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VISE

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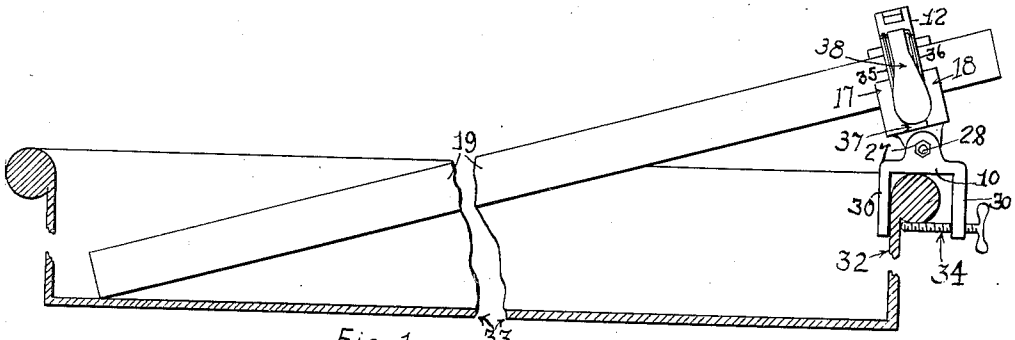


Fig. 1

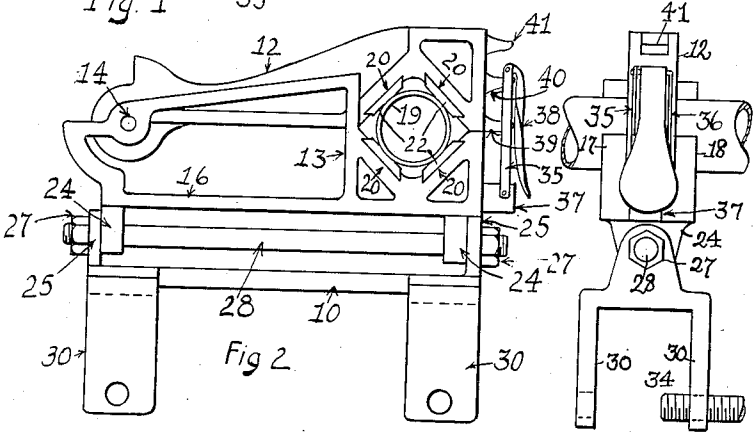


Fig 2

Fig. 3

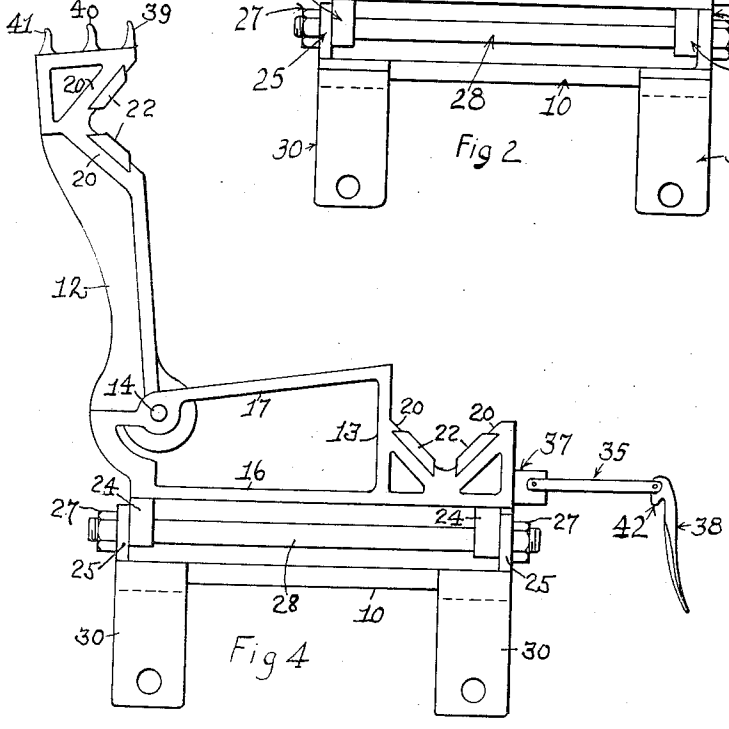


Fig 4

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VISE

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1 Claim. (Cl. 81—41)

This invention relates to a pipe vise especially adapted among other uses to be employed for holding a length or section of pipe while the latter is being cleansed on its interior.

