No. 680,609. Patented Aug. 13, 1901.

J. MARQUARDT.

PIPE HANGER.

(Application filed Oct. 12, 1900.)

(No Model.)

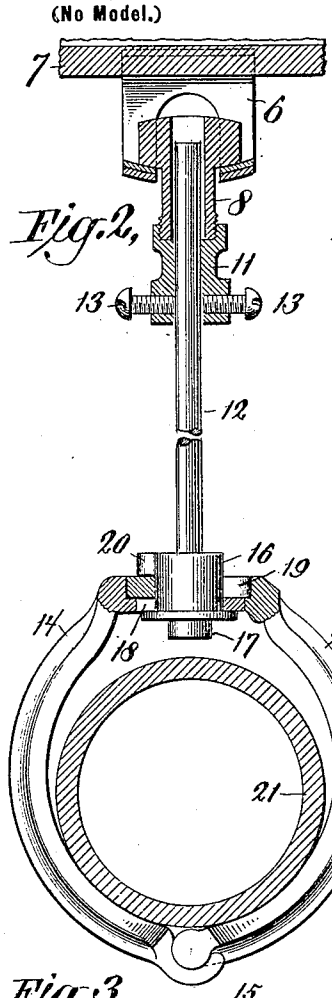


Fig. 2,

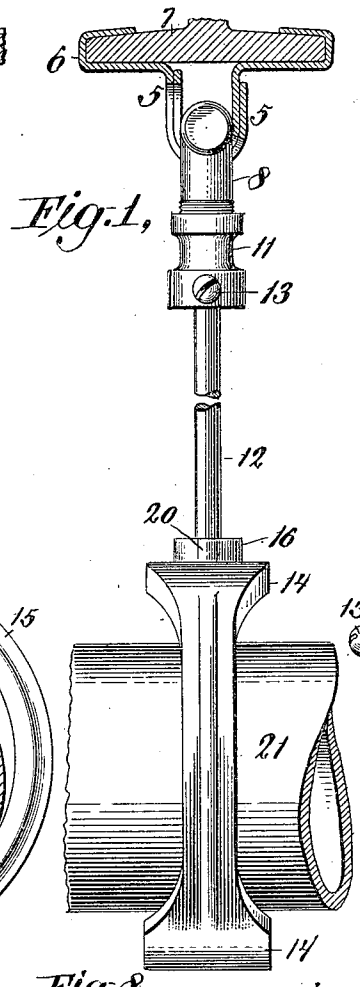


Fig. 1,

Fig. 9,

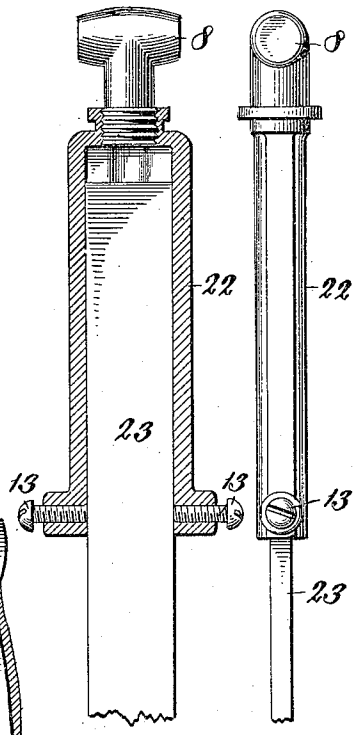


Fig. 10.

