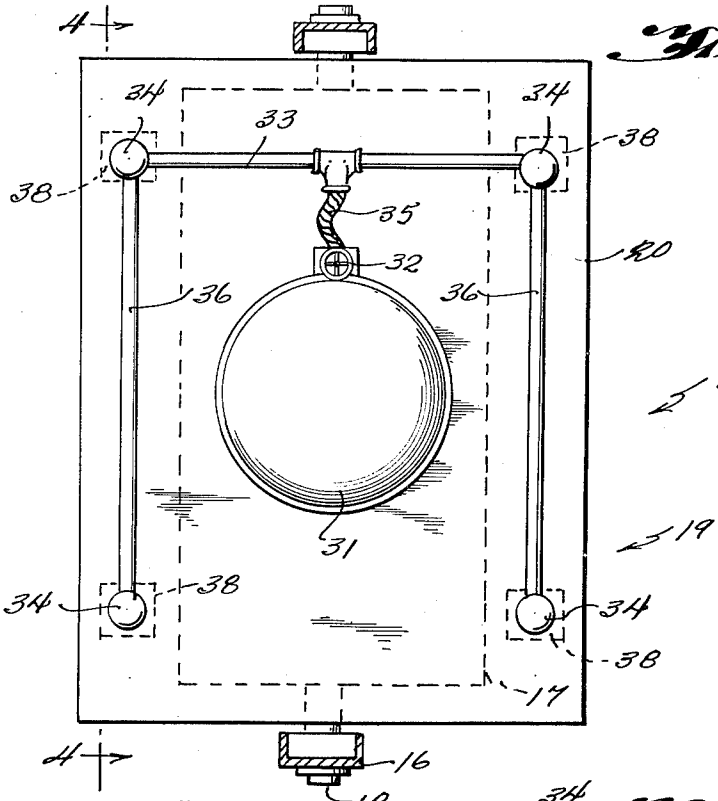
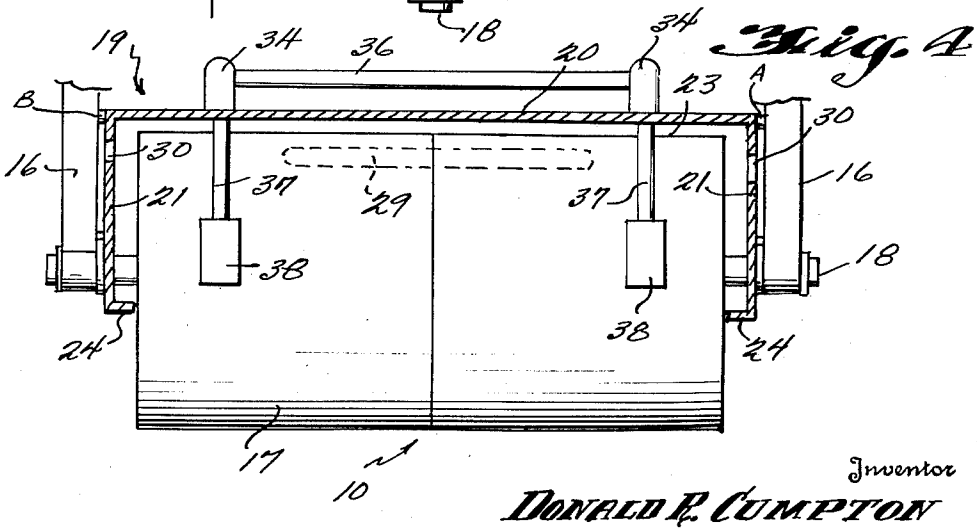


