March 13, 1956 E. A. HERZOG 2,738,151

PIPE-SUPPORTING EXPANSION ROCKER

Filed Oct. 4, 1951

Fig. 1

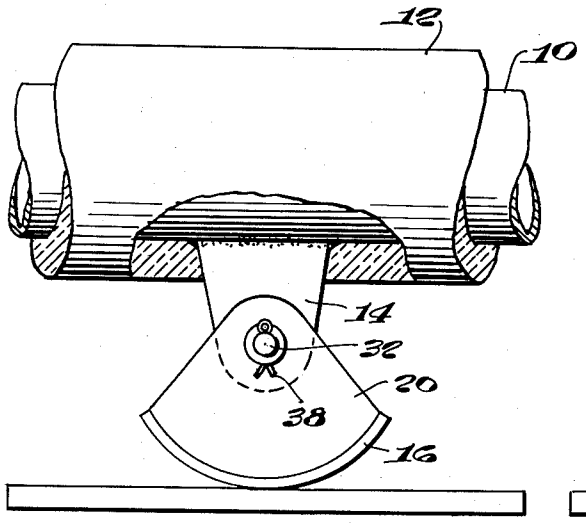
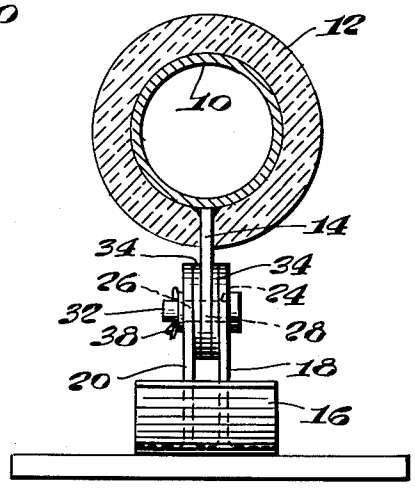


Fig. 2



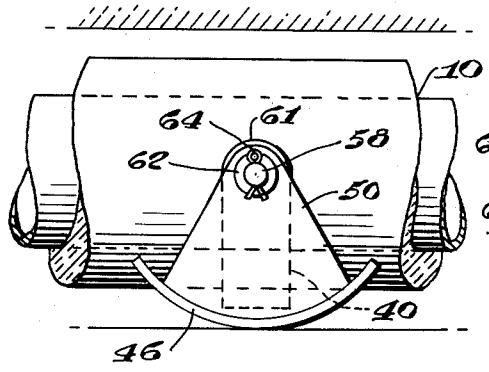


Fig. 3

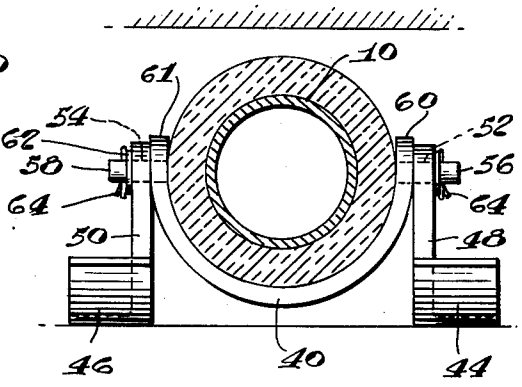


Fig. 4

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United States Patent Office 2,738,151
Patented Mar. 13, 1956

2,738,151

PIPE-SUPPORTING EXPANSION ROCKER

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Application October 4, 1951, Serial No. 249,674

1 Claim. (Cl. 248—55)

This invention relates to a pipe-supporting expansion rocker.

One object of the invention is to provide a novel, simple and inexpensive pipe-supporting expansion rocker for supporting a length of pipe upon and above a fixed surface whereby to permit longitudinal movement of the pipe upon expansion and contraction thereof by the rocking of the rocker upon said surface.

Another object of the invention is to provide a novel pipe-supporting expansion rocker which is particularly adapted to support and maintain a pipe line at a uniform distance from a fixed surface extending parallel to said pipe line.

A still further object of the invention is to provide a novel expansion rocker of the character specified which is particularly useful in supporting a length of pipe in a confined space where headroom is at a minimum, such as in trenches, tunnels, under piers and the like.

With these general objects in view and such others as may hereinafter appear, the invention consists in the pipe-expansion rocker and pipe-supporting means hereinafter described and particularly defined in the claim at the end of this specification.

In the drawings, Fig. 1 is a partially broken-away side elevation of one embodiment of the present invention; Fig. 2 is an end view of the embodiment shown in Fig. 1; Fig. 3 is a side elevation with portions broken away of another embodiment of the invention; and Fig. 4 is an end view of the embodiment shown in Fig. 3.

In general, the present invention contemplates a pipe-supporting expansion rocker which is particularly adapted to efficiently support the lengths of pipe in a piping system while permitting longitudinal movement of the pipe in the system caused by the expansion and contraction of the pipe occurring as a result of extreme temperature changes within the system.