Fig. 3,

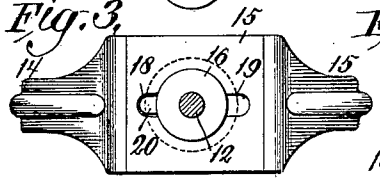


Fig. 8,

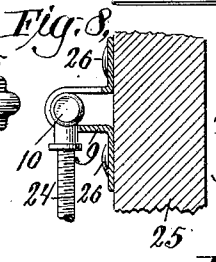


Fig. 7,

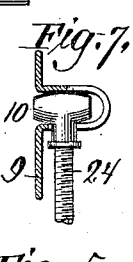


Fig. 6,

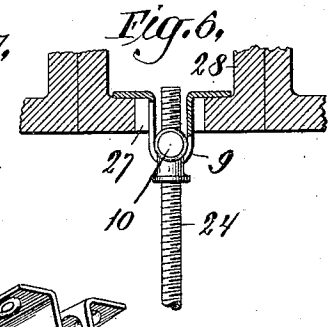


Fig. 4,

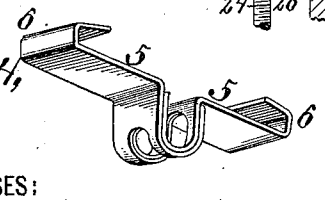
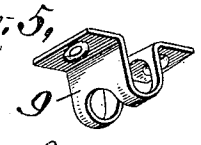


Fig. 5,



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PIPE-HANGER.

SPECIFICATION forming part of Letters Patent No. 680,609, dated August 13, 1901.

Application filed October 12, 1900. Serial No. 32,839. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH MARQUARDT, a citizen of the United States, and a resident of the borough of Manhattan, county of New York, city and State of New York, have invented certain new and useful Improvements in Pipe-Hangers, of which the following is a specification, reference being had to the accompanying drawings, forming part hereof.

This invention relates to hangers or supports such as are adapted for holding or supporting pipes or other objects. In the use of such hangers or supports various structures or parts of a building are encountered to which the hangers must be secured—such, for example, as wooden beams, iron beams or sections, or arches of hollow or fireproof bricks; and one of the objects of my invention is to provide for suitably attaching the hanger to any of such structures or parts.

Other objects of my invention are to provide for a ready adjustment of the hanger after the hanger has been secured or whenever desired and to provide sufficient freedom of movement in the hanger to accommodate the movements of the pipes, due to expansion and contraction and other causes, and to accommodate irregularities and inaccuracies in the location of the hanger.

My invention includes various improvements in hangers and parts thereof, all of which will now be particularly described with reference to the accompanying drawings, showing pipe-hangers embodying my invention.

Figure 1 is a side elevation of a pipe-hanger embodying my invention, showing a portion of a pipe supported thereby. Fig. 2 is an end elevation of the same, partly in central section. Fig. 3 is a plan view of the pipe-holder. Fig. 4 is a perspective of the looped supporting part. Fig. 5 is a perspective of a modified form of looped supporting part. Fig. 6 is a sectional elevation showing the looped supporting part of the form shown in Fig. 5 and engaged with a hollow brick and also showing a modified form of suspending part. Fig. 7 is a sectional elevation of the parts of the construction shown in Fig. 6 and illustrates the manner of engaging the parts. Fig. 8 is a similar view showing the same parts secured to a wooden beam at the side thereof. Fig. 9 is a sectional elevation showing another modified form of suspending part. Fig. 10 is a side elevation of the same.

The hanger in the several modifications shown in the drawings comprises a supporting part and a suspending part constructed to interlock with each other, the supporting part having a loop with a slot therein and the suspending part having a head constructed to enter the slot and engage with the loop. The supporting part has a base and a slotted loop, and in the construction of hanger shown in Figs. 1, 2, 3, and 4 the supporting part is made up of two overlapping slotted pieces 5 5, provided at its base with means for engaging opposing ledges or shoulders, such means being shown as hooks 6 6, formed in the ends of such slotted pieces and catching over the edges of an iron beam 7, from which the hanger is shown as suspended. The overlapping portions of the two slotted pieces 5 5 form a loop traversed longitudinally by a slot, the slot being considerably longer on one side of the center of the loop than on the other and closed at both ends. The rounded portion of the loop forms a part bearing at a distance from the base. The suspending part is provided with a head, shown as a T-head 8, of rounded cross-section and longitudinal section, which is constructed to enter the slot and engage with the loop of the supporting part, and to this end is narrower than the slot and longer than the width of the slot, so as to be capable of entering the slot when held parallel thereto on the side of the loop on which the slot is elongated toward the base, and after entrance into the slot of being turned through a right angle or quarter-revolution, so that the head crosses the slot and engages with the loop on each side thereof. The manner of the engagement or interlocking of these parts will be best understood by reference to Figs. 6, 7, and 8, in which the supporting part 9 is shown as in one piece having the slotted loop therein, this slotted loop and the head 10 of the suspending part being of the same construction as above described. Fig. 7 shows the position of the parts when first put together, the base of the supporting part being at the right with the long part of the slot downward and the head 10 having been turned

