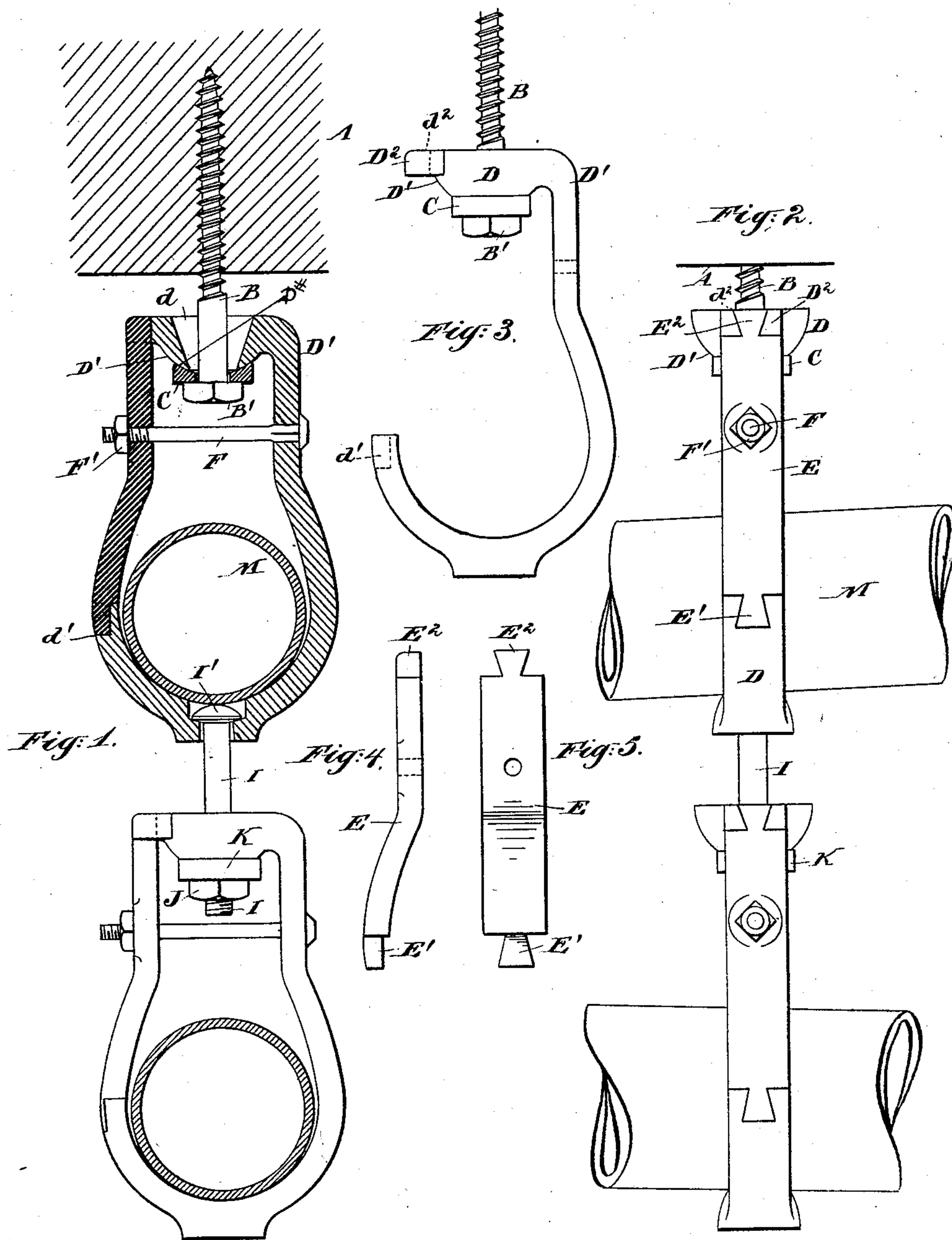


(No Model.)

J. H. CAIN.  
PIPE HANGER.

No. 508,914.

