Aug. 16, 1960 G. GRESHAM 2,949,068

ROAD AND SIDEWALK JOINTER

Filed Oct. 11, 1956

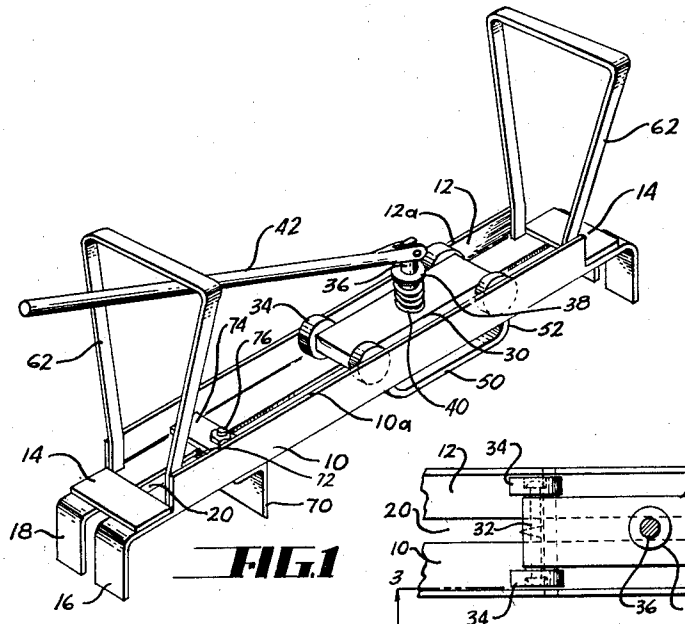


FIG. 1

FIG. 2

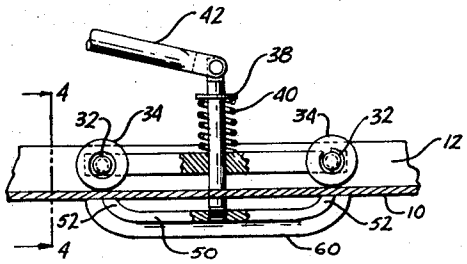


FIG. 3

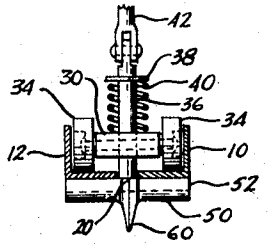


FIG. 4

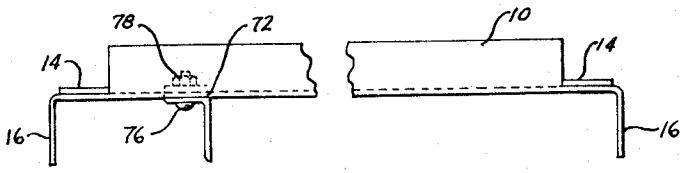


FIG. 5

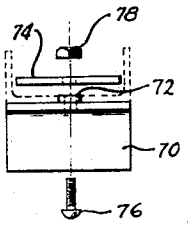


FIG. 6

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ROAD AND SIDEWALK JOINTER

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5 Claims. (Cl. 94—45)

This invention relates to a road and sidewalk jointer and more particularly to a manually operated road and sidewalk jointer.

In laying concrete sidewalks and roads it is customary to use forms extending on the sides of the concrete. The main body of concrete consists of a continuous length ribbon-like slab. As is well known to those skilled in the art, there is expansion and contraction of sidewalks and pavements due to temperature changes resulting in the development of cracks. That being the case, it is common practice to provide seams at predetermined intervals, the seams forming expansion joints in the laying of sidewalks and driveways. Instead of providing seams extending through the body of concrete, grooves are made in the upper surface of the sidewalk or the driveway. As for example, if the widewalk is 4 ft. wide, the seams may then be spaced 4 ft. apart, so as to provide substantially square blocks. When expansion and contraction takes place, due to changes in temperatures, the concrete sidewalk or driveway, as the case may be, cracks along the seams or grooves placed in the upper surface of the concrete.

Small operators usually place a straight edge crosswise of freshly laid concrete and manually make a groove by means of a hand operated tool, using the straight edge as a guide. Due to the cement being freshly laid, it is customary to lay a board for supporting the knees of the person who manually makes the groove.

An object of this invention is to provide a portable tool that is inexpensive and at the same time efficient, accurate, and easily manipulated, to provide the grooves across the cement slab, this tool being operable from one side of the concrete, so as to eliminate the necessity for manually making the groove.