into a position substantially parallel to the slot and entered therein and having been moved horizontally and to the left to the position shown in Fig. 7. With the parts as thus shown the head 10 may be turned through a right angle or quarter-revolution on a vertical axis and then moved to the rounded part or bearing of the loop, and then the supporting part will turn freely in this bearing upon the rounded side projections of the upper part of the head 10 as trunnions or pivots and may be turned thereupon either through a right angle or quarter-revolution to the position shown in Fig. 6, corresponding to the position shown in Figs. 1 and 2, or through a half-revolution to the position shown in Fig. 8, or to any other desired position within the limits of its movement. With the two-piece supporting part shown in Figs. 1 to 5, inclusive, the T-head 8 by its engagement with the loop locks together the two pieces 5 5, composing the loop, thus effectually securing the supporting part in place, as well as interlocking the suspending part with the supporting part. The suspending part not only swings freely longitudinally by reason of the engagement with the loop of the rounded side projections of the T-head, but also has slight freedom of lateral movement by reason of the longitudinal curvature of the T-head, and in Fig. 2 the loop parts of the pieces 5 5 are shown as transversely rounded to correspond with this longitudinal curvature of the T-head for the purpose of facilitating this lateral movement. These movements of the suspending part not only accommodate longitudinal movement in the supported pipes, but also lateral movements and variations of alinement thereof, as well as irregularities or inaccuracies in the location of the hangers. In the suspending part, as shown in Figs. 1 and 2, the T-head 8 has a socket 11 shown as secured thereto, this socket holding an adjustable rod 12, which is shown as clamped therein by set-screws 13 13. The T-head 8 has an opening therethrough in line with the opening in the socket 11 to increase the extent of adjustment of the adjustable rod 12.

The pipe-holder is supported at the lower end of the adjustable rod 12 and comprises two arms 14 15, interlocking with each other at one end of each arm, as shown, the arm 14 having an open socket at its lower end which receives the rounded lower end of the arm 15, these two arms overlapping at the other end of each arm, as shown, the upper end of the arm 15 extending over the upper end of the arm 14. A key is provided for locking the overlapping ends together, such key being shown as a flanged sleeve 16, fitting loosely on the adjustable rod 12 and resting upon a head 17 thereon and passing through perforations in the overlapping ends of the arms 14 15. The walls of the perforations in the overlapping upper ends of the arms 14 15 are provided with slots 18 19, respectively, shown as diametrically opposite, and a projection 20 is provided upon the key or sleeve 16, this projection being shaped to enter and pass through the slots 18 and 19 of the overlapping arms.

In assembling the various pieces of the holder the key 16 is first slipped over the adjustable rod 12, and then the arms 14 and 15 are successively slipped over the key 16, the projection 20 passing through the slot 18 of the arm 14 and the key being then turned through half a revolution and then passing through the slot 19 of the arm 15. To close and lock the parts of the holder over a pipe to be supported, such as the pipe 21, the arms may be closed over the pipe, the upper end of the arm 15 being originally above and clear of the key 16, so that it may be readily opened sufficiently to take in the pipe, and the upper end of the arm 15 being then moved downward upon the key into contact with the upper end of the arm 14 and the lower end of the arm 15 being inserted in the socket at the lower end of the arm 14. The key 16 may then be turned so that the projection 20 is out of line with the slot 19, as to the position shown, and will lock the arms together.

