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Polselli et al.

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[54] **CURB MARKING GAGE**

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[51] **Int. Cl.** **B43l 13/02**

[58] **Field of Search** ..... 33/42, 43, 44, 45, 35, 33/41, 19 B, 21 D, 36, 37, 38; 401/193, 147

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Attorney, Agent, or Firm—Weiser, Stapler & Spivak

[57] **ABSTRACT**

A curb marking gage having a generally L-shaped frame upon which are mounted a plurality of vertically oriented wheels adapted to roll over the top surface of a curb construction and a plurality of horizontally oriented wheels adapted to be rollable over the side surface of the curb construction. A depth marking assembly is adjustably mounted on the frame and incorporates a vertical arm having a scale inscribed thereon for height gaging purposes. A paint container mounts at the bottom of the scale and feeds paint peripherally outwardly to a circular brush which is arranged for rotation relative to the frame for curb marking purposes. The paint container is pivotally mounted and spring biased to continuously urge the circular brush against the curb during all periods of use.

2 Claims, 3 Drawing Figures

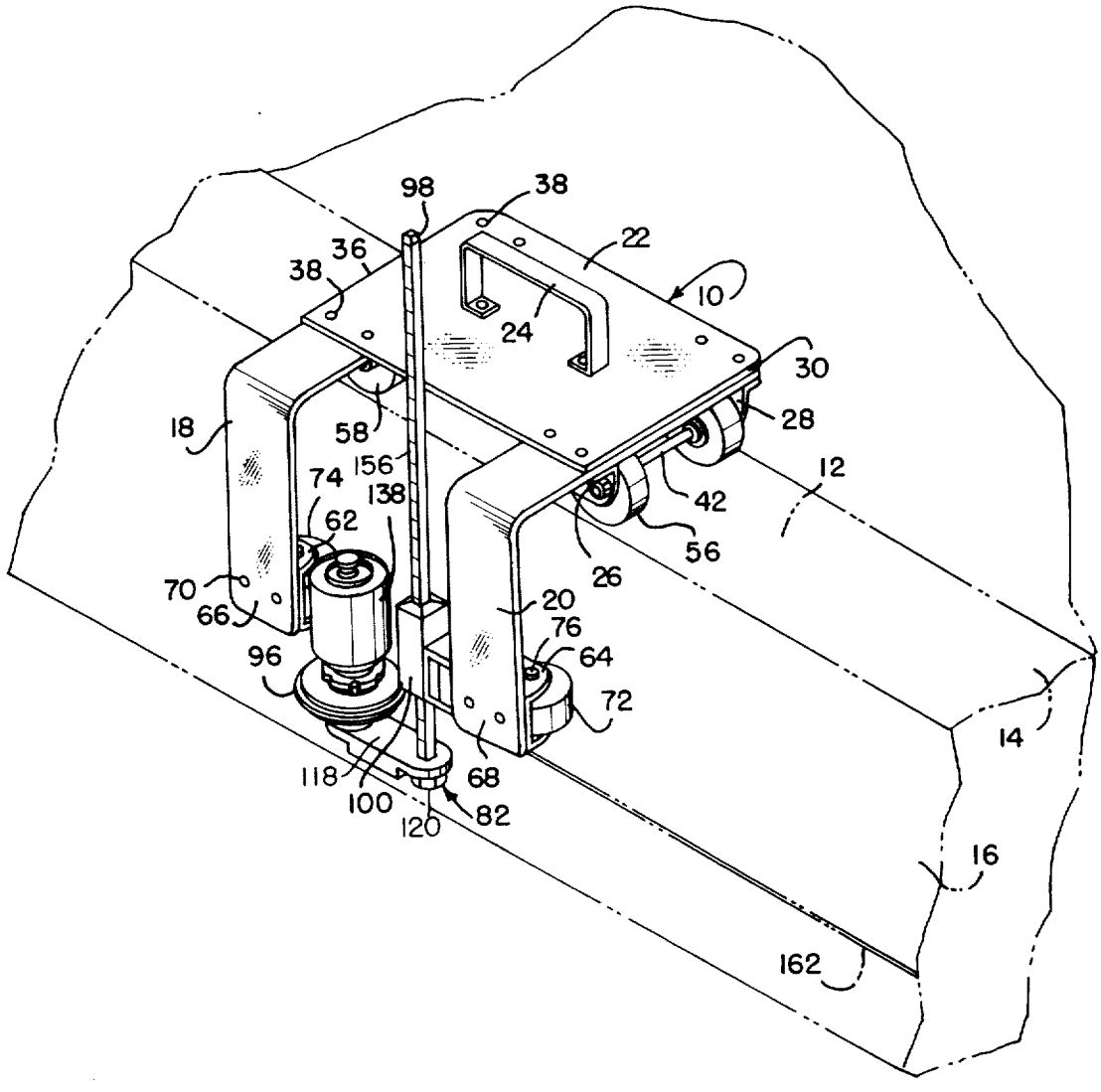


FIG. 1

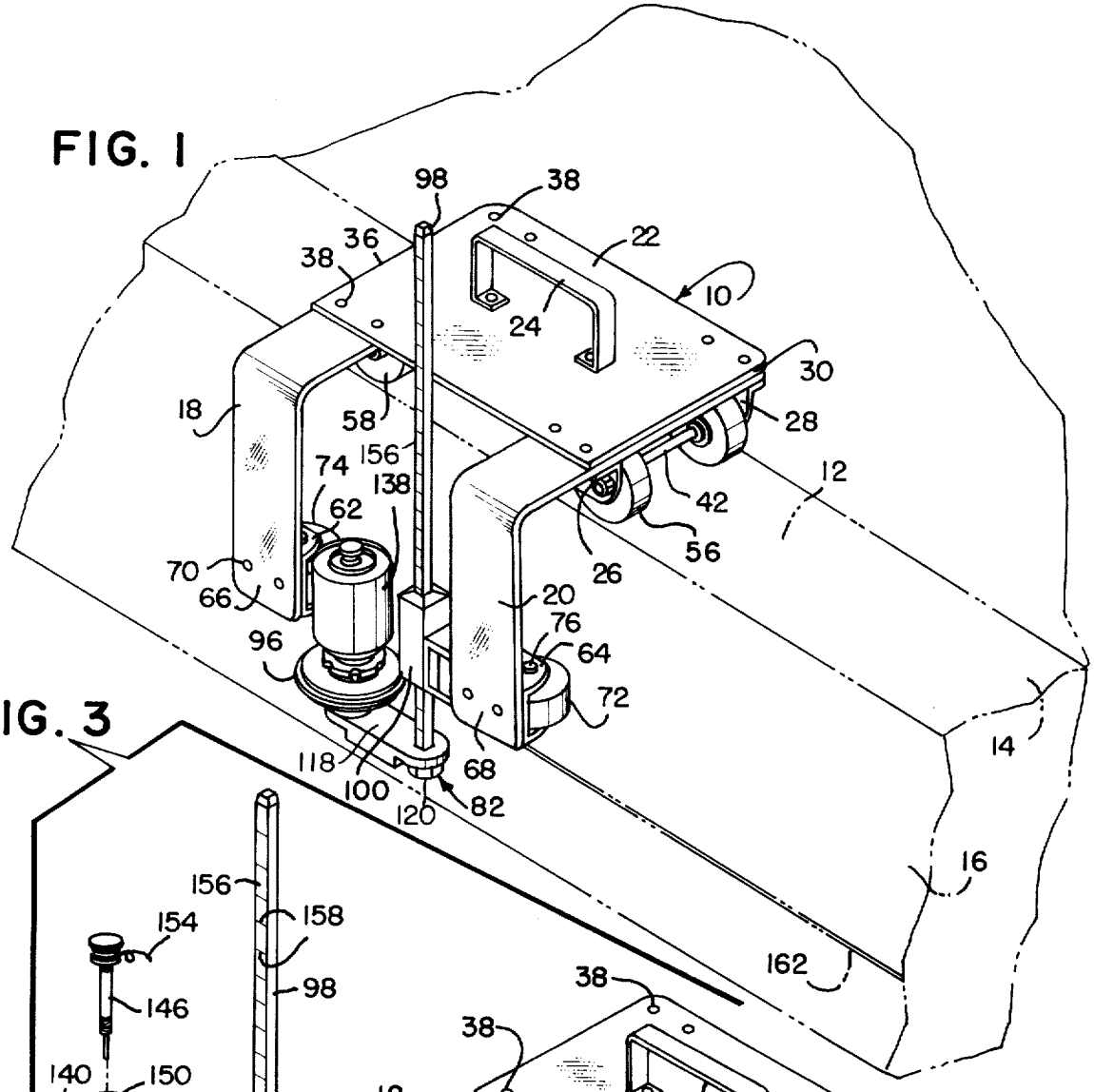
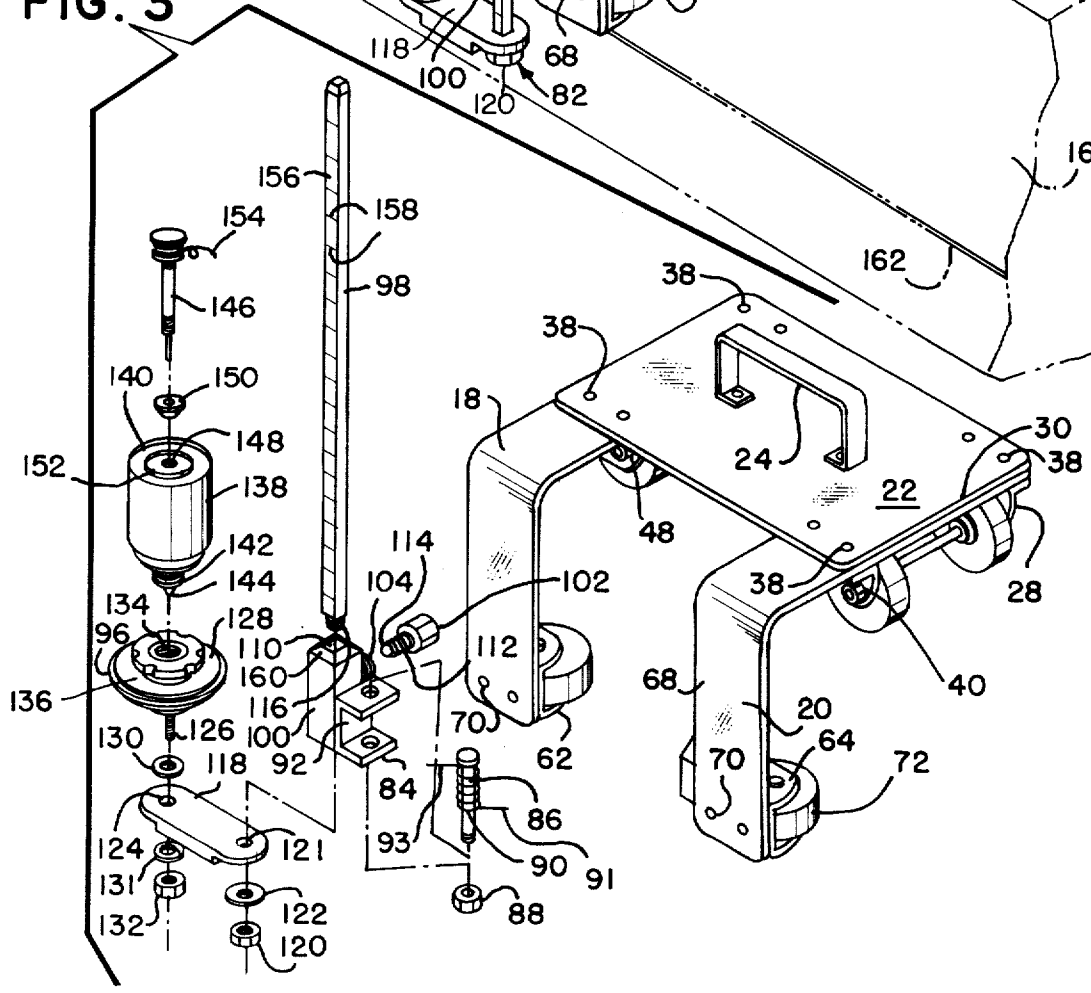

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96
76
64
72
118
68
14
100
120
82
16
162