Other objects and advantages reside in the construction of parts, the combination thereof, the method of manufacture and the mode of operation, as will become more apparent from the following description.

Referring to the drawings, Figure 1 is a perspective view of the device used in forming the grooves.

Figure 2 is a fragmentary top view with the retaining pin shown in section.

Figure 3 is a fragmentary cross sectional view, taken substantially along the line 3—3 of Figure 2.

Figure 4 is a cross sectional view, taken substantially along the line 4—4 of Figure 3.

Figure 5 is a side elevational view of the stationary frame with an attachment for accommodating various widths between forms.

Figure 6 is an exploded view of the attachment shown in Figure 5.

In the drawings, the main frame consists of a pair of angle bars **10** and **12**. These angle bars are held in fixed spaced relation by a pair of transverse frame members **14**.

It is to be noted, that the side flanges **10***a* and **12***a* have been severed adjacent the transverse bars **14**. The ends of the horizontal flanges of the angle bars or rails **10** and

12 extend downwardly so as to form feet or legs **16** and **18**. The transverse bars **14** are preferably welded to the horizontal flanges of the angle bars **10** and **12**.

The inner margin of the horizontal flange of the angle bars **10** and **12** are arranged in spaced relation from each other, so as to form a slot **20**. The horizontal flanges of the bars **10** and **12** cooperate to form a track for a carriage consisting of a horizontal main body member **30** supporting a pair of axles **32** and having one axle at each end. Each axle has a pair of wheels **34** mounted thereon. The wheels **34** travel on the upper side of the horizontal flanges of the angle bars **10** and **12**.

The horizontal frame member **30** is provided with a centrally disposed aperture receiving a vertical mounted pin **36**, having a washer **38** fixedly mounted thereon, and biased upwardly by a helical spring **40**. The upper surface of the pin **36** is pivotally attached to a handle **42**. The lower end of the pin **36** threadedly engages a smoothing plate **50** having upwardly turned ends **52**. The upwardly grooved ends of the plate **50** are biased upwardly against the under side of the angle bars **10** and **12**. This plate **50** has a width such that the outer limits of the plate **50** are flush with the outer side of the vertical flanges of the angle bars **10** and **12**.

The longitudinal center of the plate **50** and the arcuate ends **52** are provided with a downwardly, and forwardly, and rearwardly extending rib or scoring tool **60**. This rib or scoring tool is pointed, so as to terminate in a comparatively sharp edge, as clearly seen in Figure 4.

For convenience in handling the device, a pair of bails **62**, one adjacent each end of the frame structure, is welded or otherwise secured adjacent the ends of the vertical flanges of the angle bars **10** and **12**. The handle **42** extends underneath the loop of one of the bails.

The length of the main frame, that is, the angle bars **10** and **12**, is preferably such that legs **16** and **18** extend downwardly and rest upon the lateral forms used in retaining the concrete. As for example, if the device is designed for use for a sidewalk, 4 ft. wide, the length of the bars **10** and **12** is slightly greater than 4 ft., so that the device may separate the distance across the concrete.

Suitable markers may be placed in the forms, as for example, wood forms are used. Nails may be partially driven into the forms at spaced intervals, the intervals being equal to the distance between adjacent grooves or score lines. If the sidewalk is 4 ft. wide the nails will be spaced 4 ft. apart, one nail being located on each side of the sidewalk. Two men may then pick up this device by the bails **62** and place the device in proper relation to the nails, or the markings. The handle **42** is moved to and fro to move the smoothing plate and the scoring tool across the sidewalk, the scoring tool being guided by the carriage having the wheels **34** mounted on the track formed by the angle bars **10** and **12**. The scoring tool **60** penetrates the freshly laid concrete. The smoothing plate smoothes the concrete adjacent the score lines or grooves.

When one groove has been completed, the device is moved to the position of the next groove and the operation then repeated, these operations being repeated until the sidewalk or driveway, as the case may be, has been divided into sections of the desired length.

In Figures 5 and 6 an attachment has been provided, so that in the event a device is designed for use with a given spacing between the forms, the same device may be used with forms that are spaced closer together. For example, if the device is designed for use with forms that are 4 ft. apart, then the attachment may be used to adapt the device for use with forms that are spaced 3 ft. apart, or 3½ ft., 2 ft. or 2½ ft., or whatever the distance happens to be.

