L. MALLORY.

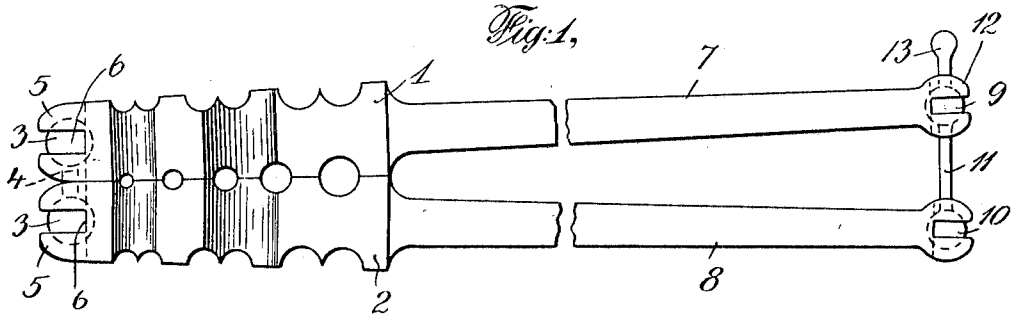
WIRE CLAMP.

APPLICATION FILED JULY 30, 1913.

1,107,684.

Patented Aug. 18, 1914.

Fig: 1,



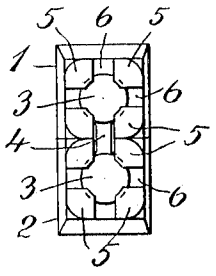


Fig: 2.

Fig: 3

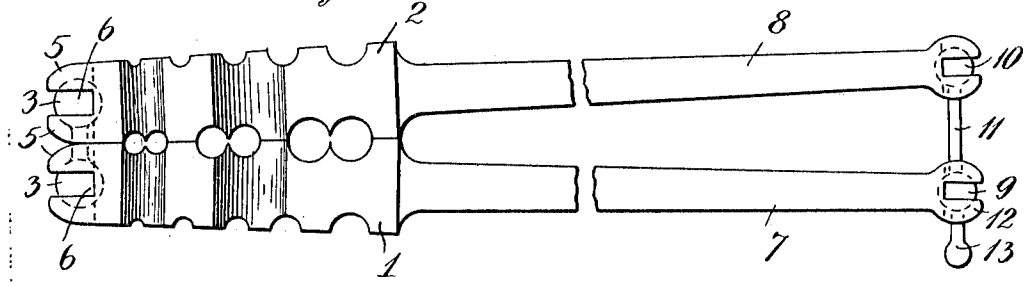
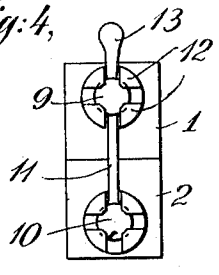


Fig: 4,



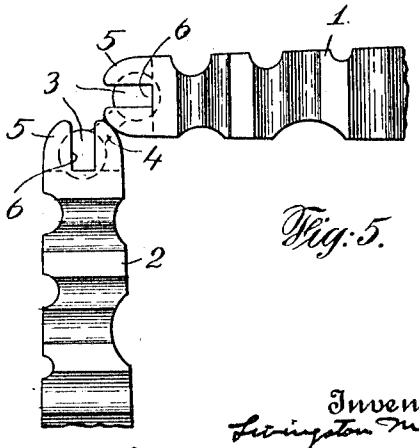


Fig: 5.

Witnesses:

Max B. A. Doring.

Paul H. Franke

Inventor

Livingston Mallory

By his Attorneys

Marble & Matty

UNITED STATES PATENT OFFICE.

LIVINGSTON MALLORY, OF NEW YORK, N. Y.

WIRE-CLAMP.

1,107,684. Specification of Letters Patent. Patented Aug. 18, 1914.

Application filed July 30, 1913. Serial No. 782,072.

To all whom it may concern:

Be it known that I, LIVINGSTON MALLORY, a citizen of the United States of America, and a resident of New York, in the borough of Bronx, county of Bronx, and State of New York, have invented certain new and useful Improvements in Wire-Clamps, of which the following is a specification.

My invention relates to improvements in wire clamps, such for example as are employed in the splicing of wires. The wire clamps ordinarily used for this purpose comprise two jaw members pivoted together and having on their adjacent faces corresponding grooves of different sizes or shapes. Sometimes these jaw members are made reversible so that each jaw member has two working faces.

According to my invention I connect the two jaw members, not by a pivotal joint, but by a double universal joint, which construction enables me to provide each jaw member with any desired number of working faces and to bring any of these working faces into coöperative proximity to any of the working faces of the other jaw member. I also provide improved clamping means whereby two jaw members may be clamped together in any of the various possible relative positions of the working faces of such members.

My invention consists in the novel connection of the jaw members; in the combination of universally jointed jaw members having each a plurality of working faces, each of which may be brought into coöperative proximity with any one of the working faces of the other jaw member; in the novel clamping means employed; and in various other features hereinafter described and particularly pointed out in the appended claims.

The objects of my invention are to improve the construction of wire clamps such as described; to increase the number of available working faces of the jaws of such clamps; to provide locking means which will lock together the jaws in any of the various possible relative positions of such members; and to provide a tool which, while having the above advantages, is simple, strong and reliable.

