Sept. 7, 1943. J. M. LAVIN 2,328,815

CLAMP

Filed Feb. 14, 1942

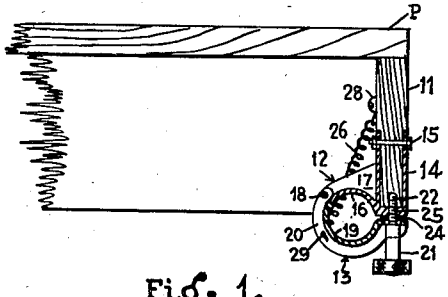


Fig. 1.

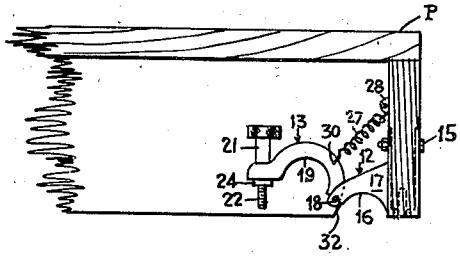


Fig. 2.

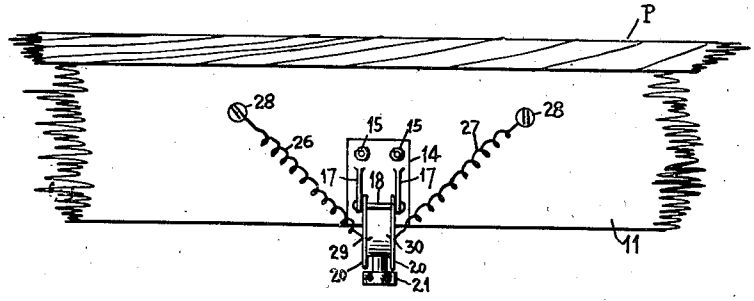


Fig. 3.

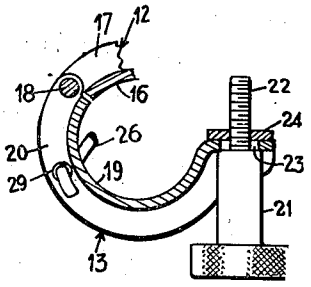


Fig. 5.

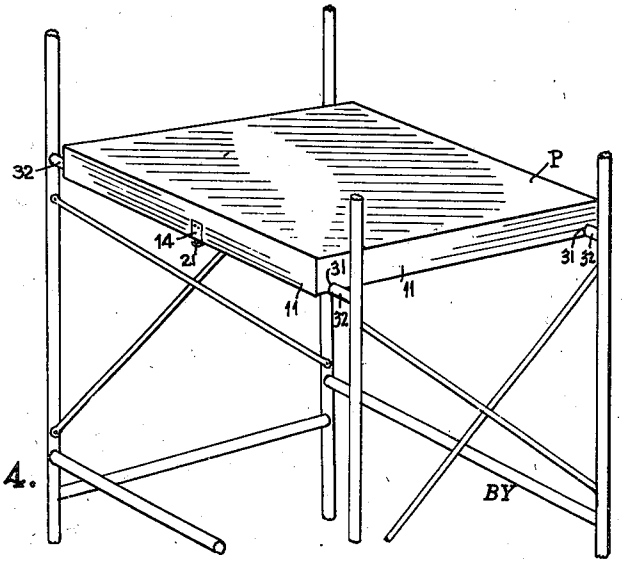


Fig. 4.

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2,328,815

CLAMP

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8 Claims. (Cl. 24—254)

This invention relates to clamps and one of its principal objects is the provision of a hinged clamp whereby one of the sections may be mounted on an object and the other section will automatically swing to an open, out of the way position when the clamp is not in use. The invention has been designed primarily for use in clamping platforms or the like onto the tops of steel scaffoldings. In handling and mounting platforms of this nature it was found advisable to mount the clamps directly upon the platforms so that each platform would have its normal number of clamps intact when carried to the top of the scaffolding for mounting. Also, it was found preferable to use a clamp that was a complete unit ready for use at all tims and one that would be out of the way when the platforms were handled or piled up for moving and storing. The clamp embodied in this invention has been designed and built to meet these specifications. However, it is not my intention to limit the invention to this specific use, since the clamp may find usefulness in other fields.

Other objects and advantages will become apparent as the description proceeds in conjunction with the drawing, in which:

Figure 1 is a fragmentary section of a platform showing my clamp mounted thereon in a clamping position;

Figure 2 is a view similar to Figure 1, showing the clamp in an open position;

Figure 3 is a view of Figure 1 taken in the plane of the paper; and

Figure 4 is a fragmentary view of the top of a scaffolding showing how my clamp would be used to mount a platform thereon.

Figure 5 is an enlarged fragmentary view showing how the bolt may be adjustably mounted in the free end of the clamp.