In general, the invention contemplates a pipe-expansion rocker adapted to support the length of pipe above and at a short distance from a fixed surface, which may be a structural member forming a part of the building, or a surface, such as the bottom of a tunnel, and which preferably extends parallel to and short distance below the pipe. The rocker is provided with a base having a curved bearing surface for engaging and resting upon the surface from which the pipe is to be supported. The expansion rocker is provided with a pipe-engaging member, which may or may not be welded or secured to the pipe, and provision is made for pivotally connecting the curved rocker base, whereby longitudinal movement of the pipe under contraction and expansion serves to effect rocking of the base on its support without disturbing the elevation of the pipe.

Referring now to the drawings, **10** represents a section of pipe which is covered by a layer of any usual or preferred insulating material **12**. A portion of the insulating material **12** on the underside of the pipe **10** is removed and an upper metal plate **14** of segmental shape is secured thereto either by welding or other suitable means

so that the plate **14** depends therefrom. In practice, a plurality of the upper plates **14** are secured in such manner to the pipe line at spaced intervals along its length. As best shown in Fig. 2, a rocker-base member **16** cut from an 8-inch standard pipe section is provided with a pair of upstanding rocker legs **18, 20** spaced a predetermined distance apart and welded or otherwise secured to said base **16**. The lower portion of the upper plate **14** and the upper portion of the rocker legs **18, 20** are provided with holes **24, 26, 28** of the same dimensions particularly adapted to be aligned and to receive a pivot pin **32** extended through said aligned holes **24, 26, 28** for pivotally connecting the upper plate **14** and the rocker base **16**. A plurality of asbestos washers **34** of a size such that they may be slipped over the pivot pin **32** are mounted thereon between the legs **18, 20** and the plate **14** and serve to absorb and reduce the frictional wear between such elements, and the pivot pin is secured in place by a cotter pin **38** as shown.

As may be readily seen from the foregoing description, the present expansion rocker comprises a relatively small number of operating parts of simple and economical construction enabling manufacturing-cost and maintenance expenses to be minimized.

A modified form of the present invention is disclosed in Figs. 4 and 5. This form of the invention is particularly constructed and arranged for use in supporting pipe lines in confined areas, such as under piers and in tunnels, wherein headroom is at a minimum. The pipe **10** is supported in a concave yoke **40** of a suitable dimension such that approximately only the lower one-half of the pipe **10** is in contact with the concave inside portion of the yoke **40**. Rocker bases **44, 46**, generally triangular-shaped in side elevation, are provided with upstanding legs **48, 50** which are welded or secured by other suitable means within the concave portion of the rocker bases, one leg of each base being disposed in close proximity to one of the edges of said bases **44, 46**, as best shown in Fig. 4. The upper portion of each of the rocker legs **48, 50** is provided with a hole **52, 54**, and the yoke **40** has outwardly extended pintles **56, 58** projecting from the outer portions **60, 61** thereof through which the pintles **56, 58** may be extended. Lock washers **62** and cotter pins **64** secure the parts in operative position permitting the rocker bases **44, 46** and integral legs **48, 50** to freely pivot on the pintles **56, 58**.

In practice, a plurality of the yokes **40** and pivotally connected rocker bases **44, 46** with legs **48, 50** are positioned along the length of the pipe line to be supported at spaced intervals. When the pipe line expands and/or contracts, the resulting longitudinal movement is permitted by the rocking movement of the expansion rocker such that the pipe line remains level and in proper operation at all times.

The rocker bases **44, 46** may be cut from 8-inch standard pipe sections and may be of any dimension depending upon the amount of longitudinal movement of the pipe line in order that the pipe line be kept level.

In accordance with the present invention and for best results, the rocker base is made concentric with respect to pivot pin as disclosed in Figs. 1 and 2 and the rocker bases concentric around the yoke pintles as shown in Figs. 3, 4. This particular structure enables the length of pipe supported by either form of the present expansion rocker to remain level at all times regardless of the amount of longitudinal movement of the pipe caused by its expansion and/or contraction. This constant-level feature is advantageous when the pipe so supported is laid in areas in which there is a limited amount of headroom because it substantially eliminates leakage at successive pipe joints and other damage to the supported pipe line caused by bending, breaking or cracking of the pipe which might

occur as the result of strain and stress exerted thereon should the pipe line become unlevel due to the expansions and contractions therein.

In the embodiments of the invention above described, it will be observed that the pivotal connection between the rocker base and the pipe-engaging member is detachable, thus permitting different lengths of pipe-engaging members and/or different heights of rocker bases to be employed. By locating the pivotal openings in the upstanding legs of the rocker bases at the center of curvature of the rocker base, the rocking movement of the base does not affect the elevation of the pipe, irrespective of the length of the pipe-engaging member.

While the preferred embodiments of the invention have been herein illustrated and described, it will be understood that the invention may be embodied in other forms within the scope of the following claim.

Having thus described the invention, what is claimed is:

A pipe-supporting expansion rocker for supporting a length of expandable pipe upon a fixed flat surface in spaced relation thereabove, comprising: a plate secured to said pipe in depending relation therefrom and having

an aperture adjacent its lower end; a pair of sector-shaped spaced legs provided with aligned apertures adjacent their upper ends, said legs receiving said plate member between their upper ends; a pivot pin extending through the apertures in said legs and said plate securing said legs to said plate for rocking movement with respect thereto; and a rocker base secured to the lower ends of said legs, said rocker base being convexly curved to define a segment only of a cylinder having said pivot pin as its axis.

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