Fig. 4



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Fig. 5

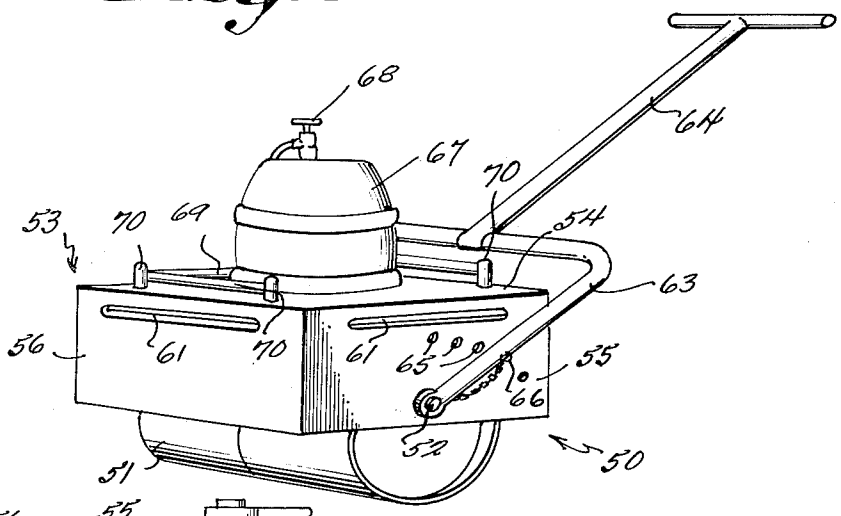
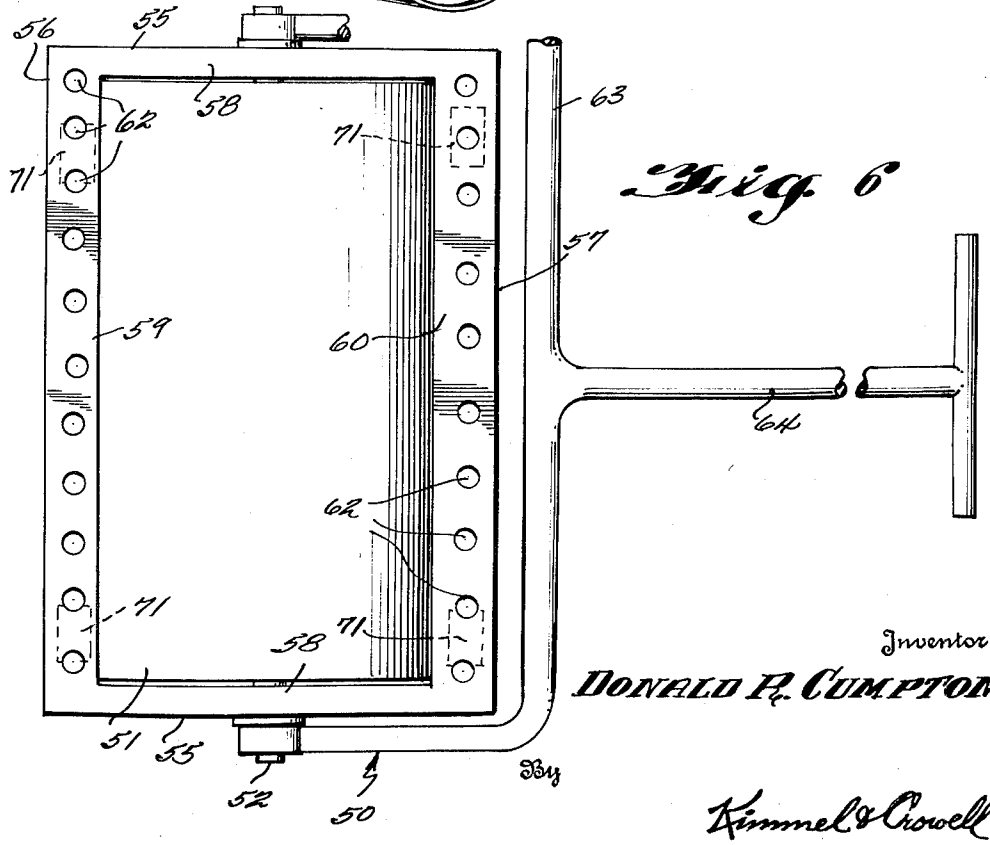


Fig. 6



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3,066,585

HEATED ROAD ROLLER

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5 Claims. (Cl. 94—50)

The present invention relates to a heated road roller and particularly to rollers used for forming bituminous road surfaces.

The primary object of the invention is to provide a heated road roller in which the heating flames contact the surface of the roller within a housing partially encompassing the roller.

Another object of the invention is to provide a heated road roller in which a housing encompasses a major portion of the roller and moves with the roller.

A further object of the invention is to provide a heated road roller of the class described above in which liquified petroleum gas serves as the fuel for the roller contacting flames.

A still further object of the invention is to provide a heated road roller of the class described above which is inexpensive to manufacture, simple to use and which provides a heated roller in an economical manner.