FIG. 3


156
158
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98
146
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140
150
18
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148
24
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152
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142
114
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104
102
134
128
96
110
112
40
160
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136
116
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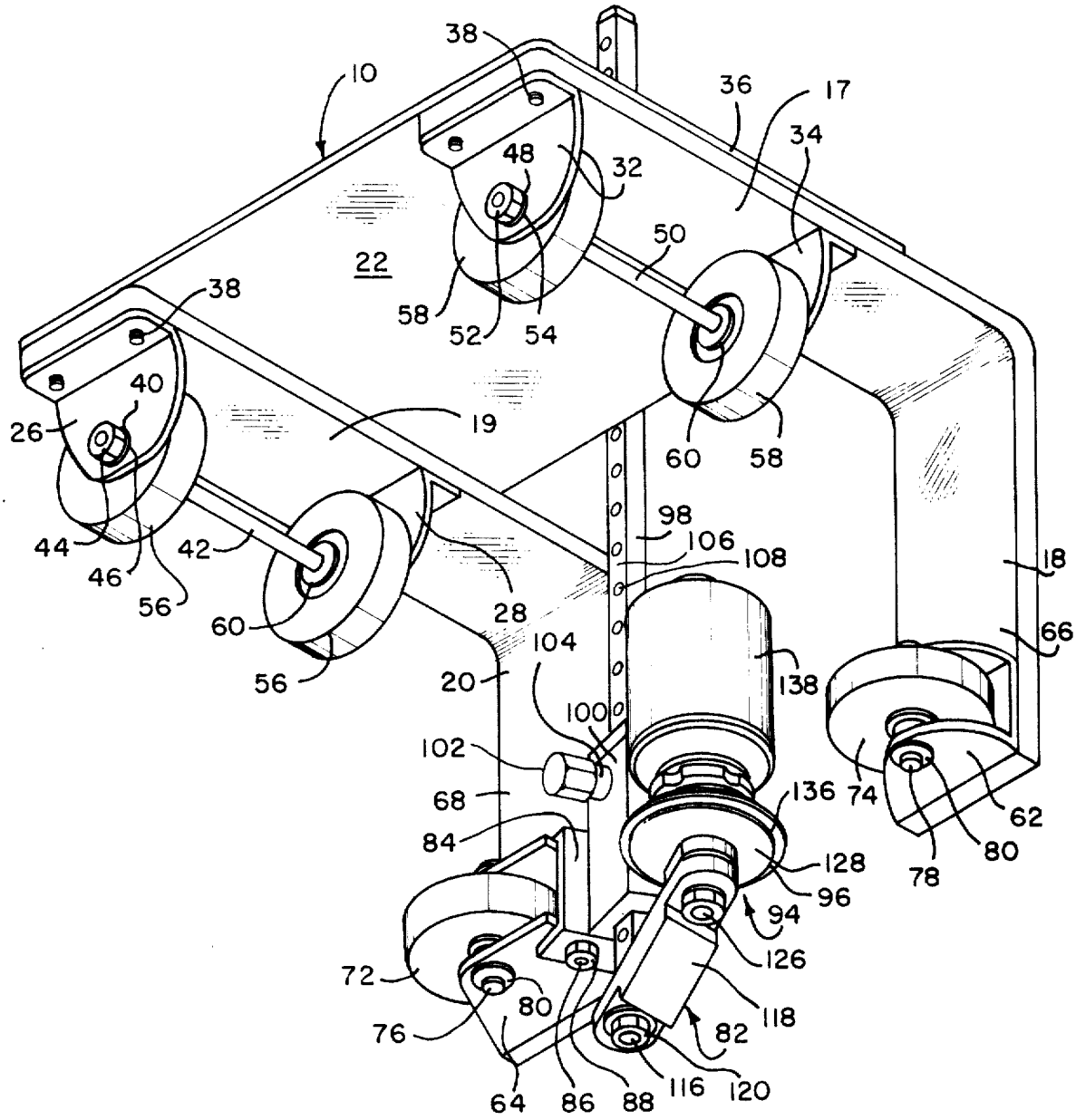

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128
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94
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126
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118
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FIG. 2

CURB MARKING GAGE

BACKGROUND OF THE INVENTION

The present invention relates generally to the field of construction marking devices and more particularly is directed to markers suitable for use with curb constructions.

In most urban communities it is the common practice to define roads or streets from sidewalks or other private construction by employing curbs at the transverse edges of the streets. When constructing streets or roads, the road construction contractors will normally establish the desired grades by use of temporary markers and then the finished curbs are installed. Most often, the curbs are fabricated of concrete and extensive forming and other preparatory work is required. In other instances, the curbs are prefinished prior to installation, such as when employing granite curb stones, and then the prefinished materials are set in place in the desired locations and at the required finished grades.

