Feb. 11, 1930. G. D. HAINES 1,746,529

CUTTING CLAMP

Filed June 11, 1928

Fig.1.

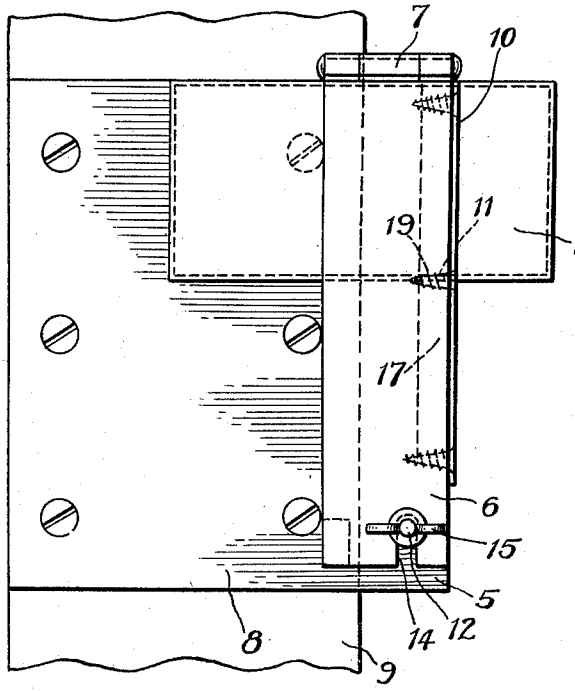


Fig.2.

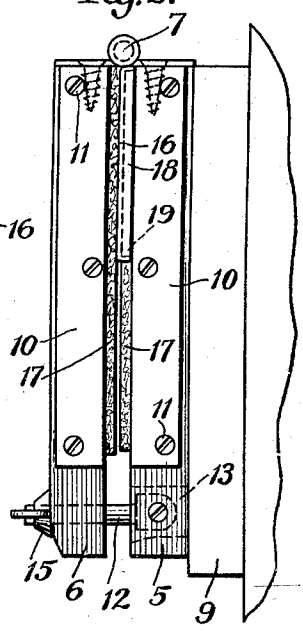


Fig.3.

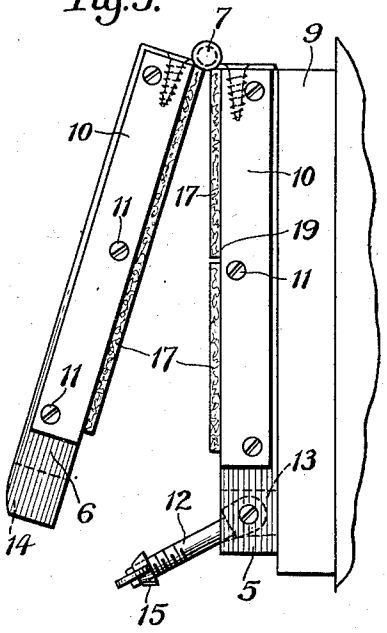
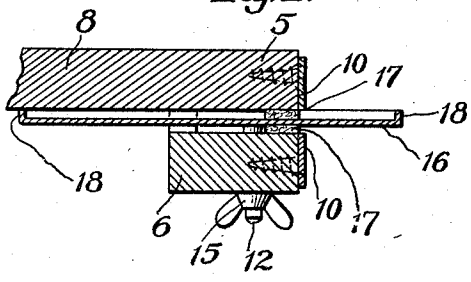


Fig.4.



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UNITED STATES PATENT OFFICE

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CUTTING CLAMP

Application filed June 11, 1928. Serial No. 284,371.

The invention relates generally to a clamp which is especially adapted for rigidly holding an enameled sheet metal plate during cutting or trimming thereof and more particularly is adapted for use in connection with the cutting and trimming of enameled sheet metal tiles of the character disclosed in Patent No. 1,594,614 issued to me on August 3, 1926.

In cutting tiles of this nature it has been found that the customary well-known types of holding or clamping devices are not satisfactory since they are not capable of clamping the enameled plate with sufficient rigidity without damage to the enameled surface. Moreover, the vibration set up in the tile when the tile is being cut is confined in the tile in the ordinary clamp with a resulting cracking, chipping or splintering of the surface adjacent the cut edge.

It is an object of this invention therefore to provide a clamp for rigidly holding an enameled sheet metal plate in such manner that the plate may be cut or otherwise trimmed without damage to the vitreous surface thereon.

Tiles of the character disclosed in my aforementioned patent are provided with peripheral flanges which serve as a means for locating the tile in a wall and also for securing the tile in that position.

Another object of the invention is to provide a device of this character which will accommodate and hold fast a flanged tile in either longitudinal or horizontal position relative to the device.

Other objects and advantages will become apparent in the following description and in the accompanying drawings in which:

Figure 1 is a plan view of the preferred form of the invention, a tile being shown in position therein for cutting.

