June 18, 1940. A. SABATELLO 2,205,311

TEMPLATE CONSTRUCTION FOR PIPE INSTALLATIONS

Filed Dec. 30, 1939

Fig. 1.

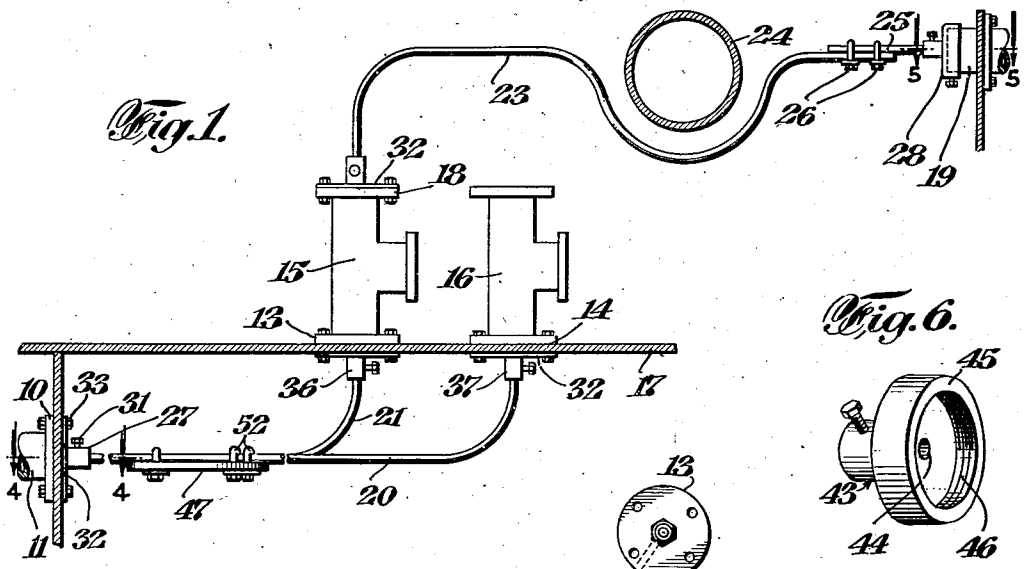


Fig. 6.

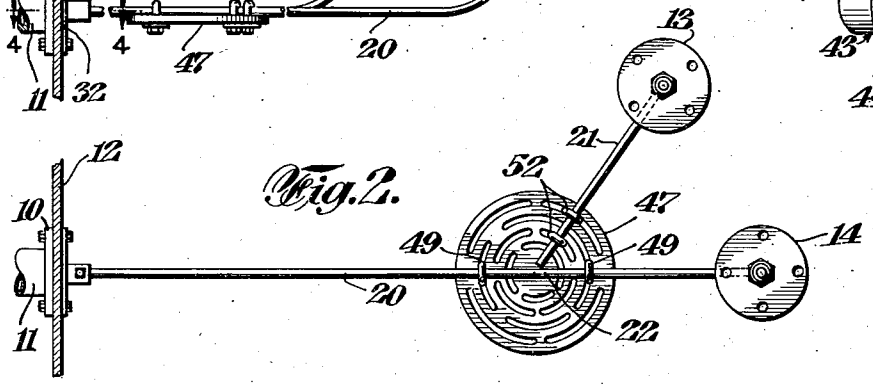


Fig. 2.

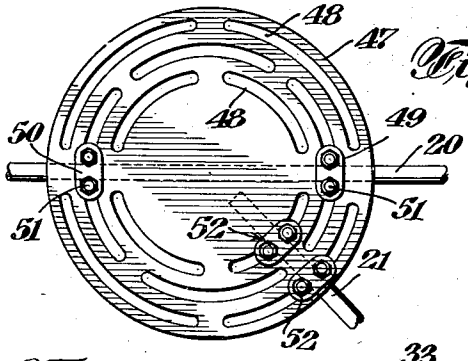


Fig. 3.