The invention further has for its object to provide a supporting member for the jaws of the vise, which is capable of being mounted upon an upright wall of a sink and upon which supporting member one of said jaws is mounted to rock thereon, to enable both jaws to be adjusted into different angular positions with relation to the sink, to enable pipes of different lengths to have their free ends rest upon the bottom of the sink and be supported thereby, irrespective of the depth of the sink or length of the pipes within limits.

Provision is also made for enabling the vise to handle pipes of different sizes or diameters, and for locking the jaws of the vise in their different closed positions.

These and other features of this invention will be pointed out in the claim at the end of this specification.

Fig. 1 is a longitudinal section of a sink having attached to one end thereof, a vise embodying this invention;

Fig. 2, a side elevation of the vise shown in Fig. 1 in its closed position on a pipe;

Fig. 3, an end elevation of the vise shown in Fig. 2 looking toward the left, and

Fig. 4, a side elevation of the vise in its open position.

Referring to the drawing, 10 represents a base or supporting member for the jaws 12, 13, of the vise, which jaws will be hereinafter referred to as the upper and lower jaws.

The upper jaw 12 is made in the form of a lever which is pivoted at its rear end at 14 to the rear end of the lower jaw 13, and said upper jaw 12 is designed to be turned on its pivot 14 in a substantially vertical direction to open and close the same.

The lower jaw 13 is designed to be normally stationary and also to be capable of being turned or rocked in a direction substantially at right angles to that in which the upper jaw 12 is moved.

The lower jaw 13 is preferably made as herein shown and consists of a frame having a bottom plate or member 16 and substantially parallel side members 17, 18 spaced apart for the passage between them of the upper jaw 12 when the latter is moved into its closed position and to restrict lateral movement of the upper jaw 12 and thereby relieve the pivot 14 from strain.

The rear end of the upper jaw 12 is pivoted between the side members 17, 18 near the rear ends thereof.

The front ends of the upper and lower jaws 12, 13 extend beyond the front ends of the side members 17, 18 and are suitably shaped to grasp between them a pipe 19, and in the present instance the jaws 12, 13 are shown as provided with substantially straight faces 20, with adjacent faces arranged substantially at right angles to each other. Each of the upper and lower jaws 12, 13 is provided with two faces which co-operate to form a square-shaped opening for the pipe 19, and each face 20 is preferably provided with a gripping member 22 of non-metallic material, preferably rubber, for firmly gripping the pipe 19 without marring the same, when the pipe is nickled or otherwise provided with a polished exterior surface.

The rubber gripping members 22 are preferably inserted into dovetailed recesses in the faces 20 of the jaws. By extending the front ends of the upper and lower jaws 12, 13, beyond the front ends of the side members 17, 18, the pipe gripping members are in the clear and are unobstructed for the ready insertion of the pipe between the upper and lower jaws.

The lower jaw 13 is pivotally mounted to turn in a plane substantially at right angles to the plane in which the pivoted upper jaw 12 is moved, and in the present instance this result is effected by providing the bottom member 16 of the lower jaw 13 with depending lugs or ears 24, which are normally clamped between upright legs or ears 25 on the supporting frame or base 10, by nuts 27 on a rod 28 extending through the lugs or ears 24, 25.

The base or supporting frame 10 is preferably made as a bar or plate having at its opposite ends pairs of depending legs or members 30, spaced apart to permit the base or supporting frame to be mounted upon the upright side or end wall 32 of a sink or like receptacle 33, and to be firmly secured to said sink by screws 34 rotatable in one leg of each pair and adapted to be turned up into engagement with the side or end of the sink upon which it is mounted, after the manner shown in Fig. 1.

The lower jaw 13 is capable of being rocked on the pivot rod 28, by loosening the nuts 27, so as to incline the vise with relation to the side or end of the sink upon which the base or supporting frame 10 is mounted, and when it has been turned into the desired position, the lower

jaw 13 is rendered stationary by turning up the nuts 27.

The ability to rock or turn the lower jaw 13 in a plane substantially at right angles to the plane in which the upper jaw is moved, is an important feature as it enables the vise to be adjusted on the sink so that the pipe 19 may be placed in different positions and particularly in different inclined positions, so as to enable the lower end of the pipe to rest upon and be firmly supported by the bottom of the sink, irrespective of the depth of the latter and of the length of the pipe.

