

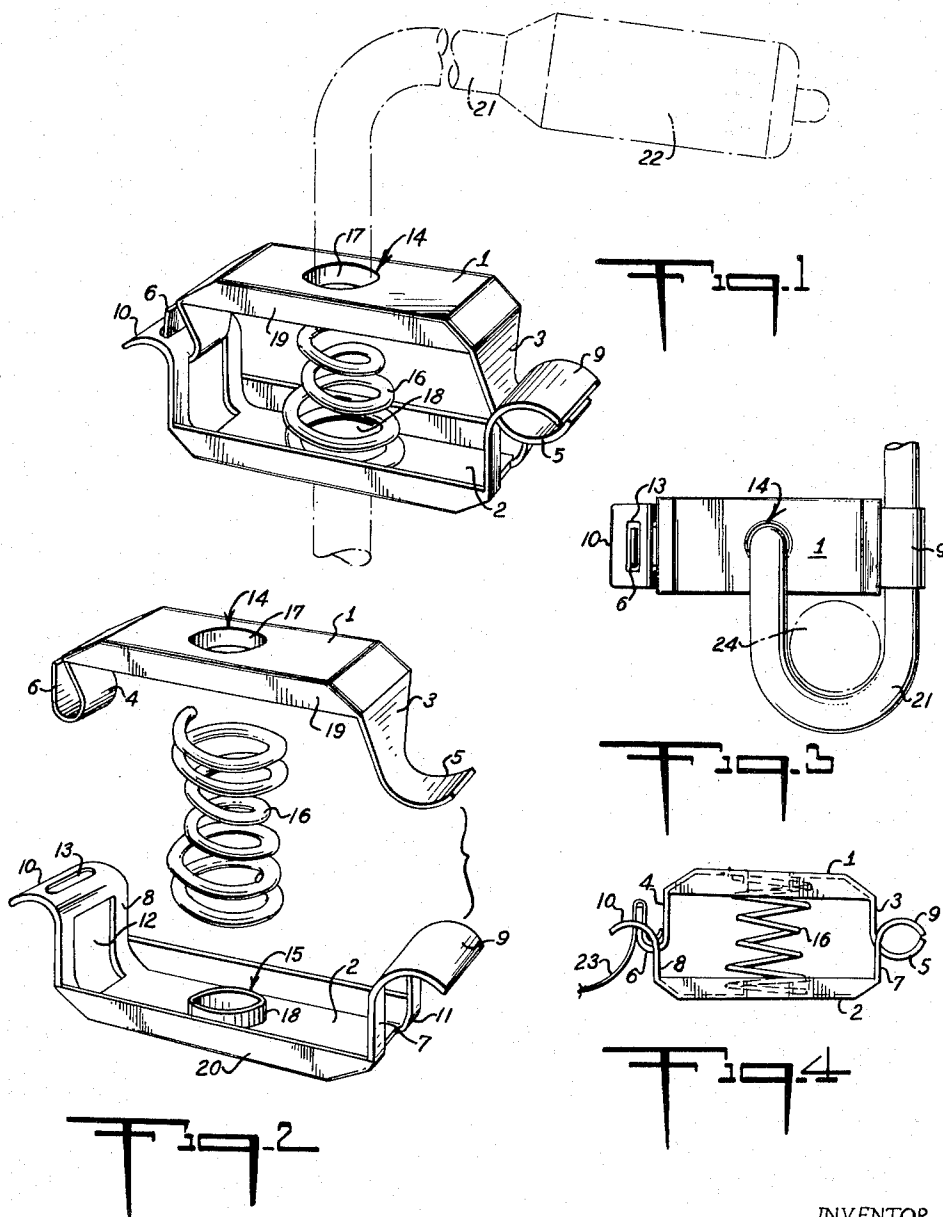
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HOSPITAL CABLE CLAMP

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HOSPITAL CABLE CLAMP

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This invention relates to a hospital cable clamp. The invention more particularly relates to a clamp for holding a cable to which a signalling or call-button is attached, as, for example, in a hospital call system.

In hospitals, individual patients are generally provided with a call or signal device by means of which they can signal to the nurse or attendant. Generally, these signalling devices are in the form of a signal button attached to the end of a cable positioned adjacent the patient's bed. In order to keep the signal button handy, a cable is generally attached to the bed sheets of the bed of the patient or around the bed post.

While the cables could be secured in their desired position with, for example, safety pins, such connections are not completely satisfactory or convenient, and special clamps have been developed for this purpose. These cable clamps must be so constructed that they can attach to the cable and be adjustable along the length thereof, and must be capable of being clamped to the bed sheets. The clamping jaws of the clamp should preferably also be able to engage the signalling cable itself in order to shorten the same or to hold the same in place wrapped around a bed post or the like.

