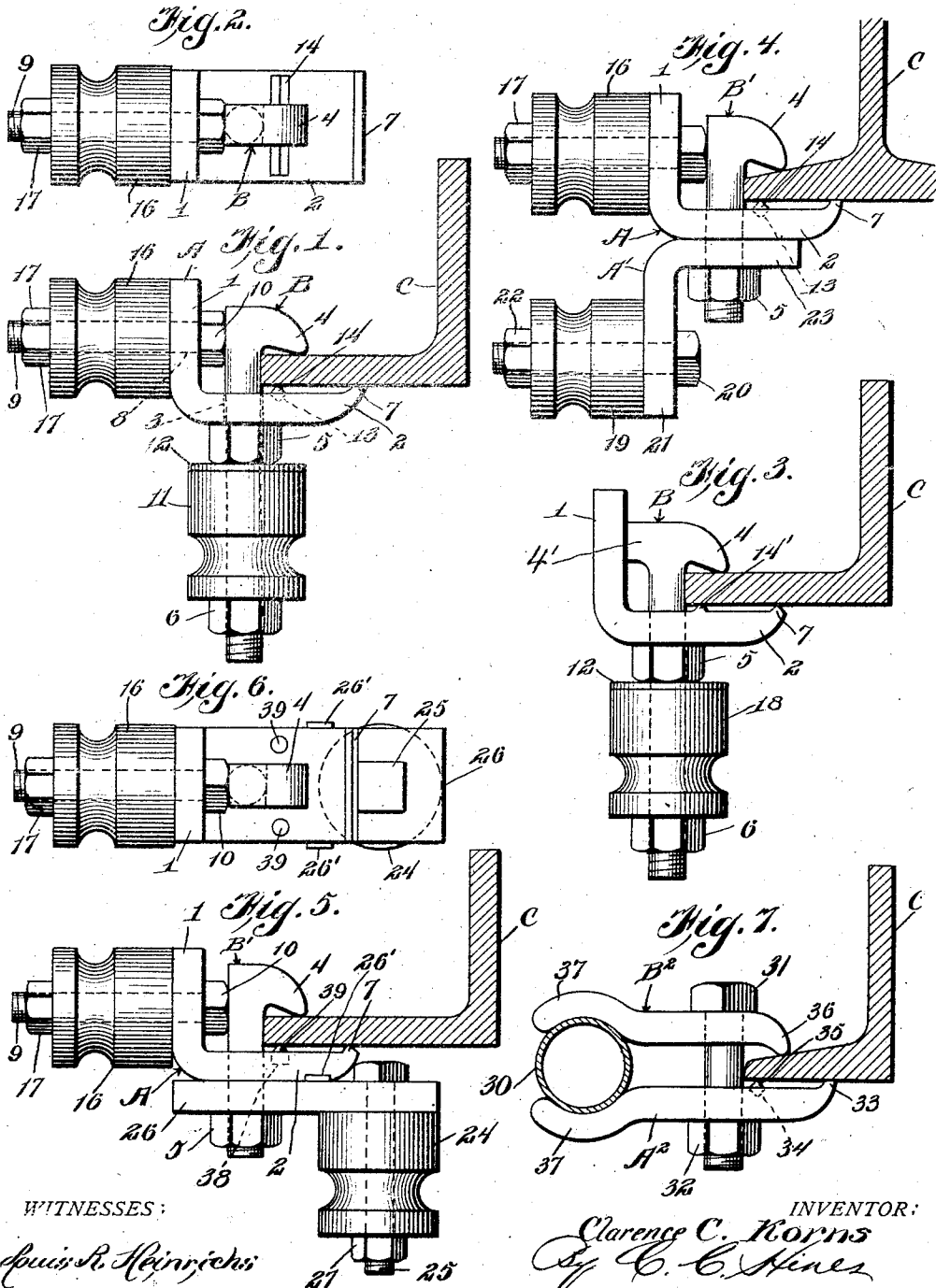


C. C. KORNS.
HANGER BRACKET.

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HANGER-BRACKET.

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To all whom it may concern:

Be it known that I, CLARENCE C. KORNS, a citizen of the United States, residing at Johnstown, in the county of Cambria and State of Pennsylvania, have invented certain new and useful Improvements in Hanger-Brackets, of which the following is a specification.

This invention relates to hanger brackets for supporting insulators, pipes or other objects, the object of the invention being to provide a hanger bracket or holder which may be used in mills and other places where there are exposed structural steel elements, such as I-beams, channels or angles, and which may be quickly and conveniently attached to any of such elements without the necessity of drilling holes therein.

