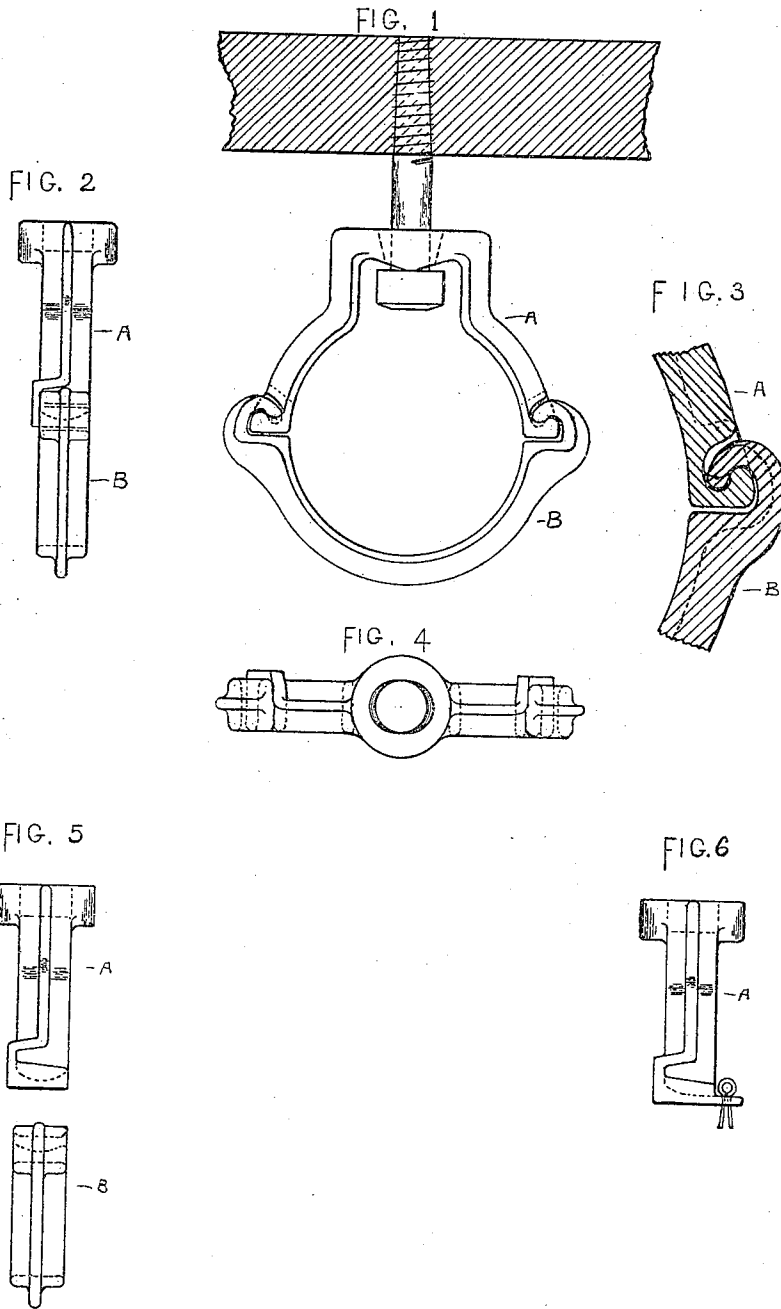


No. 801,409.

PATENTED OCT. 10, 1905.

W. C. SMITH.  
PIPE HANGER.

APPLICATION FILED OCT. 4, 1904.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

WILLIAM CLIFFORD SMITH, OF PHILADELPHIA, PENNSYLVANIA.

## PIPE-HANGER.

No. 801,409.

Specification of Letters Patent.

Patented Oct. 10, 1905.

Application filed October 4, 1904. Serial No. 227,109.

*To all whom it may concern:*

Be it known that I, WILLIAM CLIFFORD SMITH, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a new and useful Pipe-Hanger, of which the following is a specification.

My invention relates to that class of mechanical devices known as "pipe-hangers," and is used for suspending single lines of pipe from the ceiling or supporting members thereof in buildings where such pipes may be used as conveying mediums for fluids and gases. Its objects are to provide a hanger that is of simple construction, requiring a minimum amount of labor in its manufacture, and consequently of low cost; second, to provide a hanger that may be applied either before or after the pipe-line is in place; third, to afford a design that is readily adjustable in height without disturbance either of the hanger or the line of pipe; fourth, to produce a hanger that is not liable to become loose or displaced by jar or vibration, and, finally, the provision of a hanger free to conform to the general direction of the line of pipe irrespective of slight irregularities in the location of the supporting-bolts and also free to move with the contraction and expansion of the pipe itself without strain either to the hanger or the pipe carried by it. I attain these objects by the novel construction hereinafter more fully described, and shown in the accompanying drawings, forming part of this specification, in which—

Figure 1 is a front view of the hanger shown normally suspended in position. Fig. 2 is a side view of the same. Fig. 3 is an enlarged fragmentary section taken on the center line of Fig. 2, showing the formation of the joint between the two members. Fig. 4 is a plan view of the hanger. Fig. 5 is a side view of the members separated. Fig. 6 shows a modification of the upper member only.

