March 12, 1963 G. E. MALZAHN 3,080,800

HEATED ASPHALT ROLLERS

Filed May 17, 1960 2 Sheets-Sheet 1

Fig. 1

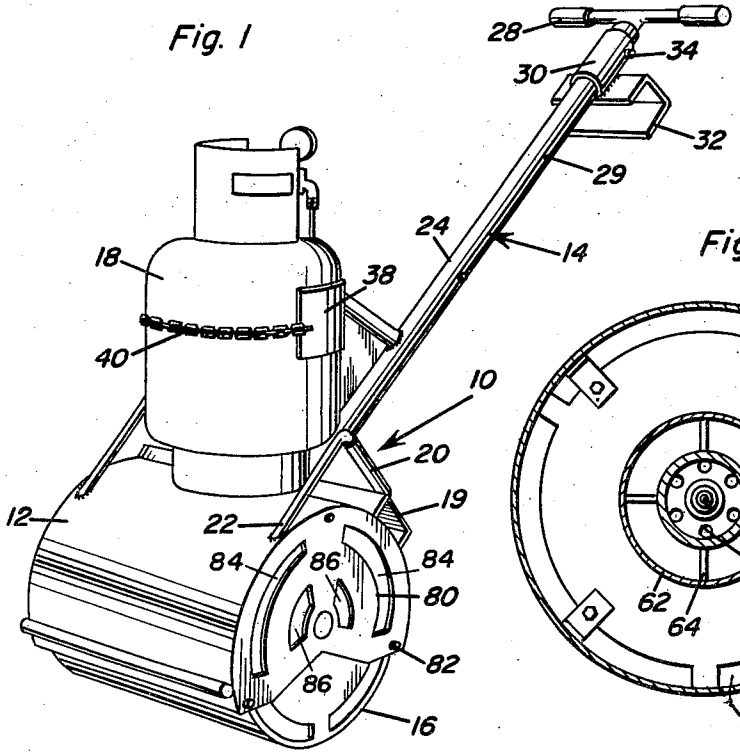
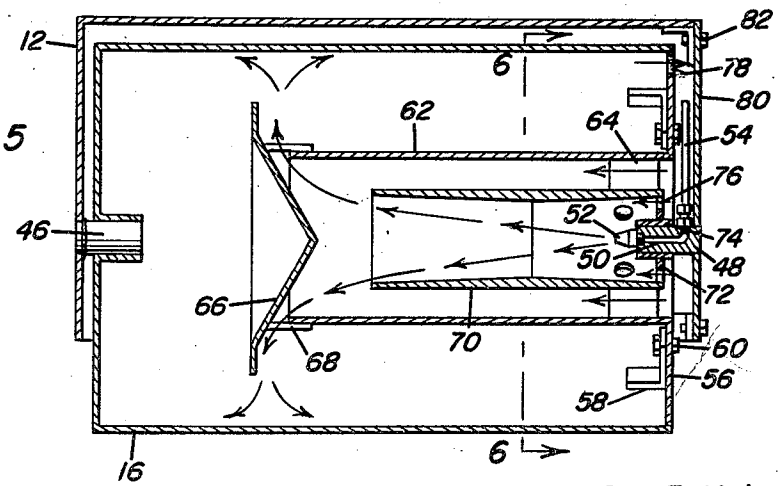


Fig. 6

Fig. 5



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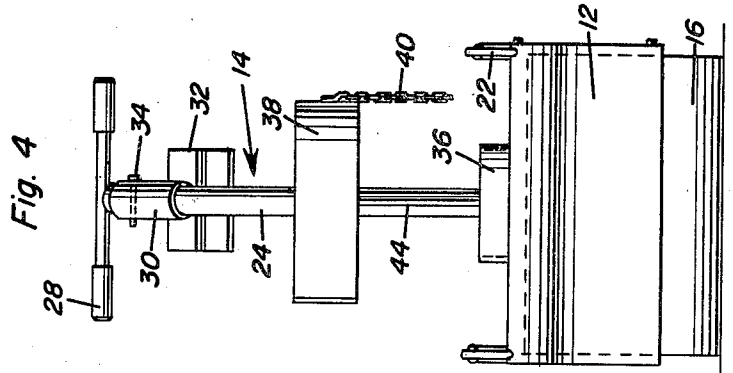