Patented Nov. 21, 1893.



Witnesses:  
Charles R. Searle,  
Jose L. Fingleton.

Inventor:  
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by his attorney  
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# UNITED STATES PATENT OFFICE.

JOHN H. CAIN, OF BROOKLYN, NEW YORK.

## PIPE-HANGER.

SPECIFICATION forming part of Letters Patent No. 508,914, dated November 21, 1893.

Application filed April 11, 1892. Serial No. 428,584. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN H. CAIN, a citizen of the United States, residing in Brooklyn, in the county of Kings, in the State of New York, have invented a certain new and useful Improvement in Pipe-Hangers, of which the following is a specification.

My experiments have been mainly with steam-heating pipes, and I will describe the invention as thus applied; but it may be used with advantage in suspending pipes used for refrigerating, for conveying gas, water or fluids generally for any purpose.

The invention allows the pipes to be easily inserted and removed, and to be adjusted up and down to a considerable extent, even after the parts have been in other respects properly placed and fully secured so as to compensate for errors in the work, or irregular settling of a building, or similar disturbing causes.

My improved hanger is capable of turning in the horizontal plane and of swinging laterally to a sufficient extent to compensate for all ordinary imperfections in the workmanship, in the manufacture and putting together of the pipes, and in the locating of the hangers. The adjustment up and down is attained by simply turning a lag screw. The movable part by which it is opened to apply around a pipe is completely detachable. In its open condition the hanger has no hinged part attached to serve as an incumbrance. It may be hung and adjusted approximately while open, and the separate part which closes the opening may be applied and secured afterward. In what I esteem the most complete development of the invention, each hanger is adapted not only to properly support a pipe but also to furnish means for supporting another corresponding hanger below, which in its turn may support a pipe and again support another hanger, as many as may be required.

My hanger is strongly secured by a single and simple fastening and presents a tasty and symmetrical appearance.

The accompanying drawings form a part of this specification and represent what I consider the best means of carrying out the invention.

Figure 1 is a vertical section partly in ele-

vation. Fig. 2 is an elevation at right angles to Fig. 1. Fig. 3 is an elevation showing the hanger open. Fig. 4 is a corresponding view of the removable piece, and Fig. 5 is an elevation of the same piece at right angles to Fig. 4.

Similar letters of reference indicate corresponding parts in all the figures where they appear.

A is a timber in the ceiling of the building or apartment, supposed to be of yellow pine or other suitable wood, and B is a lag screw inserted in a hole bored therein, and adapted to reliably support the weight, and to be adjusted up and down by turning in an obvious manner.

C is a washer, supported by the squared head B' of this screw, and having its upper face concave.

D is a casting suspended on the screw through the washer, and adapted to receive and support a pipe of the required size. Certain portions of this casting will be designated, when necessary, by super-numerals. The screw is received in a conical hole  $d$ , the large end uppermost, in the axial line of a boss D\*, which latter has a spherical under surface adapted to gyrate on the washer C, if required. The main casting extends downward from an ear D' on one side of the boss D\* and is curved to match easily to the contained pipe. After describing the proper curve it extends upward to about the center line of the pipe and is there formed with a dove-tail recess  $d'$ . An ear D<sup>2</sup> on the opposite side of the boss D\* is formed with a corresponding dove-tail recess  $d^2$ . I provide a casting E equipped with dove-tail ends E', E<sup>2</sup>, adapted to match in these dove-tails  $d'$ ,  $d^2$ . A transverse bolt F inserted through holes in the castings D and E, and secured by a nut F', holds these parts reliably together, and allows their complete separation when required.