The conventional hospital cable clamps were generally in the form of simple spring-loaded, finger-actuated clamps having two lever arms pivotally connected together with clamping jaws generally provided with holding teeth on one side of the pivot joint and the handle portion, which could be pressed together with the fingers to open the jaws on the other side of the pivot joint. In order to hold the cable, an opening or recess was provided through the handle portion of the clamps.

These hospital cable clamps have certain disadvantages. The same could be readily detached from the cable so that they were often lost or misplaced. The diverging handle portions would present projections which could cause discomfort to or injure the patient if he inadvertently rolled over on the same. Furthermore, the teeth on the clamping jaws could very easily tear the sheets, bedclothes, or blankets to which the same were attached.

One object of this invention is a hospital cable clamp of very simple and fool-proof construction, which overcomes the above-mentioned disadvantages. This, and still further objects, will become apparent from the following description, read in conjunction with the drawing, in which:

FIG. 1 is a perspective view of an embodiment of a signalling cable clamp in accordance with the invention;

FIG. 2 is an exploded view of the clamp shown in FIG. 1;

FIG. 3 is a plan view of the clamp shown in FIG. 1, clamping the signalling cable itself; and

FIG. 4 is a side elevation of the clamp shown in FIG. 1, clamping a bed sheet.

The hospital cable clamp in accordance with the invention has two opposed, spaced-apart lever arms. Each of the lever arms has its end portions extending toward the other lever arm crossing the opposed end portion of the same, and terminating in a hooked clamping jaw in clamping and pivotal engagement with the opposed clamping jaw of the other lever arm. Spring means are provided resiliently urging the lever arms apart and substantially aligned holes for a signal cable are defined at substantially right angles through each of the lever arms.

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Referring to the embodiment shown in the drawings, the signalling cable clamp has two opposed, spaced-apart, lever arms, 1 and 2, which extend substantially parallel to each other. The lever arm 1 has its end portions 3 and 4 bent at substantially right angles and extending toward the lever arm 2. The end portion terminates as a reverse bent, hooked clamping jaw 5, and the end portion 4 terminates as a reverse bent, hooked clamping jaw 6. The lever arm 2 has its end portions 7 and 8 bent at substantially right angles toward the lever arm 1 with their ends 9 and 10, respectively, terminating as reverse bent, hooked clamping jaws. The end portions 7 and 8 of the lever arm 2 have the slots 11 and 12, respectively, defined therethrough. These slots extend along the length of the end portions to the clamping jaws. The clamping jaw 6 is hooked through the slot 12, and the clamping jaw 5 is hooked through the slot 11, so that the lever arms are pivotally connected together at each end and the jaws 6 and 10 and 5 and 9 are in clamping engagement with each other. The clamping jaws 5 and 9 have substantially the same radius of curvature, and form a cable clamp. The jaw 6 has a substantially smaller radius of curvature than the jaw 10 and is narrower than the jaw 10, which defines a transverse slot 13 therethrough, through which the end of the jaw 6 extends when these jaws are in clamping engagement. The lever arm 1 has a hole 14 for signal cable defined through it and the lever arm 2 has a corresponding hole 15 in substantial alignment with the hole 14.

A coil spring 16 resiliently urges the lever arms apart, maintaining the jaws in clamping engagement with each other. The spring 16 is a coil spring which surrounds the hole 14 at one end and the hole 15 at the other end, and which has an inner diameter at its central portion which is somewhat smaller than the inner diameter of the holes 14 and 15. The holes 14 and 15 are preferably punched in place, so as to leave the inwardly extending annular flanges 17 and 18, over which the ends of the spring 16 extend, and which hold the spring in place. In order to present a smooth and pleasing appearance, the corners of the lever arms are rounded, and the side edges are bent to form the lips 19 and 20. These lips additionally add rigidity to the lever arms.

In operation, if the end portion adjacent the clamping jaws 6 and 10 are pressed together by means of the fingers, these jaws will be pressed open, while the jaws 5 and 9 remain in engagement. Conversely, if the other end of the clamp is pressed, the jaws 5 and 9 will open, while the jaws 6 and 10 remain in engagement. A signalling cable 21 is inserted through the holes 14 and 15 and spring 16. The cable is normally inserted prior to the attachment of the signalling call-button 22, so that when the same is positioned on the end of the cable, the clamp cannot be removed and thus misplaced or lost. The central portion of the spring 16 being of somewhat smaller inner diameter than the holes 14 and 15, is dimensioned to resiliently press on the cable and gently hold the same in place while allowing the cable to be axially slid through the holes. If the spring 16 is compressed, its inner diameter will increase, and the clamp will slide more easily. Thus the clamp may be adjusted to any position along the cable very easily and will remain in this position during normal use.