Fig. 4

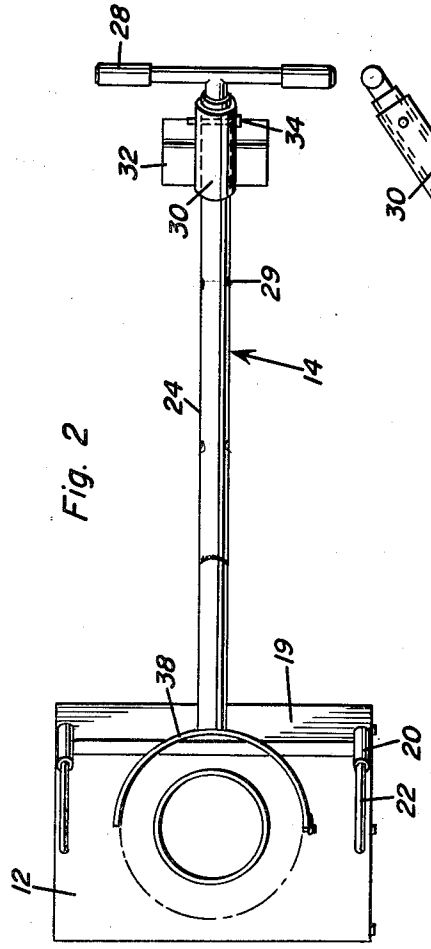


Fig. 2

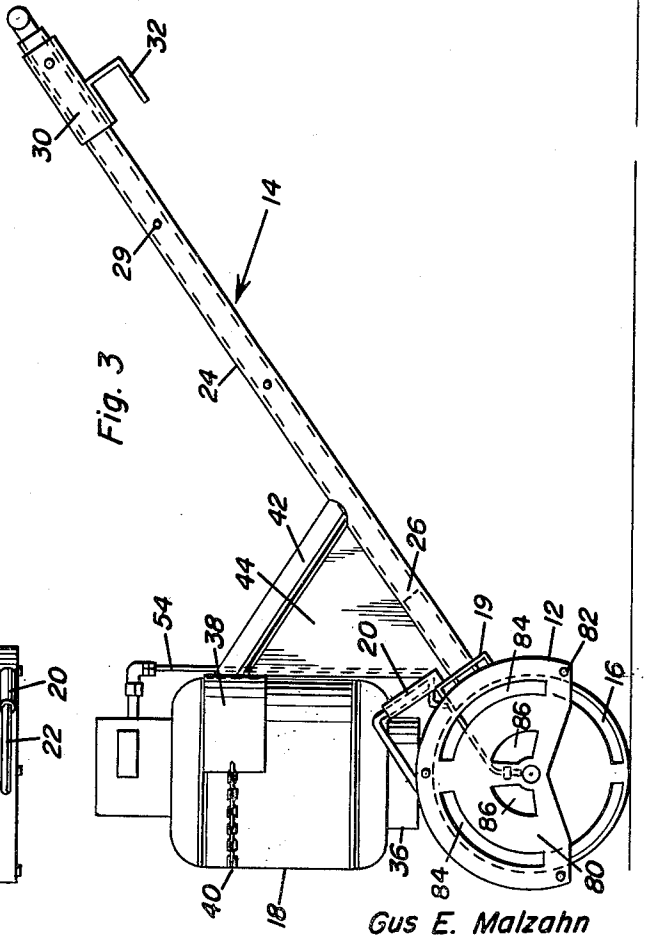


Fig. 3

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United States Patent Office 3,080,800 Patented Mar. 12, 1963

3,080,800

HEATED ASPHALT ROLLERS

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Filed May 17, 1960, Ser. No. 29,623
4 Claims. (Cl. 94—50)

This invention relates to heated rollers used for finishing asphalt surfaces.

It is therefore a primary object of this invention, to provide a roller for compacting asphalt surfaces by the weight of the roller and simultaneously applying heat to the asphalt.

A further object of this invention in accordance with the foregoing object, is to provide a heated asphalt roller having a novel burner disposed within the roller being supplied with gas from a tank mounted on top of the roller hood.

Another object of this invention in accordance with the foregoing objects, is to provide a heated asphalt roller having the advantage of being readily suspended for transport purposes.

A still further object of this invention is to provide a heated asphalt roller wherein the loss of heat from the roller is considerably restricted.