Pipe hangers are often very conspicuous objects and it is important to have them symmetrical. The dove-tailing of the separable part E to the casting D at the points E' E<sup>2</sup> gives strength so that this side contributes to the support of the pipe without adding any unsightly projections. The parts are held reliably in place by a single bolt F, the nut



F' on which may be symmetrical with the head. In putting up a pipe, the screw B having received a washer C, is slipped upward through the conical hole  $d$  and inserted into the hole previously bored in the wood A. The looseness of the attachment of the parts D, D', allows it to be held aside and the screw to be driven upward by an ordinary appliance, as a wrench turned by a bit-stock, until it is in the approximately correct position. Then the casting D is allowed to hang down naturally and the pipe, marked M, is introduced, and the height adjusted roughly by turning the lag screw B. Afterward the piece E is brought into position and its dove-tails engaged and the bolt F inserted and its nut F' applied and set up. The work may proceed rapidly until any length of pipe is secured in the approximately correct position. Now to line the pipe accurately the operator may take hold of each screw-head B' with an S-wrench, or other convenient device and turn it to raise or lower to the required degree. The hanger may turn pendulum-wise on the spherical bearing between its boss D and the washer C. The elevation may be adjusted at any time.

I, I', is a headed bolt adapted to suspend a second pipe-hanger from this first one, but carried in a position the reverse of that of the screw B, B'. A boss is formed at the lowest point in the strap D' with sufficient capacity to allow for a recess for the head I' and a conical recess, large end downward, for the shank I, with liberty for the bolt to swing. On the screw-threaded lower end of this bolt is fitted a nut J carrying a washer K having a concave upper surface, and this matches to the spheroidal under side of the boss, corresponding to D, of the first hanger, which is in all respects similar to the one described. The two may each swivel independently of the other, and each may swing to a reasonable extent on its supporting bearing.

Modifications may be made without departing from the principle or sacrificing the advantages of the invention. I can use T-ends instead of the dove-tails E', E<sup>2</sup>, taking care to give the recesses  $d'$ ,  $d^2$ , corresponding forms.

It may often be practicable to support the weight of the pipe temporarily by other means while the hanger is in its open condition with the part E removed. After the part E is in place its dove-tails E', E<sup>2</sup>, or equivalent locking ends, engage in the recesses  $d'$ ,  $d^2$ , and

enable the hanger to reliably support a great weight.

The parts may at any time be separated by removing the bolt F and the dove-tailed piece E, E', E<sup>2</sup>, and lowering the main part D, D', D<sup>2</sup>, by turning the lag screw B. A given size of my pipe-hanger may obviously serve to support pipes of any required smaller sizes. If pipes of given sizes are covered to retain the heat, or for other purpose, the hangers should obviously be sufficiently large to allow therefor.

I claim as my invention—

1. The pipe-hanger described, comprising a boss D\* in one piece and a lag screw B capable of being adjusted up and down, said boss having a hemi-spherical base and having an ear D<sup>2</sup> and arm D', the latter partially embracing the pipe and forming the main part of the hanger, in combination with a detachable part E, having dove-tail ends E', E<sup>2</sup>, and engaged in corresponding recesses in the parts D', D<sup>2</sup>, and with holding means as F, F', for engaging the detachable part, arranged as shown so as to allow lateral swinging, and also to allow access to the lag screw to permit the vertical adjustment of the pipe after the parts are in place, all substantially as herein specified.

2. In a pipe-hanger, the screw B, arranged to be adjusted after the other parts are in position, the boss D\* having a spherical bearing suspended thereon and capable of both turning and swinging, an arm D' reaching downward from an ear on the side of said boss and across under the pipe, and having a dove-tail recess  $d'$ , an ear D<sup>2</sup> on the opposite side of said boss, having a dove-tail recess  $d^2$  therein, a removable part E having dove-tails E', E<sup>2</sup>, engaging in said recess, and means as the bolt F' for holding and releasing the parts at will, in combination with each other and with a second hanger arranged below, and the connecting bolt I adapted to allow swiveling and swinging motions in such second hanger relatively to the first hanger, all arranged for joint operation substantially as herein specified.

In testimony that I claim the invention above set forth I affix my signature in presence of two witnesses.

JOHN H. CAIN.

Witnesses:

H. A. JOHNSTON,  
JOSE L. FINGLETON.