Other objects and advantages will become apparent in the following specification when considered in light of the attached drawings, in which:

FIGURE 1 is a perspective view of the invention;

FIGURE 2 is an enlarged fragmentary vertical sectional view taken along the line 2—2 of FIGURE 1, looking in the direction of the arrows;

FIGURE 3 is an enlarged fragmentary horizontal section taken along the line 3—3 of FIGURE 1, looking in the direction of the arrows;

FIGURE 4 is a fragmentary vertical sectional view taken along the line 4—4 of FIGURE 3, looking in the direction of the arrows;

FIGURE 5 is a perspective view of the modified form of the invention; and

FIGURE 6 is an enlarged fragmentary bottom plan view of the structure illustrated in FIGURE 5.

Referring now to the drawings in detail wherein like reference characters indicate like parts throughout the several figures, the reference numeral 10 indicates generally a power driven road roller constructed in accordance with the invention.

The road roller 10 includes a frame 11 having an upwardly and forwardly offset gooseneck 12 integrally formed on the forward end thereof. A steering wheel 13 is mounted on the frame 11 for steering the frame 11 in the conventional manner.

A metal weighted roller 14 is secured to the frame 11 by means of bearing blocks 15 at opposite ends of the roller 14. The roller 14 is rotated by power means (not shown) under the control of the operator.

A yoke 16 is mounted under the gooseneck 12 and is controlled by the steering wheel 13. A second road roller 17 is journalled on an axle 18 supported in opposite ends of the yoke 16 so that the road roller 17 may turn freely on its axis.

A housing, generally indicated at 19, has a flat, generally rectangular top wall 20 positioned in overlying relation to the roller 17. A pair of side walls 21 are arranged in vertically depending relation to opposite side edges of the top wall 20 and are secured thereto. A front wall 22 depends vertically from the front edge of the top wall 20 and connects the forward edges of the side walls 21. A rear wall 23 depends vertically from the rear edge of the top wall 20 and connects the rear edges of the side walls 21.

A horizontal flange 24 extends inwardly from each of the side walls 21 parallel to the top wall 20, terminating

closely adjacent to but spaced from the ends of the road roller 17. The front wall 22 has a rearwardly extending horizontal flange 25 formed on the lower edge thereof in parallel relation to the top wall 20. The flange 25 terminates adjacent the roller 17 but spaced therefrom. The rear wall 23 has a flange 26 integrally formed on the lower end thereof extending forwardly toward the roller 17, terminating closely adjacent to but spaced therefrom.

The flanges 25, 26 have a plurality of orifices 27 arranged in spaced apart relation therein.

The front wall 22 has an elongated slot 28 formed therein adjacent the top wall 20. The rear wall 23 has an elongated slot 29 formed therein adjacent the top wall 20. The end walls 21 are each provided with an elongated slot 30 formed therein adjacent the top wall 20.

The end walls 21 are secured to the yoke 16 by bolts A and B as shown in FIGURE 4, or other suitable means, so that the housing 19 is supported in rigid relation to the roller 17.

A liquified petroleum gas tank 31 is secured centrally on the top wall 20 and is controlled by a conventional valve 32. A pipe 33 is positioned adjacent the tank 31, parallel to the top wall 20, and has its opposite ends supported in fittings 34. The pipe 33 is connected to the tank 31 through a flexible hose 35. A pipe 36 extends transversely of the top wall 20 adjacent the front wall 22 and the rear wall 23. The pipes 36 have their opposite ends supported in fittings 34.

A relatively short, vertical pipe 37 depends from each of the fittings 34 and projects through the top wall 20, as can be clearly seen in FIGURES 2 and 4. The liquid petroleum gas burner 38 is mounted on the lower end of each of the relatively short, vertical pipes 37 and positioned so as to direct flames emitted therefrom toward the roller 17.

The apertures 27 permit the influx of air into the housing 19 while the elongated slots 28, 29, 30 permit the products of combustion to be discharged from the housing 19. The roller 14 is heated by a similar burner system so that both the roller 14 and the roller 17 will be equally effective when rolling bituminous road surfaces.

A modified form of the invention is illustrated in FIGURES 5 and 6 wherein a hand operated road roller is generally indicated at 50.

The road roller 50 includes a generally cylindrical weighted roller 51 mounted on an axle 52. A generally rectangular hollow housing 53 is positioned in overlying relation with respect to the roller 51 and has a top wall 54, a pair of spaced parallel end walls 55, a front wall 56, and a rear wall 57. The side walls 55 each have an inwardly extending horizontal flange 58 integrally formed on the lower edge thereof and arranged parallel to the top wall 54. The flanges 58 terminate adjacent to but spaced from the opposite ends of the roller 51. The front wall 56 has an inwardly extending flange 59 integrally formed on the lower edge thereof and arranged parallel to the top wall 54. The flange 59 terminates adjacent to but spaced from the roller 51. The rear wall 57 has an inwardly extending flange 60 integrally formed on the lower edge thereof parallel to the top wall 54. The flange 60 terminates adjacent to but spaced from the roller 51.