In order to clamp the clamp to the bed sheet or bed clothes of the patient, the ends of the lever arms 1 and 2 adjacent the end portions 4 and 8 are squeezed together opening the jaws 6 and 10. The jaws are then clamped over the bed sheet or the like, and the end of the jaw 6 forces the bed sheet or other fabric through the slot 13, thus firmly wedging the same in place without damaging the fiber or tending to rip or tear the

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fabric. The jaw holding the bed sheet 23 is shown in FIG. 4.

If it is desired to shorten the cable or wrap the same about a bed post 24, the cable is merely doubled back on itself, the ends of the lever arms 1 and 2 adjacent the end portions 3 and 7 are squeezed together, and the cable clamp formed by the jaws 5 and 9 is clamped over the cable, as shown in FIG. 3.

The hospital cable clamp has a very pleasing, streamlined outer appearance, and no sharp ends or projections which could injure the patient if he inadvertently rolled on the same. The clamp may be easily adjusted in any axial position along the signal cable, and will be firmly maintained in this position. The clamp cannot be detached from the cable without removing the call-button 22, and therefore cannot become accidentally lost or misplaced. If it is desired to remove the clamp for any reason, the call-button 22 is first removed. Generally, however, the call-button, along with the clamp and cable, are sterilized together as a unit.

For sanitary purposes and durability, the device is preferably constructed of stainless steel. The fabric clamping jaw with the slot 13 provides a positive and sure grip on the fabric without injuring the same, as was the case in connection with jaws provided with gripping teeth. As the clamp is centrally positioned on the cable, the same presents a much more compact and pleasing appearance and may be of somewhat smaller construction than the conventional hospital cable clamps.

While the invention has been described in detail with reference to the specific embodiment shown, various changes and modifications will become apparent to the skilled artisan which fall within the spirit of the invention and the scope of the appended claims.

I claim:

1. A hospital cable clamp comprising two opposed spaced-apart lever arms, each said lever arms having its end portions extending toward the other lever arm crossing the opposed end portions of the same and terminating as a clamping jaw, in clamping and pivotal engagement with the opposed clamping jaw of the other lever arm, each of said lever arms having substantially axially aligned holes, for a signal cable, passing at substantially right angles therethrough, a coil spring with one end surrounding one of said holes and the other end surrounding the other of said holes and in substantially axial alignment therewith for urging said lever arms apart, said coil spring further having an intermediate portion of slightly smaller diameter than the diameter of said holes whereby with said spring in its extended position the same will grip a signal cable threaded through said holes and will release said cable for sliding therethrough when compressed.

2. Clamp according to claim 1 in which at each end of the clamp the end portion of one of said lever arms defines a slot extending along its length to the clamping jaw, with the opposed end portion of the other lever arm extending therethrough.

3. Clamp according to claim 1 in which the mating clamping jaws at one end of the clamp are reverse-bent and have substantially the same length defining a cable clamp, the mating clamping jaws at the other end are

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reverse-bent having different lengths defining a fabric clamp, the longer clamping jaw defining a transverse slot therethrough, the shorter clamping jaw being positioned with its end extending into said transverse slot.

4. Clamp according to claim 3 in which the clamping jaws defining the cable clamp are substantially arc-shaped clamping jaws.

5. A hospital cable clamp comprising two opposed spaced-apart lever arms, each said lever arm having its end portions bent and extending toward the other lever arm and terminating as a reverse bent hooked clamping jaw in clamping engagement with the opposed clamping jaw of the other lever arm, the mating clamping jaws at one end of the clamp having substantially the same length defining a cable clamp, the mating clamping jaw at the other end having different lengths defining a fabric clamp, the longer clamping jaw having a transverse slot therethrough, the shorter jaw having a blunt end extending into the transverse slot to thereby enable the same to securely grasp fabric without puncturing or tearing, and substantially aligned holes, for a signal cable, at a substantially right angle through said lever arms, and spring means resiliently urging said lever arms apart.

6. Clamp according to claim 5 in which said lever arms are substantially parallel spaced-apart lever arms with their end portions bent at substantially right angles, the bent end portions of one of said lever arms each defining a slot extending along its length to the clamping jaw with the opposed clamping jaw of the other lever arm extending therethrough.

7. Clamp according to claim 6 in which said spring means comprises a coil spring positioned with one end surrounding the hole passing through one of said lever arms and the other end surrounding the hole passing through the other lever arm in an axial alignment with said holes and having an intermediate portion of slightly smaller inner diameter than the holes, whereby the same will grasp a signal cable threaded through said holes and release said cable for sliding when the spring is compressed.

8. In a clamp having movable lever arms for opening and closing the clamp and axially aligned holes passing through the lever arms for threading a signal cable therethrough, the improvement which comprises a coil spring positioned with one end surrounding one of said holes and the other end surrounding the other of said holes in axial alignment with said holes, said coil spring having an intermediate portion of slightly smaller inner diameter than said holes whereby the spring will grasp a signal cable threaded through said holes and will release said cable for sliding movement through said holes upon compression of the spring.

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