In accordance with the foregoing objects, the roller in accordance with this invention, includes a hood which encloses and rotatably mounts the roller, said roller being almost completely enclosed by the hood so as to restrict the loss of heat therefrom. A gas burner is disposed within the roller for heating thereof and is supplied with gas from a tank mounted in a novel and advantageous manner, directly above the hood by means of a mounting seat secured to the top of the hood while the tank is secured in its position by means of a clamp connected to a handle extending upwardly and rearwardly from a bracket connected to the hood. The handle is extensible and has an adjustable bracket connected thereto enabling the roller to be suspended from the side of the bed of a truck.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIGURE 1 is a perspective view of the heated asphalt roller in accordance with this invention.

FIGURE 2 is a top view of the roller with the gas tank removed therefrom.

FIGURE 3 is a side elevational view of the roller.

FIGURE 4 is a front view of the roller with the gas tank removed therefrom.

FIGURE 5 is a vertical central longitudinal sectional view taken through the roller and roller hood.

FIGURE 6 is a vertical transverse sectional view through the roller taken through a plane indicated by section line 6—6 in FIGURE 5.

Referring to the drawing in detail, reference numeral **10** generally indicates the roller in accordance with this invention. Referring to FIGURE 1, the roller **10** includes a hood generally indicated by reference numeral **12**, a handle section **14**, a roller generally indicated by reference numeral **16** extending below the hood **12** for contact with the asphalt surface to be rolled and a gas tank **18** vertically supported on the hood **12** for supplying gas to a burner located within the roller **16** as will be hereafter explained.

A bracket member **19** is disposed along the length of the hood **12** rearwardly thereof and has a pair of tubular members **20** secured thereto as by welding at either end of the bracket **19**. A pair of bent members **22** are welded to the top of the hood forwardly thereof and are slidably

engaged within the tubular members **20** secured to the bracket **19** as more clearly seen in FIGURES 1 and 3.

The handle portion **14** is connected to the bracket **19** and extends rearwardly and upwardly therefrom. The handle portion **14** includes a tubular member **24** within which a rod member **26** is adjustably mounted and is extensible so as to elongate the handle **14** to any desired height. The end of the rod **26** terminates in a handle portion **28**. The handle **14** is maintained in adjusted position by means of a tubular member **30** through which a bolt **34** extends in alignment with apertures **29** in the outer tubular member **24** and corresponding apertures in the extensible rod member **26** for holding the tubular member, and rod **26** in adjusted position relative to the outer tubular member **24**. Connected to the bottom of the tubular member **30** is a bracket member **32** by means of which the roller may be suspended from the side of a truck bed.

In order to position the gas supply tank **18** in illustrated vertically aligned position, an annular sealing member **36** is secured to the top of the hood **12** as clearly shown in FIGURE 4, with the bottom of the gas tank being seated therein in perfect vertical alignment above the hood **12** so that the weight of the tank **18** will be useful to increase the compacting weight of the roller without imposing an additional load for the roller operator to support on the handle. In order to clamp the tank **18** in position, a semi-cylindrical annular member **38** is provided, said member **38** being connected to a tubular member **42** which is connected to the handle member **24** and braced by web member **44**. A chain **40** is connected to the member **38** so as to lock the tank **18** against the member **38** in accurate vertically aligned position.

Referring now to FIGURE 5, the roller **16** is rotatably mounted within the hood **12** by means of a pair of axle stub shafts **46** and **48** connected to the sides of the hood **12**. Within the axle shaft **48** connected to side **80** of the hood **12**, is a passage **50** communicating with a gas inlet nozzle **52** threadedly connected at one end of the stub shaft **48** while the inlet conduit **54** is connected to the passage **50** by means of a fitting, said conduit **54** being connected to the top of the gas tank **18** for supply of gas therefrom into and through the nozzle **52**. The nozzle **52** thereby supplies gas to the burner located within the roller **16**. The burner comprises a tubular member **62** which is connected to the side wall **56** which is connected to the roller **16** by means of angle plates **58** secured to as by welding to the inner walls of the roller **16** and by means of bolts **60** to the side wall **56** as shown in FIGURE 6. Connected to the inner end of the tubular member **62**, is a flame directing member **66** welded to the tubular member **62** but having passageways **68** through which the flame is directed into the space between the inner walls of the roller **16** and the outer surface of the tubular member **62** for more efficient heating of the rolling surface of the roller. Coaxially mounted within the tubular member **62** is a venturi type nozzle member **70** connected to the tubular member **62** by radial members **64** through which air may pass into the tubular member **62** while air enters passageways **76** at one end of the venturi member **70** located in the end plate **72** of the venturi member **70** which end plate is connected to a sleeve member **74** through which the stub shaft **48** extends to thereby support the end of the roller **16** to which the burner is attached. Accordingly, the incoming air through passages **76** and gas from nozzle **52** is to flare out as indicated by the arrows in FIGURE 5, while passing through the venturi member **70** while burning. Annular slots **78** are provided in wall **56** of the roller which are in radial and axial alignment with the slots **84** in the side **80** of the hood, said side **80** also having inner radial slots **86**, for air intake purposes.