Fig. 5.

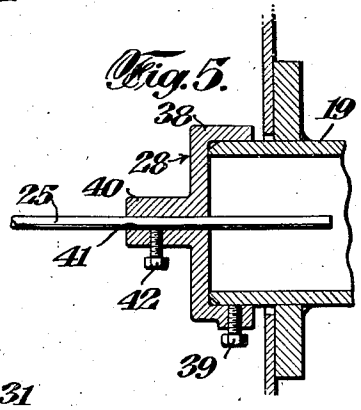
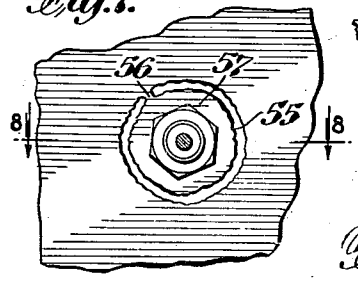


Fig. 7.



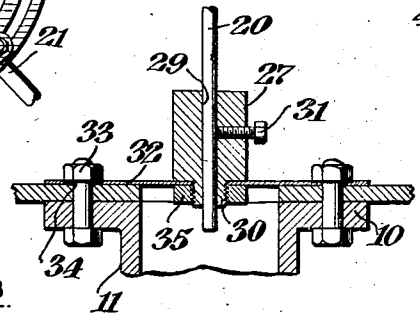


Fig. 4.

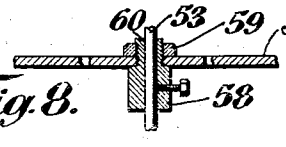


Fig. 8.

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TEMPLATE CONSTRUCTION FOR PIPE INSTALLATIONS

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Application December 30, 1939, Serial No. 311,922

6 Claims. (Cl. 33—180)

This invention relates to a method of installing pipes, and particularly to devices adapted for accurately locating and centering template wires for pipe installations.

Heretofore, it has been the practice to employ template wires for pipe layout work by running such wires along predetermined courses, bending and forming such wires accordingly, and then permanently securing together, by welding or other similar means, the various wires employed for this purpose. In this manner wire templates have been produced to conform to the desired pipe layouts. It has been found, however, that this conventional method produces a cumbersome template structure, frequently difficult to remove from the locale where the template was formed,—and often making it necessary to complete the entire pipe job right on the spot. It is primarily within the contemplation of my invention to enable wire templates to be readily formed for any desired pipe installation, whereby no welding or permanent securing together of the template wires need be resorted to. And in this aspect of my invention it is another object to enable the wires to be detachably connected, so that they may readily be disassembled after the templates are formed, and as readily reassembled thereafter in accurate manner, at any convenient place where the actual pipes are to be formed.

It is further within the contemplation of my invention to provide convenient means for enabling wire templates to be accurately formed for Y and T and other juncture connections.

Another object of my invention is to provide means for establishing accurate centers for the running of template wires for various types of pipe installations.

And it is my further object to enable the aforesaid objectives to be attained whereby pipe installation work can be readily and accurately effected with the employment of a minimum of time, effort and material.

Other objects, features and advantages will appear from the drawing and descriptions hereinafter given.

Referring to the drawing:

Figure 1 is an elevation of an arrangement of template wires employing my invention for a pipe installation in a ship hold.

Figure 2 is a bottom plan view of the lower portion of the arrangement of Figure 1, illustrating the use of my adjustable clamping disk.

Figure 3 is an enlarged plan view of the clamping disk of Figure 2 with fragments of template wire therein.

Figure 4 is an enlarged fragmentary section of Figure 1 taken substantially along line 4—4, showing a form of centering fixture.

Figure 5 is an enlarged fragmentary section of Figure 1, taken substantially along line 5—5, showing another form of centering fixture for a butt-weld pipe.

Figure 6 is a perspective view of a modified form of butt-weld centering fixture.