The upper and lower jaws 12, 13 are designed to engage pipes of different sizes or diameters within limits, such for instance as 1", 1½" and 2" pipes, and provision is made for locking the upper jaw 12 to the lower jaw 13 in the different closed positions of the upper jaw.

In the present instance, one construction of locking device is shown, which consists of a lever 38 pivoted to one end of a yoke or stirrup comprising substantially parallel bars or links 35, 36, which are pivoted at their opposite end to a lug or projection 37 on the lower jaw 13. The lever 38 is designed to engage one of a plurality of lugs or projections on the upper jaw 12.

Three projections numbered 39, 40, 41, are herein shown, with which the lever 38 is engaged according to the size of the pipe 19. As represented in Fig. 2, the lever 38 is engaged with the intermediate lug 40 and when so engaged, the pipe 19 is of the intermediate size, to wit: 1½" in diameter.

When the pipe 19 is 1" in diameter the lever 38 is engaged with the uppermost lug 41, and when of 2" in diameter, the lever 38 is engaged with the lowest lug 39.

The locking lever 38 is provided with a cam or nose 42 (see Fig. 4), which firmly presses the upper jaw in engagement with the pipe bearing upon the lower jaw to cause the pipe to be firmly held by the vise.

The pipe may be quickly released from the vise, by turning the locking lever 38 upwardly from the position shown in Fig. 2, until the cam or nose 42 is disengaged from the lug 40, after which the lever 38 and the stirrup to which it is attached may be turned into the position shown in Fig. 4, thereby unlocking the upper jaw 12 which is then free to be turned upwardly into substantially the position shown in Fig. 4, so as to uncover the pipe and permit it to be removed by the operator.

The vise herein shown and described is especially adapted to be attached to sinks, in which pipes employed in dairies for conveying milk may be washed and rendered sanitary as required by the authorities, usually once a day.

As now commonly practised and known to us, sections of pipe connected with a pump employed to pump milk, as for instance the pipe 19 which conveys the milk from a cooler to a pasteurizer or other apparatus, is now commonly cleansed by disconnecting it from the pump line and placing it upon the floor. The operator then stands on the pipe and runs a swab or brush through the pipe.

This practice is not hygienic as the pipe frequently lies in an inch or more of water on the floor, which water may be contaminated from any source. The pipe sections are frequently from ten to twelve feet long, and swabbing or brushing of the pipe is more or less difficult. By means of the vise above described, the pipe section is capable of being swabbed or brushed on its interior under hygienic conditions, to wit: in a sink, which is capable of being rendered hygienic and in which the pipe may be inclined in different positions according to the length thereof, and have its lower or free end firmly supported on the bottom of the sink, while its upper end is firmly held by the vise attached to the side or end wall of the sink.

By providing for rocking of the lower jaw of the vise as above described, the vise can be attached to either end or side of the sink, which is most convenient to the operator, and yet have the free end of the pipe rest on and be firmly supported by the bottom of the sink. At the same time, the operator is free to move about and to employ both hands in washing out the pipe.

The nuts 27 may be set up so that the lower jaw may be prevented from being turned without first loosening up on the nuts, but it is preferred to set the nuts 27 up sufficiently to render the lower jaw stationary under normal conditions of use but so as to enable the lower jaw being rocked by the operator manipulating the pipe.

One construction of vise is herein shown and described, and while this construction may be preferred, it is not desired to limit the invention to the particular construction shown.

What is claimed is:

In a vise, in combination, a lower jaw comprising a bottom plate provided at its front end with a lower gripping member and at the rear of said lower grippng member with substantially parallel side members extended above the lower gripping member, an upper jaw comprising a lever pivoted at its rear end to said side members between the same and having its front end extended beyond the front ends of said side members and provided with an upper gripping member, said lever being interposed between said side members in its closed position so as to restrict lateral movement of said lever and relieve the pivot therefor from strain, while allowing the gripping members to be unobstructed for the ready insertion and removal of a pipe between said gripping members, a supporting member on which the bottom plate of the lower jaw is pivotally mounted to turn in a plane substantially at right angles to that in which the upper jaw is moved, and means for locking the upper and lower jaws in their closed position.

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