A modified construction of the suspending part of the hanger which may be employed for supporting large ventilating-pipes is partly shown in Figs. 9 and 10, in which a socket 22 of substantially rectangular form is employed, having a rectangular opening to receive a flat metal rod, bar, or strip 23, the lower end of which may be suitably secured to the pipe to be supported. As the rectangular opening does not extend up into the T-head 8, the socket 22 is longer than the socket 11 to provide a considerable range of adjustment of the flat rod 23. The flat rod is adjustably held by set-screws 13.

Another modified form of suspending part is shown in Figs. 6, 7, and 8, in which the adjustable rod 24 is threaded directly into the T-head 10. The rod 24 may support a pipe-holder, such as is shown in Figs. 1, 2, and 3, or may be provided with any suitable means for engaging or supporting the pipe or other device to be supported. Other modified forms of suspending part may be employed—as, for example, the key 16 (shown in Figs. 1, 2, and 3) may be replaced by a screw-threaded socket to engage different forms of holders.

The modified construction of supporting part shown in Figs. 5 to 8, inclusive, and heretofore described as made of a single piece of metal 9 is adapted to be secured to the vertical face of a wooden beam 25, as shown in Fig. 8, by screws 26 passing through the base of the supporting part, as shown, and may be secured to any surface or wall or ceiling to which the supporting part may be held by screws, nails, or other fastening devices. It is also adapted for engaging with a surface of fireproof or hollow bricks. For this purpose an opening is made in one of the bricks,

as the opening 27 in the brick 28, (see Fig. 6,) sufficiently large to admit the supporting part 9 when turned with its flat ends or base substantially vertical or into the position shown in Fig. 8, and the supporting part after having been interlocked with the suspending part is turned to this position and pushed upward through the opening 27 and is then turned so that its base or flat ends shall be substantially horizontal and is lowered until these flat ends engage with the lower inner surface of the brick, as shown in Fig. 8. During these manipulations the adjustable screw-rod 24 should be screwed down, so as not to protrude above the T-head 10, as shown in Figs. 7 and 8; but with the parts in engaged position the screw-rod 24 may be screwed upwardly as far as the hollow in the brick 28 will permit, and thus a considerable range of adjustment is provided. It will be observed that when the screw-rod 24 protrudes above the T-head 10 it will effectually prevent dislodgment of the supporting part. It will also be observed that when the supporting part is secured to the side of a beam, as shown in Fig. 8, there is a clear space above the T-head, permitting the screw-rod 24 to be screwed upwardly to protrude above the T-head, as desired for the adjustment of the length of the suspending part of the hanger.

It is evident that various modifications other than those above described may be made in the construction of the several parts of my hanger.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A hanger comprising two interlocking parts, one of which is provided with a loop having a slot therein, said slot being closed at each end, and the other of which is provided with a head constructed to enter into engagement through said closed slot and to engage the inner face of said loop, substantially as set forth.

2. A hanger comprising a supporting part and a suspending part, the supporting part having a loop with a slot therein, said slot being closed at each end, and the suspending part having a head constructed to enter into engagement through said closed slot and to engage the inner face of said loop, substantially as set forth.

3. A hanger comprising a supporting part and a suspending part, the supporting part having a loop with a slot therein and the suspending part having a head constructed to enter into engagement through said slot and to engage the inner face of said loop, and means for adjusting the length of the suspending part, substantially as set forth.

4. A holder comprising two interlocking arms overlapping at their upper ends and perforated at their overlapping parts and provided with slots in the walls of the perforations, and a rotatable key constructed to enter the perforations and having a projection constructed to pass through the slots, substantially as set forth.