Once the finished grades have been established at the transverse curbs, the contractor then levels, grades fills and otherwise adjusts the road bed relative to the finished curb so that a finished road surface of either concrete or bituminous material can be placed at precisely the correct, finished grade. As road construction equipment becomes more automated in nature and the need for hand operations diminishes, some method for quickly and accurately marking the vertical surface of the preset curbs with the proper road elevation has become apparent. The markings must be accurate, quickly applied and sufficiently clear so as to be readily visible to the operators of large, mechanical, road construction equipment.

It is presently the practice to employ a marking line for manually placing elevation marks on the vertical curb surface. This present method is now proving obsolete in that two men are required for the job, one at each end of the line, and the entire operation is too time consuming, thereby increasing construction costs.

SUMMARY OF THE INVENTION

The present invention relates generally to the field of pavement markers, and more particularly, is directed to a curb marking gage suitable to quickly establish a horizontal line on the curb for locating street grades relative to the curb.

The device of the present invention includes a generally L-shaped frame member having a horizontal leg and a vertical leg depending therefrom and which is designed to overfit and ride upon a previously set curb construction. A plurality of vertically oriented wheels depend from the top leg of the frame and are rotatably supported to ride over the top surface of a curb. A plurality of horizontally oriented wheels project inwardly from the downwardly depending leg of the frame and are held in rolling engagement over the vertical surface of a curb. A curb marking assembly is vertically adjustable within the frame and includes a scale to quickly position the marking device at a desired location below the top surface of the curb. A paint container is supported on the curb marking assembly and feeds paint by gravity through a bottom positioned, adjustable orifice to a circular brush which is preferably oriented in a horizontal plane. Paint from the container radiates outwardly to impregnate the entire peripheral surface of the circular brush for curb marking purposes. The paint container and brush are supported upon a platform which is pivotally carried at the bottom of the curb marking assembly. The platform is continuously spring biased inwardly toward the vertical surface of the curb to thereby continuously press the circular brush against the curb for marking purposes during all periods of use.

It is therefore an object of the present invention to provide an improved curb marking gage of the type set forth.

It is another object of the present invention to provide a novel curb marking gage incorporating a generally L-shaped frame, horizontal and vertically oriented wheels supported inwardly of the frame for rolling upon the corresponding surfaces of a curb and paint marking means carried by the frame for inscribing a horizontal line upon a curb.

It is another object of the present invention to provide a novel curb marking gage incorporating a generally L-shaped frame, wheels connected to the frame and rollable upon the surfaces of a curb, a curb marking assembly carried by the frame, said curb marking assembly including a paint container and a circular paint brush.

It is another object of the present invention to provide a novel curb marking gage which includes a frame, wheel means rollably connected to the frame for rolling the device over a curb, paint application means suspended from the frame for applying a horizontal mark to a curb and vertically adjustable means adjustably supported on the frame for vertically orienting the paint application means relative to the top of a curb.

It is another object of the present invention to provide a novel curb marking gage which can be readily operated by one man and which includes paint marking means which are easily adjustable to vertically position a horizontal mark at any desired height relative to the top surface of a curb.

It is another object of the present invention to provide a novel curb marking gage including an L-shaped frame, horizontally oriented wheels and vertically oriented wheels carried by the frame for rolling upon the vertical and horizontal surfaces of a curb and a paint marking assembly vertically adjustably carried by the frame, the said paint marking assembly incorporating a paint container which feeds a circular paint brush and spring means to urge the periphery of the paint brush against the vertical surface of a curb continuously for paint marking purposes.

It is another object of the present invention to provide a novel curb marking gage that is rugged in construction, simple in operation and trouble free when in use.

Other objects and a fuller understanding of the invention will be had by referring to the following description and claims of a preferred embodiment thereof, taken in conjunction with the accompanying drawings, wherein like reference characters refer to similar parts throughout the several views and in which:

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of a curb marking gage constructed in accordance with the present invention, showing the device in use.

FIG. 2 is an enlarged, bottom perspective view of the device.

FIG. 3 is an exploded, perspective view of the device.