Figure 7 is a plan view of a fragment of a wall provided with a centering fixture for determining the position of a pipe intended to extend through the wall, and

Figure 8 is a section of Figure 7 substantially along line 8—8.

In the drawing, and particularly in Figures 1 and 2 thereof, is illustrated a layout of wire templates disposed between pipe fittings associated with the bulkheads and deck of a ship. The templates are arranged for pipe connections between the flange 10 of pipe 11 attached to bulkhead 12, and the flanges 13 and 14 of the pipe fittings 15 and 16, respectively, secured to the deck 17; and a template arrangement is also provided for connection between the flange 18 of fitting 15 and the pipe 19. In the specific layout illustrated, the template wire 20 is employed to connect flanges 10 and 14, the wire being substantially straight except for an upward bend as indicated. The template wire 21 extends from flange 13 to point 22 on wire 20, at which point a Y pipe connection is to be formed. The template wire 23 is bent in arcuate shape at a portion thereof to avoid the obstruction 24,—wire 23 being joined to wire 25 by U bolts 26. In the arrangement illustrated, the flanges 10, 13 and 14 are to be secured to correspondingly disposed flanges of pipes to be installed between bulkhead 12 and deck 17; and the pipe to be installed between fitting 15 and pipe 19 is to contain a flange for attachment to flange 18, and is to be butt-welded to the terminal of pipe 19.

According to my invention, the template wires are centered in position by centering fixtures such as 27 and 28, clearly illustrated in Figures 4 and 5. For securing a wire, such as the template wire 20, in properly centered relation with respect to a flanged pipe such as 11, the fixture 27 is used, this containing a solid body portion with a central aperture 29 extending longitudinally therethrough and an externally threaded boss 30 extending axially therefrom. The aperture 29, which extends also through boss 30, is

adapted to receive a terminal portion of the wire 20, which is held in place by the set screw 31 extending transversely into the fixture 27. A thin disk 32, preferably of sheet metal, is attached by bolts 33 to the bulkhead 12 and flange 10,—said disk containing holes 34 therein adapted for registry with correspondingly disposed holes in the said bulkhead 12 and flange 10. The central portion of the disk 32 also contains a hole through which the boss 30 extends,—the nut 35 being operatively mounted over boss 30 and held in abutment against disk 32 to maintain the fitting 27 with the template wire 20 in proper centered relation with respect to pipe 11. In substantially similar manner, the centering fixtures 36 and 37 are employed for securing the wires 20 and 21 in centered relation with respect to fittings 15 and 16.

The centering fixture 28 contains a cylindrical portion 38 mounted over the outer surface of pipe 19 and held in detachable engagement therewith by the set screw 39 extending transversely through the wall of the cylinder. Extending axially from the fixture 28 is the boss 40 containing an axial aperture 41 adapted to receive the template wire 25 which is held in place by the set screw 42 extending transversely into said boss 40. This arrangement is particularly adaptable for use with an arrangement of butt-welded pipes, as distinguished from the flange arrangement hereinabove described. Should it be desired to eliminate the use of a set screw like 39, or should the pipe equivalent to pipe 19 contain a threaded outer surface, the centering fixture 43, (Figure 6) substantially similar to fixture 28, can be employed. It will be noted that this fixture also contains a central aperture 44, with the cylindrical wall 45 being provided with a threaded portion 46.

In order to effect a Y joint, such as is indicated in Figure 2, the adjustable clamping disk 47 is employed. This consists of a flat member containing in the body thereof a plurality of slots, preferably of arcuate configuration. In the form of disk illustrated, the slots 48 are disposed along a plurality of concentric circles, being in staggered relation. In the pipe layout shown, the wire 20 is extended diametrically along the disk and is held affixed thereagainst by the two oppositely disposed U bolts 49. Said U bolts are of conventional construction, the two legs of which flank the wire, and extend through the adjacent slot on the disk, the cross piece 50 being positioned over the legs of the U bolt and held secured in place by the nuts 51. Similarly, the template wire 21 is held in place by the two U bolts 52. It will be observed that in the preferred arrangement each of the wires is held clamped in place by at least two bolts, to effect a secure attachment to the disk 47.