From the foregoing description, operation of the roller will be apparent. It will therefore be appreciated, that by reason of the novel arrangement of roller components and the novel burner unit located within the roller an unexpectedly high compaction is realized when rolling asphalt with this roller. Furthermore, the adjustable features and restriction in the loss of heat from the roller because of the more complete enclosure by the hood, makes the roller in accordance with this invention more efficient and more widely useful than was heretofore possible.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. A heated asphalt roller suitable for rolling asphalt pavement comprising, bracket means rigidly connected to a hood means, roller means journaled within said hood means, extensible handle means connected to said bracket means, seating means mounted on said hood means vertically positioning and supporting a gas supply reservoir means directly above said hood means, removable clamp means attached to said handle means for clamping said gas supply means in position, gas burner means mounted within said roller means at one end thereof and operatively connected by conduit means to said gas supply means and exhaust passage means at the ends of said roller means and hood means, registerable whereby exhaust gases may be conducted away from the vicinity of the gas supply reservoir means, said gas burner means including a tubular member mounted at one end on said one end of said roller means, a flame directing member connected to the other end of said tubular member, venturi passage means rigidly fixed to said tubular member and disposed centrally therewithin, a gas inlet nozzle connected to said supply means and disposed within said venturi passage means, and air inlet means between said nozzle and one end of said venturi passage.

2. A heated asphalt roller suitable for rolling asphalt pavement comprising, bracket means rigidly connected to a hood means, roller means journaled within said hood means, extensible handle means connected to said bracket means, seating means mounted on said hood means vertically positioning and supporting a gas supply reservoir means directly above said hood means, removable clamp means attached to said handle means for clamping said gas supply means in position, gas burner means mounted within said roller means at one end thereof and operatively connected by conduit means to said gas supply means and exhaust passage means at the ends of said roller means and hood means, registerable whereby exhaust gases may be conducted away from the vicinity of the gas supply reservoir means, said hood means enclosing more than half of the roller means, said gas burner means including a tubular member mounted at one end on said

one end of said roller means, a flame directing member connected to the other end of said tubular member, venturi passage means connected to said tubular member and disposed centrally therewithin, a gas inlet means connected to said supply means and disposed within said venturi passage means, first air inlet passage means disposed between said venturi passage means and said tubular member and second air inlet passage means disposed between said gas inlet and said venturi passage means.

3. A gas burner for a cylindrical asphalt roller rotatably mounted on axial stub shafts fixed to a roller hood, comprising a tubular member coaxially mounted to one end of said roller, a flame directing member connected to said tubular member at an inner end thereof, a venturi nozzle coaxially mounted to and within said tubular member having an inner end spaced from said flame directing member and a gas inlet nozzle mounted in one of the axial stub shafts on which the roller is journaled, coaxially extending into said venturi nozzle, exhaust passages disposed in one end of said roller, and said one stub shaft and gas nozzle projecting into and rotatably mounting said venturi nozzle.

4. A heated asphalt roller suitable for rolling asphalt pavement comprising, bracket means rigidly connected to a hood means, roller means journaled within said hood means, extensible handle means connected to said bracket means, seating means mounted on said hood means vertically positioning and supporting a gas supply reservoir means directly above said hood means, removable clamp means attached to said handle means for clamping said gas supply means in position, gas burner means mounted within said roller means at one end thereof and operatively connected by conduit means to said gas supply means and exhaust passage means at the ends of said roller means and hood means, registerable whereby exhaust gases may be conducted away from the vicinity of the gas supply reservoir means, said roller having circular ends and said hood having part circular ends directly adjacent said circular ends, said exhaust passage means comprising first arcuate slots in at least one of said circular ends and second arcuate slots in at least one of said part circular ends adjacent said one circular end, said first and second slots becoming axially aligned during rotation of said drum.

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