Referring to the drawing, it will be noted that I have shown my clamp as being mounted upon the apron 11 of a platform P. The clamp itself consists of two sections generally designated 12 and 13. The section 12 may be formed with a stirrup 14 which may be suitably mounted upon the apron 11 in any manner such as by bolts 15. It may or it may not be mortised as desired. Extending from the stirrup 14 is the upper half of the clamp designated 16. This is curved to fit a round object but can be formed in any shape desired. In the drawing I have shown this part, for purposes of illustration only, as being integral with the stirrup 14 and as having ribs 17 extending over to the stirrup 14 for strength. It need not, however, be made in this manner, since any other equivalent construction will serve the purpose equally as well. Hingedly mounted upon the part 16 by means of a pivot point 18 is the lower part of the clamp 13. This part of the clamp comprises a circular portion 19 which matches the circular portion of the upper half of the clamp. In conformance with the form of the upper part of the clamp, the lower part of the clamp is likewise ribbed and is formed with ribs 20. The ribs 17 and 20 form an ideal flange for working the pivot 18 between the two sections 12 and 13. The outer end of the section 13 carries a hand bolt 21 which has a reduced thread portion 22, said thread portion extending through a slot 23 in the outer end of the lower portion 13 (see Fig. 5). The bolt 21 is retained in the slot 23 by means of a retaining ring 24 which may be any suitable material such as a piece of leather screwed onto the screw threads, or a nut screwed up to form a loose fit and locked into position. Under this arrangement the bolt 21 is loosely mounted in the end of the hinged section 13 and may therefore be adjusted to fit into a screw threaded opening 25 in the lower part of the stirrup 14. It is then merely a matter of turning the bolt 21 until the clamp is brought down into a clamping position.

As a means of holding the hinged section 13 in an out of the way position when not in use, I provide spring 26 and 27 which are attached to the apron 11 in any suitable manner such as by screws 28. The other end of the springs are attached to the hinged member 13 at points 29 and 30, respectively, below the hinged pivot 18. It will be noted by referring to Figure 1 that when the hinged section 13 is in a clamping position that a line between the points 28 and 29 falls inside the pivot point 18. The spring 26 under this condition will tend to force the clamp closed. In Figure 2 it will be seen that when the section 13 is swung to an open position, a line connecting the points 28 and 30 falls outside the pivot point 18, and springs 27 and 28 when in this position will hold the hinged section 13 above the apron of the platform and in an out of the way position. When held in this manner the platforms may be superposed one on the other, or handled in any way desired, since the clamp is no longer in evidence and will not interfere with the normal handling or piling of the platforms. It will also be noted that the clamp as shown in Figure 2 is a complete unit ready for instant use. Although I have shown two springs, one spring may be used if desired, the only requirement being that the spring must fall

inside the pivot point when the clamp is closed and outside when the clamp is open.

In Figure 4 I have illustrated one particular use of the clamp. Here, all that can be observed of the clamp is the stirrup 14 and the hand bolt 21. However, it is to be understood that the clamp is behind the apron 11 of the platform P as shown in Figures 1, 2, and 3. It will be noted here that the end aprons 11 are recessed slightly as shown at 31 to receive pipe sections 32 which are part of the scaffolding. The pipe sections extend completely underneath the platform P and are engaged by the clamp itself. A platform mounted in this manner will not only be securely mounted and held in place but will give added strength and rigidity to the scaffolding. Although my clamp is ideally suited for this particular use, nevertheless I do not wish to confine the invention to this one particular use, since it is obvious that other uses will become apparent to those skilled in the art.

I claim:

1. A clamp comprising two sections hinged together, means for fixedly mounting one of said sections on a platform or the like, and means for automatically holding the other of said sections in an out of the way position when not in use.

2. A clamp comprising two sections hinged together, means for fixedly mounting one of said sections on a platform or the like, and tension means connecting the other of said sections to a part of said platform for automatically holding said section in an out of the way position when not in use.

3. A clamp comprising two sections hinged together, means for fixedly mounting one of said sections on a platform or the like, said means having a screw threaded hole therein, a bolt adapted to be manually operated adjustably mounted in the free end of the other of said sections so that the bolt may be caused to enter said screw threaded hole when the said section is in a clamping position.

4. A clamp comprising a fixed section adapted to be fixedly mounted on a platform or the like, a swinging section pivotally mounted on said fixed section, and spring means connecting said swinging section to a part of said platform and arranged to hold said swinging section in an out of the way position when not in use.

5. A clamp comprising a fixed section adapted to be fixedly mounted on a platform or the like, a swinging section pivotally mounted on said fixed section, and spring means connecting said swinging section to a part of said platform and arranged to hold said swinging section in an open clamping position when not in use.

6. A clamp comprising two sections hinged together, means for fixedly mounting one of said sections on a platform or the like, and means for automatically holding the other of said sections in an out of the way position when not in use, said last mentioned means including a pair of springs connecting the hinged section to a part of said platform at spaced points thereon.

7. A clamp comprising two sections hinged together, means for fixedly mounting one of said sections on a platform or the like, and means for automatically holding the other of said sections in an out of the way position when not in use, said last mentioned means including tension means connecting said hinged section to said platform in such a manner that the line of tension lies outside the hinge pintle when the clamp is not in use and inside said hinge pintle when the clamp is in a clamping position.

8. A clamp comprising two sections hinged together, means for fixedly mounting one of said sections on a platform or the like, and spring means connecting said hinged section to said platform in such a manner that when the clamp is partially opened the spring means exerts a force to fully open the clamp and hold the hinged member in an out-of-the-way position.

JOHN MICHAEL LAVIN.