A further object of the invention is to provide a hanger bracket or holder which is simple and inexpensive in construction, susceptible of use for holding and supporting various objects, and adapted to be firmly secured in position.

The invention consists of the features of construction, combination and arrangement of parts hereinafter fully described and claimed, reference being had to the accompanying drawings, in which:—

Figure 1 is a side elevation of one form of bracket or holder embodying my invention, shown applied for use. Fig. 2 is a top plan view of the same. Fig. 3 is a side elevation of another form of bracket or holder embodying my invention. Fig. 4 is a side elevation showing still another form of bracket embodying my invention. Figs. 5 and 6 are, respectively, a side elevation and top plan view, showing still another form of the invention. Fig. 7 is a side elevation illustrating a modification for specific uses.

In the practical embodiment of my invention I provide a hanger or holder consisting generally of a pair of cooperating-clamping members A and B, adapted to engage one of the flanges or webs of an angle metal beam C, or any similar structural element of the character described. In the form shown in Figs. 1 and 2 the member A comprises a substantially L-shaped metal plate having an upright portion 2 and a horizontal portion 1. The portion 2 is provided with a vertical opening 3 for the passage of the member B, which consists of a vertical bolt provided at its upper end with a clamping head or jaw 4, said bolt extend-

ing below the member A and being threaded to receive clamping and retaining nuts 5 and 6. The portion 2 of the member A is provided with an integral upturned transverse clamping jaw 7 and the portion 1 thereof is provided with an opening 8 for the passage of a horizontal bolt 9, the head 10 of which is arranged between the portion 1 and jaw 4 and braces and holds said jaw 4 against outward deflection. The lower end of the bolt B is disclosed as forming a support for an insulator 11 clamped by the nut 6 against a washer 12 bearing against the nut 5, by the adjustment of which latter the jaws 4 and 7 may be brought into clamping engagement with the horizontal web or flange of the support C. It will be observed that the jaws 4 and 7 engage the respective upper and lower faces of the web or flange at points out of vertical alinement with each other, the jaw 4 engaging the flange at a point approximately midway between the free edge of said flange and the bearing point of the jaw 7. The upper face of the part 2 is provided with a V-shaped transverse recess 13 receiving a hard steel impinging or biting member or rib 14, consisting of a substantially diamond-shaped triangular key or pin fitting at its base within said recess. The upper biting edge of this rib or key bears against the engaged flange of the part C in such relation to the jaws 4 and 7 as to bring the point of engagement of the jaw 4 on a vertical line between the bearing points of the jaw 7 and biting member 12, whereby the hanger is firmly and securely clamped to the support. When the jaws are adjusted into gripping engagement the rib or key 14 sinks into the engaged flange and thereby operates to firmly hold the jaws against any possibility of slipping or becoming casually disconnected from the support. A second insulator 16 is supported by the bolt 9 and clamped against the part 1 by a nut 17. This construction and arrangement permits two insulators to be mounted upon a single bracket or support, one horizontally and the other vertically, and in convenient relation for use.

In the construction shown in Fig. 3 the clamping member A is of similar form to the corresponding part shown in Figs. 1 and 2 except that it is provided in lieu of the key 14 with a biting projection 14' forged or welded thereon, and said member

in cooperation with the member B supports a vertical insulator 18 in the manner shown in Figs. 1 and 2. In this construction the member B is modified by providing it with a bracing lug 4' engaging the part 2 and the bolt 9 and insulator 16 are omitted.

In Fig. 4 the member A and the form and arrangement of parts are generally the same as that shown in Figs. 1 and 2, except that a short bolt B' is substituted for the bolt B and the vertical insulator omitted and a substantially L-shaped or angular supporting member A', corresponding in general shape to the member A, is employed to support an insulator 19 in parallel relation to and below the insulator 16. This insulator 19 is mounted upon a bolt 20 passing through the vertical portion 21 of the member A' and clamped thereto by a nut 22, the horizontal portion 23 of said member A' being clamped against the part 2 of the member A by the bolt B and nut 5.

The structure shown in Figs. 5 and 6 is similar to that shown in Fig. 4, except that a lower vertical insulator 24 is shown in this arrangement carried by a bolt 25 passing through a flat horizontal metal bar or plate 26 clamped to the part 1 of the member A by the bolt B' and nut 5, said insulator 24 being held in position on the bolt 25 by a nut 27. In this construction also the part 2 of the member A is provided in lieu of the recess 13 and key 14 with a pair of spaced recesses 28 receiving a pair of pointed biting elements or spurs 29, serving the same function as the said key 14, and which form of the biting element may be employed when desired in any of the constructions disclosed.