Due to the staggered arcuate arrangement of slots 48 in concentric circles, it is obvious that any desired angular relation can be obtained between two template wires such as 20 and 21, to conform with any desired pipe juncture. Furthermore, with the use of this device, there is no necessity whatsoever of permanently securing the wires 20 and 21 together, such as by welding, as is conventionally done. The wires can readily be adjusted in place in any desired relation, and the entire unit can be carried to the work shop for making the actual pipe connections from the templates. Should it, however, be found that the size of the templates will render it inconvenient to carry the entire disk and attached wires as a unit, the disk 47 and wires 20 and 21 can be appropriately marked to indicate the relative positions of the wires, and then disassembled for convenient transportation. Thereafter, they can be readily reassembled into the exact positions as indicated by the markings.

It is of course obvious that the disk 47 can be employed not only for the wire connection illustrated in Figures 2 and 3, but for T connections and other forms of pipe junctures, as well as for the bending of template wires into the predetermined shapes.

Figures 7 and 8 illustrate means of centering a template wire 53 with reference to a wall 54 through which a pipe is to extend. A circular arc 55 is burned through the wall, leaving only the solid portion 56 for holding the central portion 57 in place. The centering fixture 58 is then inserted through a hole in the center of portion 57, and held in place by the nut 59 in threaded engagement with the boss 60 of the fixture. The template wire 53 can then be extended to any other desired point to conform with the layout of the pipe intended to extend through the wall 54. Thereafter, when the pipe is ready to be installed, the arc 55 is extended through portion 56 to remove the entire portion 57, leaving an opening through which the pipe can extend.

It is of course understood that the various embodiments above-described and shown in the drawing are illustrative of my invention and not employed by way of limitation, inasmuch as numerous changes and modifications may be made within the scope of the appended claims without departing from the spirit of this invention.

What I claim is:

1. In a wire template construction for pipe installations, a template wire, holding means detachably secured to a portion of said wire, a clamping member adjacent another portion of the wire and containing therein an elongated slotted portion in intersecting relation to said wire, and securing means extending through said slotted portion and in engagement with said wire for holding it in fixed relation with said clamping member.

2. In a wire template construction for pipe installations, a template wire, holding means detachably secured to a portion of said wire, a clamping member adjacent another portion of the wire and containing therein a plurality of elongated apertured portions at least two of which are substantially parallel to each other and in intersecting relation to said wire, and securing means extending through at least two of said parallel slotted portions and in engagement with said wire for holding it in fixed relation with said clamping member.

3. In a wire template construction for pipe installations, a template wire, a centering fixture detachably secured to a portion of said wire, a clamping member adjacent another portion of the wire and containing therein a plurality of apertures arranged along circular paths on said member, certain of said apertures at diametrically opposed portions thereof being in intersecting relation to said wire, and securing means extending through said portions of the apertures and in engagement with said wire for holding it in fixed relation with said clamping member.

4. In a wire template construction for pipe installations, a clamping member for releasably holding one or more template wires thereagainst, comprising a flat body portion containing therein a plurality of spaced apertures arranged along

concentric circles, and detachable securing means extending through certain of said apertures and adapted for embracing engagement with adjacent template wires.

5. In a wire template construction for pipe installations, a clamping member for releasably holding one or more template wires thereagainst, comprising a flat body portion containing therein a plurality of spaced arcuate apertures arranged along concentric circles, and U-bolt means extending through certain of said apertures and adapted for embracing engagement with adjacent template wires.

6. In a wire template construction for pipe installations, a clamping member according to claim 5, the apertures on adjacent circles being arranged in staggered relation.

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