DESCRIPTION OF THE PREFERRED EMBODIMENT OF THE INVENTION

Although specific terms are used in the following description for the sake of clarity, these terms are intended only to refer to the particular structure of our invention selected for illustration in the drawings, and are not intended to define or limit the scope of the invention.

Referring now to the drawings, we show a curb marking gage **10** suitable for use with an existing curb **12** by rolling simultaneously upon the horizontal top curb surface **14** and the vertical side surface **16** of the curb **12.** The curb marking gage **10** comprises generally a pair of spaced, L-shaped frame members **18, 20** which are upwardly joined by an operating plate **22** which serves to rigidly secure the frame members **18, 20** in their said spaced relationship. A handle **24** is upwardly affixed to the top surface of the operating plate **22** to permit the gage **10** to be readily rolled along the curb **12** for curb marking purposes by a single workman as hereinafter more fully set forth.

A pair of forward wheel brackets **26, 28** depend from the operating plate **22** near the forward edge **30** thereof. Similarly, a pair of rearward wheel brackets **32, 34** depend from the operating plate **22** and near the rearward edge **36** thereof. Suitable bolts **38** or other fasteners secure the respective wheel brackets **26, 28,** 32, 34 to the L-shaped frame members **18, 20.** Preferably, the same bolts **38** are employed to connect the operating plate **22** to the horizontal legs **17, 19** of the L-shaped frame members **18, 20** to simplify assembly procedures.

Each of the forward and rearward wheel brackets **26,** 28, 32, 34 is provided with an axle receiving opening **40** for wheel connection purposes. The axle receiving openings **40** of the forward wheel brackets **26, 28** transversely align to receive the forward wheel axle **42** therein. Suitable nuts **44** and lock washers **46** are employed to secure the forward wheel axle to the forward wheel brackets **26, 28** in well known manner. Similarly, the rearward wheel brackets **32, 34** are provided with transversely aligned axle receiving openings **48** which receive the rearward wheel axle **50** therein in secure manner such as by employing nuts **52** and lock washers **54** in well known manner. Forward wheels **56** and rearward wheels **58** respectively journal upon the forward and rearward wheel axles **42, 50** in rotative manner for rotary movement about the respective axles **42, 50.** Preferably, conventional ball bearings **60** are employed with each of the forward wheels **56** and rearward wheels **58** to facilitate rotary movement of the wheels about the respective axles. As best seen in FIG. **1,** the forward and rearward wheels **56, 58** are employed to roll upon the top horizontal surface **14** of the curb **12.**

A pair of horizontally oriented wheel brackets **62, 64** are respectively affixed to the lower ends of the depending legs **66, 68** of the L-shaped frame members **18,** 20. Preferably, the wheel brackets **62, 64** are generally channel-shaped in cross-sectional configuration and are affixed to the depending legs **66, 68** by means of bolts **70** or other fasteners which threadedly engage the respective parts. Horizontally oriented forward and rearward wheels **72, 74** rotatively connect to the brackets **62, 64** in conventional manner such as by employing vertical axles **76, 78** and suitable retainers **80.** The wheels **72, 74** ride against the vertical surface **16** of the curb **12** when the device is in use. (See FIG. **1**).

A gage and marking assembly **82** pivotally connects to a horizontally disposed wheel bracket, for example, bracket **64** and includes a channel-shaped connecting bracket **84** which is affixed to the wheel bracket **64** by means of a vertical headed pin **86** and a securing end nut **88.** A spring **90** surrounds the pin **86** and is formed with radially projecting ends **91, 93.** The spring ends **91, 93** respectively bias against the web **92** of the connecting bracket **84** and the web of the wheel bracket **64** in a manner to continuously bias the gage and marking assembly **82** about the vertical pin **86** in a radial direction toward the vertical surface **16** of the curb **12.** In the fully biased position **94** (FIG. **2**), the gage and marking assembly **82** positions inwardly from the horizontally oriented wheels **72, 74.** Thus, when the wheels **72, 74** are urged fully against the vertical surface **16** of the curb **12** for rolling thereover, the bias of the spring **90** continuously urges the circular brush **96** of the gage and marking assembly **82** into peripheral contact with the vertical curb surface **16.**