Similar characters refer to similar parts throughout the several views.

In the drawings, A represents the upper member of the hanger, preferably a casting, malleable and homogeneous in its nature, in one piece. The upper member has an opening at the top for the free passage of the bolt, the said opening being elongated on its upper side so as to permit the hanger to perform its function of suspension of the pipe even if the pipe center is not vertically coin-

cident with the center of the supporting-bolt. To facilitate this object, and that without putting excessive strain on either the bolt head or body, the lower interior side of the top portion is fashioned in the form of an obtuse angle, the apex of the angle being on the center line of the bolt-opening and the direction of the ridge so formed being in the plane of the line of pipe. This arrangement permits of considerable sway of the hanger without danger to its supports, the head of the ordinary commercial bolt or coach-screw used acting as a fulcrum upon which the hanger may swing freely. I prefer to have a clear space between the top of the hanger and the ceiling or its supporting members, so as to permit of adjusting the bolt by the operation of common tools on its body immediately above the top of the hanger, the opening for the head of the bolt being of such size that it will readily turn within and in no way disturb the hanger or whatever may be supported by it. Depending from the top portion are oppositely-disposed side walls, preferably of T-section, forming a semicircular arch of appropriate size for the pipe used and adapted to extend over and around about one-half its circumference. The lower extremity of each of these side walls is carried outwardly, forming a projecting ledge having an upwardly-turned edge, while the outer rib or flange of the T-section is carried to one side beyond the edge of the frame and, continuing down, joins the ledge at its base, forming a recess or pocket open in one direction only. The other member B of the hanger is of the same general section and shaped on its concave inner and upper side to the lower part of the pipe. At its ends are inwardly-opening hook-shaped projections adapted to enter into and rest within the above-described pockets of the upper member A. It will be evident from this that the two members can be united by sliding the hooks of the lower member into the recesses of the upper, and that when so united the side edges will be in alinement, as the hook of the lower member will be against the rear of the pocket in the upper member, effectually preventing further side movement. Evidently the members cannot be vertically separated by pushing or pulling, and the only way to disconnect is by reversing the action of uniting. Hence the hanger is rendered practically safe against jar, vibration, or ordinary usage. In order, however, to positively pre-

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 vent displacement, I form depressions in the bottoms of the pockets or recesses of the upper member and a corresponding projection on the hook-points of the lower member. In  
 5 some cases I make the shape of these details semicircular—that is, a concave depression in the upper member and a convex projection on the lower member, allowing sufficient space  
 10 or clearance between the members so that they can be pushed together. When united, there is a small amount of vertical freedom, which is utilized by permitting the lower member to swing slightly on its seat in the  
 15 upper member, thus allowing for a certain amount of contraction and expansion in the pipe without displacement of the upper member. As an alternative to these methods I  
 20 have also provided a projecting foot, Fig. 6, extending from the ledge of the upper member in front of the pockets to carry some form of cotter-pin, the same being placed in  
 position after the upper and lower members are united, effectually preventing the possibility of displacement of the two parts.  
 25 It will be seen that this form of hanger comprises two integral parts or members produced by common foundry methods, that there is an entire absence of machine-work, and that the bolts used may be the ordinary commercial  
 30 articles without special preparation for this purpose. It is also evident that this hanger while affording a secure means of pipe suspension is sufficiently flexible in its nature to accommodate ordinary lateral inaccuracies  
 35 in the pipe-line or in the location of the sup-

porting-bolts and that provision is made for adjustment in height without difficulty.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

40  
 1. In a pipe-hanger, the combination of a suspending means and a stirrup adapted to encircle a pipe, said stirrup comprising an upper member so combined with the suspending means as to be movable laterally with respect  
 45 to the axis of the stirrup, and a lower member so combined with said upper member as to be supported thereby and movable longitudinally with respect to the said axis, all substantially as shown and described. 50

2. In a pipe-hanger, the combination with suspending means, of a stirrup adapted to encircle a pipe, said stirrup comprising an upper member pivotally attached to and so combined with the said suspending means as to be  
 55 revoluble thereon and movable laterally with respect to the axis of the stirrup, and a lower member so combined with the said upper member as to be normally interlocked therewith, supported thereby and movable longitudinally  
 60 with respect to the said axis, all substantially as shown and described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

W. CLIFFORD SMITH.

Witnesses:

CHARLES L. ACKERSON,  
 LILLIAN L. SPIESS.