Preferably the bar or plate 26 is provided with a pair of oppositely disposed lugs 26' arranged in transverse alinement for engagement with the part 2 to hold the bar or plate from turning. These lugs are so disposed with relation to the bolt 25 as to permit said bar or plate to be held parallel with or at right angles to the member A and with the insulator 24 disposed in the position shown, beneath the insulator 16 or beyond either side of the portion 1.

In Fig. 7 a bracket or holder of the general character described is provided for supporting a pipe, split insulator or other element 30. In this construction cooperating clamping members A² and B² are provided, consisting of bars or plates coupled by a bolt 31 and nut 32. One end of the member A² is provided with a clamping jaw 33 and a recess 34 receiving a biting key 35, similar in construction and arrangement to the parts 7, 11 and 12 heretofore described, while the member B² is provided with a jaw 36 performing the function of the jaw 4. The opposite ends of the two members A² and B² are shaped to provide partially circular sup-

plemental jaws 37 to grip the pipe or other object 30. The mode of use of this type of hanger will be readily understood.

From the foregoing description it will be seen that the invention provides a hanger or holder which is adapted for effectually attaching and holding an insulator or other object to an angle metal support of the types referred to, and that in its various embodiments, some of which are herein disclosed, a single insulator or other object or a plurality of insulators or other objects may be arranged and held in any position desired. It will also be seen that the invention provides a simple and inexpensive device for the purpose, and that by the described arrangement of the coating jaws and biting element the hanger or holder may be quickly, conveniently and firmly attached to any type of flanged supporting element without the necessity of drilling holes therein or otherwise altering the construction thereof. The invention accordingly provides a hanger or holder which will be found of manifold advantage and convenience in supporting electric wires or other elements in mills or other buildings having exposed structural steel elements of the character referred to, by which the wires or other elements to be supported may be quickly applied for use and removed as occasion requires and while in use will be held firmly against movement or disconnection.

I claim:—

1. A hanger bracket or holder comprising a clamping plate having an upturned transverse clamping jaw, a biting element on said plate in parallel relation to the jaw, a separate clamping member having a downturned clamping jaw disposed on a line between the first-named clamping jaw and the biting element, and means for holding said clamping plate and clamping member assembled.

2. A hanger bracket comprising a clamping plate bent to provide vertical and horizontal portions, a jaw upon the horizontal portion of the plate, a biting element upon the horizontal portion of the plate in spaced relation to said jaw, a bolt passing through the horizontal portion of the plate and provided with a jaw arranged on a line between the first-named jaw and biting element, and a retaining element engaging the bolt.

3. A hanger bracket comprising a clamping plate bent to provide vertical and horizontal portions, a jaw upon the horizontal portion of the plate, a biting element upon the horizontal portion of the plate in spaced relation to said jaw, a bolt passing through the horizontal portion of the plate and provided with a jaw arranged on a line between the first-named jaw and biting element, and clamping means for retaining the bolt and supporting an insulator thereon.

4. A hanger bracket comprising a clamp-

ing plate bent to provide vertical and horizontal portions, a jaw upon the horizontal portion of the plate, a biting element upon the horizontal portion of the plate in spaced
 5 relation to said jaw, a bolt passing through the horizontal portion of the plate and provided with a jaw arranged on a line between the first-named jaw and biting element,
 10 clamping means for retaining the bolt and supporting an insulator thereon, and means for supporting an insulator from the vertical portion of the plate.

5. A hanger bracket or holder comprising a clamping member having vertical and
 15 horizontal portions, a jaw upon the horizontal portion of said clamping member, a biting element upon the horizontal portion of said clamping member in spaced relation to said jaw, and a coacting clamping member
 20 having a cooperating jaw arranged on a line between the first-named clamping jaw and the said biting element.

6. A hanger bracket or holder comprising a clamping member having vertical and
 25 horizontal portions, a jaw upon the horizontal portion of said clamping member, a bit-

ing element upon the horizontal portion of said clamping member, and a clamping bolt provided with a jaw for coaction with the first named jaw and biting element. 30

7. A hanger bracket or holder comprising a clamping member having a clamping jaw, a biting element arranged upon said member and in spaced relation to said jaw, a bolt extending through said clamping member 35 and provided with a coacting clamping jaw, and means for retaining an element to be supported upon the bolt.

8. A hanger bracket or holder comprising a plate having vertical and horizontal arms, 40 a jaw upon the horizontal arm, a bolt passing through the horizontal arm and having a coacting jaw, clamping and insulator holding means associated with said bolt, and an insulator supporting bolt passing through 45 the vertical arm.

In testimony whereof I affix my signature in presence of two witnesses.

CLARENCE C. KORNS.

Witnesses:

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 HERMAN VOLLMAR.