Fig. 2 is a side elevation looking from the right hand side of Fig. 1.

Fig. 3 is a side elevation of the device in opened position.

Fig. 4 is a fragmentary section showing the manner in which the device accommodates a flanged tile.

Although the invention is susceptible of various modifications and alternative constructions I have shown and herein described in detail the preferred embodiment but it is to be understood that I do not thereby intend to limit the invention to the specific form disclosed but intend to cover all modifications and alternative constructions falling within the spirit and scope of the invention as expressed in the appended claims.

In the preferred embodiment the invention comprises a pair of suitable elongated jaw members 5 and 6 hingedly secured together as by means of the hinge 7 so that one side of one jaw is in registry with the corresponding side of the other. Preferably the lower one 5 of the jaw members is substantially wider than the other member 6 in order to provide a portion 8 which may be used for rigidly mounting the device upon a suitable stationary support 9 such as an upright post or a portion of a work table. The jaw members 5 and 6 are, in the present instance, constructed of a suitable hard wood and a metallic strip or plate 10 is secured as by means of the screws 11 to each face of the registering sides in order to prevent injury to the jaw members during the cutting opertion and also to provide a straight edge which may if desired be used to guide the cutting tool during its operation.

One of the jaw members, preferably the lower, 5 is provided, near the end opposite the hinge, with a bolt 12 pivotally mounted in a suitable aperture 13 formed in the jaw so that the bolt projects outwardly toward the other jaw member. A slot 14 is provided in the upper jaw member 6 at an appropriate point to permit the projecting end of the bolt 12 to be swung thereinto, and a wing nut or the like 15 upon the bolt is adapted to bear against the outer surface of the upper jaw to clamp the jaws rigidly together.

The metal plates or tiles 16 for which this invention is particularly adapted have an exposed surface of vitreous enamel. This surface is quite hard and brittle and any sudden stress, strain or vibration in the metal base is apt to cause cracking, breaking or splintering of the enamel surface. Means is provided by which the metal plate or tile may be held rigidly between the jaw members

which means acts as a buffer or shock absorber in that it tends to absorb any vibration which may be set up in the metallic base of the tile during the cutting operation.

To this end a strip 17 of slightly compressible material is mounted on each of the jaw members to extend along and adjacent the registering side edges of the jaw members. Leather has been found to be a suitable material since it is slightly compressible yet possesses sufficient strength and solidity to hold the tile rigidly in the clamp. As may be seen in Fig. 1, the leather strips 17 are comparatively narrow to permit the tile to be inserted into the clamp any desired distance.

Inasmuch as the tiles to be held for cutting in this device are generally provided with a narrow outstanding peripheral flange 18, as disclosed in my previously mentioned patent, I prefer to form the leather strips of slightly greater thickness than the depth of the peripheral flange 18 on a tile so that when the tile has been clamped in place the leather strip lying between the flanges will be compressed to substantially the same thickness as the depth of the flanges, thereby permitting the edges of the flanges to rest on the surface of one of the jaw members to provide an additional support to the tile while cutting. Moreover, the length of the leather strips is preferably determined by the length of the tile between the flanges.

In order that the tiles may be positioned transversely as well as longitudinally of the clamp a substantially narrow transverse slot 19 is formed in one of the leather strips which slot is appropriately positioned to receive one of the flanges when the tile is transversely positioned in the clamp.

Thus it will be seen that a clamp has been provided which is capable of receiving and holding a flanged sheet metal tile in either longitudinal or transverse position and which will prevent injury to the enameled surface of the tile while the cutting operation is being performed thereon. Moreover, the clamp is simple and may be cheaply manufactured for sale and use in connection with the flanged tile for which it is particularly adapted.

I claim as my invention:

1. A clamp for holding an enameled flanged tile for cutting, comprising, in combination, a pair of elongated jaws, means for hingedly connecting said jaws together at one end thereof with one side of each in registry, a metallic plate secured upon the face of the registering sides of each clamp, a relatively narrow slightly compressible strip extending longitudinally along the inner face of each jaw adjacent the registering edges, said strips being slightly less than the length of the tile to be cut and being slightly greater in thickness than the depth of the flanges in the tile, one of said strips having a transverse slot therein adapted to receive one of the flanges on the tile when the tile is positioned transversely between the jaws, and means for detachably clamping said jaws together.

2. A clamp for holding a flanged sheet metal tile during cutting comprising, in combination, a pair of jaws hingedly connected together, means for securing said jaws in clamped relation, and means for absorbing vibration in the tile during the cutting thereof comprising a slightly compressible strip secured to the inner face of each of said jaws adjacent the outer edges thereof, one of said strips having a relatively narrow transverse slot therein to receive one of the flanges on the tile in one position of the tile in the clamp.

In testimony whereof, I have hereunto affixed my signature.

GEORGE D. HAINES.