A vertical socket **100** secures to web **92** of the connecting bracket **84** in tight engagement to move about the pin **86** when the bracket pivots about the pin. A vertical gage rod **98** is a sliding fit within the vertical socket **100** and may be vertically adjusted relative to the socket by means of the set screw nut **102.** The set screw nut is threadedly adjustable relative to the socket **100** by threaded engagement upon the threaded boss **104.** In the embodiment illustrated, one face **106** of the gage rod **98** is provided with a plurality of vertically spaced, semi-circular recesses **108** which are provided for height adjustment purposes. Preferably, the recesses **108** are spaced in known increments along the entire height of the gage rod **98,** for example, in one inch increments. The semi-circular recesses **108** position within the vertical socket **100** in a manner to face in the direction of the set screw nut **102.** The threaded boss **104** is drilled or otherwise machined to provide a horizontal opening (not illustrated) which communicates with the vertical channel **110** of the socket **100** within which the gage rod is vertically slidable. As best seen in FIG. **3,** the set screw nut **102** carries an inwardly facing spring **112** which inwardly supports a hardened steel ball **114.** When the nut **102** is threadedly engaged upon the boss **104,** the spring **112** is compressed within the horizontal opening of the boss to bias the steel ball **114** against the face **106** of the vertical gage rod **98.** When a semi-circular recess **108** horizontally aligns with the ball **114,** the ball is urged by the spring **112** to seat within a recess **108** to thereby serve as a detent to discourage further vertical movement of the gage rod **98** relative to the vertical socket **100.** Thus, the gage rod can be readily adjusted to any desired vertical position within the socket **100** and can be locked in the desired relative vertical position by means of the set screw nut **102,** the affixed spring **112** and the end positioned steel ball **114.**

The vertical gage rod **98** extends through the vertical channel **110** of the socket **100** and terminates below the vertical socket **100** in a threaded end **116.** A horizontal strut **118** affixes to the bottom of the vertical gage rod **98** in conventional manner, such as by employing an opening **121** which receives the threaded end **116** and secures thereto by means of a nut **120** and washer **122.** The strut **118** has no motion relative to the

gage rod **98** and accordingly, when the gage rod is pivoted about the vertical pin **86**, the affixed strut **118** will also similarly pivot. The strut **118** outwardly is provided with a second opening **124** through which is mounted the threaded spindle **126** of the brush platform **128**. Suitable washers **130, 131** and nut **132** are employed to secure the threaded spindle **126** within the strut opening **124**. The spindle **126** connects to the brush platform **128** in a bearing connection so that the platform freely rotates about the spindle **126**. Accordingly, the threaded spindle **126** is affixed to the horizontal strut **118** in a manner to permit free rotation of the circular brush **96** relative to the frame members **18**, 20 for curb marking purposes when the gage **10** is rolled over the curb surfaces **14, 16.**

The brush platform **128** is provided with an upwardly facing, concentric, threaded well **134** and outwardly carries a peripherally positioned, circular brush **96.** In the embodiment illustrated, the circular brush **96** is retained within a pair of split, circular carriers **136** and preferably is fabricated of felt or other material suitable to retain paint for curb marking purposes. A plurality of radially extending openings (not shown) intercommunicate portions of the circular brush **96** and the bottom of the well **134** in a manner to uniformly saturate the entire periphery of the brush **96** with paint (not shown) from the paint container **138.** The paint container **138** comprises a generally cylindrical reservoir **140** which is fabricated of hollow configuration to retain a quantity of suitable paint therein. The paint container **138** terminates downwardly in a threaded connector **142** which threadedly engages the well **134** in a leakproof manner. The connector **142** terminates downwardly in a needle valve opening **144** through which paint from the reservoir **140** flows by gravity into the well **134.** A needle valve **146** adjustably engages the threaded top opening **148** of the reservoir **140** through a soft washer seal **150** to control the flow of paint (not shown) into the well **134.** Preferably, the top of the paint container **138** is provided with a plurality of circularly positioned notches **152** and the needle valve **146** is equipped with a radially extending spring retainer **154** which is securely affixed near the top of the needle valve **146.** The spring retainer **154** rides about the top of the reservoir when the needle valve is being adjusted and seats within one of the notches **152** to retain the needle valve **146** in a desired adjustable position to assure adequate paint flow.