I will now proceed to describe my invention with reference to the accompanying drawings, and will then point out the novel features in claims.

In said drawings: Figure 1 shows a side elevation of one form of wire clamp embodying my invention. Fig. 2 shows a front end view thereof. Fig. 3 is a view similar to Fig. 1, but showing working surfaces of the tool juxtapositioned otherwise than in Fig. 1. Fig. 4 shows a rear end view of the tool. Fig. 5 shows a detail fragmentary elevation of the jaws of the tool, opened up into a position permitting change of the juxtapositioned working surfaces of the tool.

The tool illustrated in the said drawings comprises jaw members 1 and 2, which, in the construction shown, are of rectangular cross section, each having four working faces; though obviously the number of working faces might be less or greater, and obviously each jaw member, instead of being rectangular in cross section, might have any other desired cross section; for example, these jaw members might be triangular, pentagonal, hexagonal, etc., or one may be triangular and the other rectangular, or pentagonal, or hexagonal, etc. In the construction shown in the drawings each of the working faces of each jaw member is shown as provided with a series of serrations corresponding to, and complemental to, similar serrations on a corresponding working surface of the other jaw member; but obviously the serrations of the one member need not necessarily correspond with serrations of the other member.

My invention is independent of any particular character of working surface of the tool, since it relates primarily to the means for universally connecting the jaw members; but it is a characteristic feature of my invention that the method of connection of the jaw members employed permits each jaw member to have any desired number of working surfaces serrated, indented, or otherwise shaped for the work to be done, in any desired manner.

Each of the two jaw members is provided at its end with a socket adapted to receive a ball 3; the two balls 3 being connected by a neck 4, the structure comprising the two balls 3 and the neck 4 being integral; the said sockets to receive such balls being formed, in the construction shown, by a plurality of lugs 5 integral with the jaw members, and slightly overlapping the balls 3; there being spaces 6 between the lugs 5 for the passage of the neck 4. In the construc-

tion of the tool, each jaw member is formed, initially, with the lugs 5 spread apart sufficiently to permit the reception of the ball 3 into the ball socket; and then, once such ball has been put in place, the lugs 5 are bent over to engage the ball, as shown; after which, if desired, the tool may be hardened, and thereby subsequent spreading of the lugs 5 in ordinary use made impossible. As shown particularly in Fig. 5, it is easy to turn the two jaw members, 1 and 2, so that any one of the working faces of the one jaw member may be brought opposite any of the working faces of the other jaw member; for, by swinging the jaw members apart to or beyond the position shown in Fig. 5, either or both of said jaw members may be turned about its ball 3 so that any desired working face of that jaw member is opposite any working face of the other jaw member. Except for the ability to turn the jaw members about their balls 3, as described, the double universal connection provided between the jaw members is equivalent to a hinge connection, and the tool may be used as an ordinary hinged tool.

The two jaw members 1 and 2 will usually be provided with handles 7 and 8 respectively, and, as is common in tools of this class, these handles will commonly be made somewhat elastic so that they may be clamped together notwithstanding some variation in distance between the juxtapositioned working faces due to variable separation of such working faces by material held within the clamp. For so clamping the jaw members together I provide each handle, at its end, with a ball socket adapted to receive one of the two balls, 9 and 10, these ball sockets being formed in all respects like the ball sockets at the jaw ends of the members 1 and 2, except that the socket 12 of one of the handles (the socket of the handle 7 in the construction shown) is so made that the corresponding ball 9 may be moved into and out of the socket, by springing outward slightly the lugs which form this socket, and the clamping member 11 is provided with a handle 13 by which use of the clamping member is facilitated. In Fig. 4 the overlapping of the ball 9 by the lugs of socket 12 is somewhat exaggerated, as the small scale of the drawing does not permit exact representation of the slight degree of overlap employed in practice.

It will be seen that this clamping device permits the clamping together of the jaws of the tool in any of the various possible relative positions of the jaws.

What I claim is:—

1. A wire clamp such as described, comprising two jaw members having a double universal joint connection permitting any one of three or more faces of the one member to be brought opposite any one of a plurality of faces of the other member.

2. A wire clamp such as described, comprising two jaw members having a double universal joint connection permitting any one of three or more faces of the one member to be brought opposite any one of a plurality of faces of the other member, and means for clamping said members together in any of the various possible relative working positions of such members.

3. A wire clamp such as described, comprising two jaw members provided with ball sockets, and a connector for said members comprising balls fitting within such sockets and means connecting said balls.

4. A wire clamp such as described, comprising universally jointed jaw members, and means for clamping such jaw members together comprising balls adapted to fit within ball sockets in said members, and means connecting such balls, one of such ball sockets adapted to permit the corresponding ball to be moved into and out of that socket.

5. A wire clamp such as described, comprising two jaw members each provided with a ball socket formed by projecting lugs, and means for connecting such jaw members comprising a connecting member having balls adapted to fit within said sockets and a neck connecting such balls, there being between the lugs of the jaw members spaces for the reception of such neck.

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

LIVINGSTON MALLORY.

Witnesses:
H. M. MARBLE,
PAUL H. FRANKE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."