The side walls 55, front wall 56 and rear wall 57 each have an elongated horizontal slot 61 formed therein adjacent the top wall 54. The flanges 59, 60 are each provided with a plurality of spaced apart apertures 62 opening therethrough, for reasons to be assigned.

A yoke 63 is connected to opposite ends of the axle 52 and has a key handle 64 secured thereto and extending outwardly therefrom.

A plurality of spaced apart, arcuately arranged bores 65 are formed in the side walls 55 to receive a coupling

pin 66 extending through the yoke 63 to secure the yoke 63 to the housing 53 in an angularly adjustable position with respect thereto.

The top wall 54 has a liquified petroleum gas tank 67 mounted thereon and controlled by a hand valve 68. A horizontal pipe 69 is connected to the tank 67 and feeds gas therefrom to fittings 70 mounted on the top wall 54. A burner 71 is positioned within the housing 53 underlying each of the fittings 70 and is supported thereby, receiving gas therefrom in the same manner that the burners are supported and fueled by the fittings 34, in the preferred form of the invention.

In the use and operation of the invention, the burners 71 are operated in the same manner as the burners 38, with air being admitted to the housing 53 through the apertures 62 and the products of combustion being exhausted through the slots 61.

Although liquid petroleum has been described as a preferred fuel, it will be understood that other types of fuel such as propane, butane, natural gas, kerosene, or the like may also be employed by appropriate modification of the burner structure.

Similarly, while a particular shape and size of fuel tank is disclosed, modification in the shape, size and location, for the purposes of balance, may be made as long as the basic principle of a roller heated from the outside and located within a hood to conserve the heat is adhered to.

Having thus described the preferred embodiments of the invention, it should be understood that numerous structural modifications and adaptations including changes in size and body size may be resorted to without departing from the scope of the appended claims.

What is claimed is:

1. A heated road roller comprising a substantially cylindrical weighted roller, means supporting an axle, said roller journaled on said axle, a housing mounted on said axle and secured to said axle supporting means enshrouding the upper portion of said roller, burners mounted in said housing in spaced apart relation positioned to direct flames against the roller, fuel supply means mounted on said housing for supplying fuel to said burners, said housing including portions defining a plurality of air inlet openings to admit combustion sustaining air to the interior thereof, said housing further including portions

defining a plurality of discharge openings spaced from said air inlet openings through which products of combustion from said burners are discharged, said housing comprising a top wall, opposing side walls, end walls and an open bottom, perpendicular inwardly extending flanges on said side and end walls, said air openings in the flanges on said side walls and said discharge openings in said side and end walls adjacent the top wall.

2. In a heated roller assembly, the combination comprising, an axle, a cylindrical roller mounted on said axle and rotatable thereon, a housing mounted on said axle overlying and substantially enclosing the upper portions of said roller, said housing having a top wall with side, front and rear walls depending therefrom, said front and rear walls having elongate flanges fixed to the lower edges thereof and extending substantially normal thereto toward the said roller in close proximity thereof to provide a relatively closed heating compartment, the upper and lower portions of the housing having air outlet and inlet openings therein respectively, a plurality of burners positioned within said housing adjacent said roller in such manner as to apply heat therefrom to the roller outer surface, and frame means mounted on said axle and connected to said housing above said axle for directional control of the roller assembly.

3. An assembly as in claim 2 wherein the air inlet openings are in said housing front and rear wall flanges and the outlet openings are in the housing walls substantially thereabove.

4. An assembly as in claim 2 wherein said frame means has a pushing handle connected therewith and the frame is selectively connected to the housing at a plurality of points whereby to vary the angle of the handle extension relative to the housing.

5. An assembly as in claim 2 wherein at least one of said burners are positioned on each of the front and rear sides of the roller and between same and the front and rear walls of the housing.

References Cited in the file of this patent

UNITED STATES PATENTS

197,713	Abbott	Dec. 4, 1877
524,939	Dennison	Aug. 21, 1894
2,241,299	Finley	May 6, 1941
2,705,906	Fizzell	Apr. 12, 1955