This attachment consists of an angle bracket **70**, the lower margin of which is coplanar with the lower margins of the feet **16** and **18**. This angle bracket **70** is provided with a spacer **72** snugly seated against the side flanges of the main frame members **10** and **12**. A clamping plate **74** is provided with an aperture in the center thereof registering with an aperture extending through member **72** and a horizontal flange of the angle bracket **70**. A bolt **76** passes through the aperture in the angle bracket **70**, the spacer **72** and the clamping plate **74** and threadedly receives a nut **78**, so that upon the nut **78** being tightened upon the bolt **76**, the angle bracket **70** is clamped in position so that the vertical flange may function as a leg for use with narrower width forms than the width of the widest range of forms with which the device may be used without the attachment.

Graduations, not shown, may be provided on one of the horizontal flanges of the main frame angle bars **10** and **12** so as to expedite the adjustment of the attachment to the desired position for use with forms of a predetermined width.

The device disclosed herein is readily transported, is easily manipulated, is inexpensive, but at the same time, dependable and efficient.

Although the preferred embodiment of the device has been described, it will be understood that within the purview of this invention various changes may be made in the form, details, proportion and arrangement of parts, the combination thereof and mode of operation, which generally stated consist in a device capable of carrying out the objects set forth, as disclosed and defined in the appended claims.

Having thus described my invention, I claim:

1. A concrete jointer for making a groove in newly laid concrete such as sidewalks, roads, et cetera, which concrete is confined in forms, said jointer including a pair of parallel horizontal angle bars having the lower flanges arranged in a horizontal plane and spaced apart so as to form a slot therebetween, the vertical flanges of the angle bars being located along the outer margins of the horizontal flanges, means engaging the ends of the angle bars for holding the angle bars in fixed spaced relation from each other, a carriage having wheels mounted on top of the horizontal flanges and positioned between the vertical flanges, a smoothing plate mounted on the under side of the horizontal flanges, said smoothing plate having upwardly curved ends engaging the under side of the horizontal flanges, yieldable means extending through the slot and secured to the carriage and to the smoothing plate for biasing the curved ends against said flanges, said smoothing plate having a downwardly directed scoring tool, and handle means attached to the carriage for actuating the carriage upon the horizontal flanges to cause the scoring tool to form a groove in the underlying concrete and to cause the smoothing plate to smoothen the concrete on the sides of the groove.

2. A concrete jointer according to claim 1, wherein the horizontal flanges extend outwardly and downwardly from the ends of the vertical flanges, the downwardly directed portions forming supporting legs, and wherein the means for securing the angle bars together includes plate-like members extending over the horizontal extensions of the angle bars and welded thereto, the downwardly directed leg portions forming legs for supporting the jointer on the concrete forms.

3. A concrete jointer according to claim 2, wherein an adjustably mounted attachment is provided, said attachment including an angle bracket underlying said angle bars, the lower margin of which is coplanar with the lower ends of the downwardly directed leg portions, and means for adjustably securing the angle bracket to the angle bars, said angle bracket cooperating with the downwardly directed leg portions on one end of the angle bars to support the jointer.

4. A manually portable concrete jointer for making a groove in a sidewalk of newly laid concrete, which concrete is confined in forms, said jointer including a pair of parallel horizontal rails having the lower margin arranged in a horizontal plane, means engaging the ends of the rails for holding the rails in fixed spaced relation so as to form a slot therebetween, a carriage mounted on top of the rails, a smoothing plate mounted under said rails, said smoothing plate having upwardly curved ends, said smoothing plate engaging the under side of the rails, means extending through the slot for securing the smoothing plate to the carriage, said smoothing plate having a downwardly directed scoring tool for producing a score line in the concrete, a handle connected to the last mentioned means for moving the carriage and the smoothing tool along the rails to score the freshly laid concrete, and wherein the means extending through the slot includes a pin threadedly attached to the smoothing plate, said pin extending upwardly through the slot and through a centrally disposed aperture in the carriage, and a compression spring mounted upon the pin above the carriage and against a shoulder on the pin for yieldably urging the smoothing plate against the under side of the rails and the carriage into contact with the rails.

5. A concrete jointer according to claim 4, wherein the jointer is provided with downwardly projecting legs adapted to engage the forms.

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