5. A hanger comprising a supporting part, a suspending part supported thereon, a rotatable key on the suspending part and two interlocking arms overlapping at their upper ends and perforated at their overlapping parts and provided with slots in the walls of the perforation, said rotatable key being constructed to enter the perforations and having a projection constructed to successively enter and pass through the slots, substantially as set forth.

6. A hanger comprising a supporting part having a loop with a slot therein, said loop made up of two overlapping slotted pieces each having means for engaging opposed ledges or shoulders, and a suspending part having a head constructed to enter into engagement through said slot and to engage said loop, the overlapping pieces being constructed so as to be locked together by the presence of the suspending part in the slot and the loose engagement of the head thereof with the loop, substantially as set forth.

7. A hanger comprising a supporting part having a loop with a slot therein, said loop made up of two overlapping slotted pieces each having a hook thereon, and a suspending part having a head constructed to enter into engagement through said slot and to engage said loop, the overlapping pieces being constructed so as to be locked together by the presence of the suspending part in the slot and the loose engagement of the head thereof with the loop, and means for adjusting the length of the suspending part, substantially as set forth.

8. A hanger comprising a supporting part having a loop therein with a slot in such loop, the slot being closed at both ends and elongated at one side of such loop, and a suspending part having a T-head constructed to enter the closed slot and engage the loop, said T-head having side projections of rounded cross-section and said loop being rounded, substantially as set forth.

9. A hanger comprising a supporting part having a loop therein, with a slot in such loop, the slot being closed at both ends and elongated at one side of such loop, and a suspending part having a T-head constructed to enter the closed slot and engage the loop, said T-head having side projections of rounded cross-section and said loop being rounded, and a suspending-rod adjustably secured to said T-head, substantially as set forth.

10. A hanger comprising a supporting part consisting of a base and a loop including a part bearing at a distance from the base, such loop having a slot formed therein at such bearing and such slot extending on one side toward the base and beyond the bearing, and a suspending part having a T-head narrower than the slot and longer than the width of the slot and of such length as to be capable of entering the slot at the side where

the slot is extended toward the base, substantially as set forth.

11. A hanger comprising a supporting part consisting of a base and a loop including a part bearing at a distance from the base, such loop having a slot formed therein at such bearing and such slot extending on one side toward the base and beyond the bearing, and a suspending part having a T-head of rounded cross-section and longitudinal section, such T-head being narrower than the slot and longer than the width of the slot and of such length as to be capable of entering the slot at the side where the slot is extended toward the base, substantially as set forth.

12. A hanger comprising a supporting part consisting of a base and a loop including a part bearing at a distance from the base, such loop having a slot formed therein at such bearing and such slot extending at one side toward the base and beyond the bearing, such base and loop made up of two overlapping slotted pieces 5, 5, each having a hook 6 thereon, and a suspending part having a T-head 8 of rounded cross-section and longitudinal section, such T-head being narrower than the slot and longer than the width of the slot and of such length as to be capable of entering the slot at the side where the slot is extended toward the base, and such T-head interlocking the two slotted pieces together, substantially as set forth.

13. A hanger comprising a supporting part, a suspending part supported free to turn thereon and having an adjustable rod, a rotatable key on said rod, and two arms adapted to hold a pipe and interlocking at one end of each arm and overlapping at the other end of each arm, said key engaging said overlapping portions of said arms, substantially as set forth.

14. A hanger comprising a part adapted to be secured to a support, such part having a depending rod, the key 16 thereon having the projection 20, and the arms 14 and 15 interlocking at their lower ends and having overlapping perforated upper ends, with slots 18 and 19 in the walls of such perforations, substantially as set forth.

Signed at the borough of Manhattan, county of New York, in the city of New York and State of New York, this 8th day of October, 1900.

JOSEPH MARQUARDT.

Witnesses:
HENRY D. WILLIAMS,
HERBERT H. GIBBS.