Preferably, a second face **156** of the gage rod **98** is provided with a plurality of height gaging marks **158** which are read directly at the top **160** of the vertical socket **100.** The geometry of the system is designed so that the gage marks **158** read directly in inches or other measurements to reflect the precise distance that the circular brush **96** is positioned below the top horizontal surface **14** of the curb **12** when the gage rod **98** is moved to any of its vertically adjustable positions in the manner hereinbefore set forth. Thus, when it is desired to grade a street surface to a specified distance below the top horizontal surface **14** of a curb, for example, eight inches, the set screw nut **102** is backed out of the threaded boss **104** sufficiently to permit the gage rod **98** to be vertically moved relative to the vertical socket **100.** When a height marking **158** corresponding to eight inches appears at the top **160** of the vertical socket **100,** the set screw nut **102** is then threadedly engaged into the threaded boss **104.** In this position, the spring **112** biases the steel ball **114** into a semi-circular recess **108** which corresponds to the desired height to thereby maintain the gage rod **98** in the desired vertical position.

The curb marking gage **10** is then applied over the curb **12** in the manner illustrated in FIG. **1** with the forward and rearward upper wheels **56, 58** in contact with the horizontal surface **12** and with the horizontally oriented wheels **72, 74** in contact with the vertical curb surface **16.** With curb marking gage **10** in this position, the bias of the spring **90** urges the circular brush **96** into contact against the vertical surface **16** for curb marking purposes. When the curb marking gage **10** is thus positioned, the device is then wheeled along the curb **12** by holding the gage by the handle **24** and in a longitudinally extending direction, care being taken to assure that all of the wheels **56, 58** and **72, 74** continuously contact the respective curb surfaces **14, 16.** The brush platform **128** and the affixed circular brush **96** revolve about the spindle **126** to thereby paint a stripe **162** at the precise, desired elevation upon the vertical curb surface **16.**

Although we have described our invention with a certain degree of particularity, it is understood that the present disclosure has been made only by way of example and that numerous changes in the details of construction and the combination and arrangement of parts may be resorted to without departing from the spirit and scope of the invention as hereinafter claimed.

We claim:

1. In a curb marking gage for use with a curb having a horizontal surface and a vertical surface, the combination of

A. a frame;

B. a plurality of curb contacting members attached to the frame to permit horizontal movement of the frame relative to the curb,

1. a first portion of said curb contacting members rolling over the vertical surface,

2. said first portion having inner extremeties which contact the vertical surface,

a. the inner extremeties defining a vertical plane;

C. a socket affixed in pivotal relation to the frame

1. said socket being provided with a vertically disposed opening,

2. said socket having no vertical movement relative to the frame;

3. the socket having pivotal movement relative to the frame from an initial position to a curb marking position,

D. curb marking means carried by said socket in a vertically adjustable manner relative to the frame to place a mark upon the vertical surface of the curb,

1. said curb marking means including a circular brush, a paint reservoir, a spring, a strut and bracket assembly comprising a strut and a bracket, said assembly being pivotally connected and an affixed gage rod,

2. a portion of the periphery of said circular brush being positioned inwardly of the vertical plane when the socket is in its initial position,

3. the periphery of said circular brush being forced against the vertical surface when the socket is urged to its curb marking position,

4. the spring continuously biasing said socket and said circular brush into contact with the vertical

surface when the curb contacting members are positioned in contact with the curb,

5. the gage rod being vertically movable within the socket to a plurality of vertical positions relative to the frame to vary the height of the brush relative to the frame,

a. means to retain the gage rod in any of the vertical positions to maintain the circular brush at a desired elevation relative to the vertical curb surface,

6. the gage rod terminating downwardly in a strut connection end,

a. a strut rigidly connected to said end and extending therefrom to provide an extension, the said circular brush being connected to said extension in a rotatable junction whereby the circular brush freely rotates for curb marking purposes when the circular brush is biased into

contact with the vertical surface and when the curb marking gage is moved longitudinally relative to the curb,

7. the paint reservoir feeding paint to the circular brush,

a. said paint reservoir and said circular brush being affixed to the strut in spaced relationship from the gage rod,

b. said paint reservoir being provided with paint flow control means to regulate the volume of paint flow to the said circular brush.

2. The curb marking gage of claim 1 wherein the means to retain said gage rod include a plurality of vertically spaced recesses in said gage rod and the socket is provided with a spring biased ball which is urged into the recesses to secure the gage rod in any one of a number of vertically adjustable positions.

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