My invention relates to pile driver pads and more particularly to pile driver pads employing coiled cable. It is known in the art that, when driving concrete piles into the ground by means of a pile driver, it is necessary to interpose resilient pads between the hammer and the top of the pile to take the impact and thereby protect the top end of the concrete pile from disintegration. One of the customary methods of making such resilient pads is to wind resilient steel cable into single layer spiral coils and secure the adjacent turns of the coils by tack welds spaced at intervals in order to prevent their unwinding. Experience shows that these tack welds represent serious handicaps in the durability of these pads. The heat applied at the welding impairs the resiliency of the cable at the welded points and the material of the weld is hard and has sharp contours, as a result of which, at these welded points the cable is destroyed by the impact of the hammer much sooner than the non-welded portion of the cable of the coil. This means that under the impact of the hammer the pile driver will have a longer life if no welding is employed for securing the turns of the coil.

The principal object of my invention is to provide pads for use in pile drivers in which coiled cable is employed without any welding. In my method the original resiliency of the cable is uniformly maintained in all parts of the pad.

Another important object of my invention is to provide pile driver pads in which the coil of cable is retained in shape by a close fitting casing of pliable metal which, under the impact of the hammer, will adapt itself to the surface of the cable, and result in which the impact force will be distributed more evenly and on a larger area of the coiled cable, causing a reduced impact stress and a longer operating life of the pad.

A further object of my invention is to provide pile driver pads which are manufactured, which is very economical, principally due to the elimination of the welding work, also due to a novel and improved method applicable for the winding of the coils.

Other objects and advantages of my invention will be apparent during the course of the following description. In the accompanying drawing, forming a part of the present application, wherein for the purpose of illustration are shown a preferred and an alternative form of my invention,

FIGURE 1 is a partly sectional side view of the preferred form of my invention,

FIGURE 2 is a top view of my pile driver pad,

FIGURE 3 is a partly sectional side view of an alternative form of my pile driver pad.

Referring to the drawing, the numeral 1 designates the cable which, in the preferred form consists of several strands of resilient steel wires. This cable 1 is wound into a single layer flat spiral coil, shown in FIG. 2; partial cross sections of the coil are illustrated in FIGS. 1 and 3. The inner end 2 of the cable of the coil is bent and extended inwardly. The numeral 3 represents the outer end of the cable in the coil.

An important element of my invention is the casing 4 which, in the preferred form is disk shaped and is made preferably of pliable sheet metal. The casing 4 is composed of two parallel walls 5 and 6 and a cylindrical wall 7 connecting said parallel walls at their peripheries. In the forms illustrated these parallel walls 5 and 6 are circular, and have perpendicular peripheral flanges 8 and 19, respectively. These flanges overlap, forming the cylindrical wall 7 of the casing 4. Flange 19 is bent over to secure these flanges and the connected parallel walls 5 and 6 in position. It is important in the design of the casing 4 that parallel walls 5 and 6 should be so spaced from each other so as to fit closely the thickness of the coil as determined by the diameter of the cable 1.

The parallel walls 5 and 6 are provided with central holes 9 and 11, respectively, which contain a tubular or cylindrical sleeve 13. In FIG. 1 this sleeve 13 has two flanges 14 and 15 the function of which is to retain the parallel walls 5 and 6 against forces tending to increase the spacing between the parallel walls in order to maintain the tightness of the casing over the coil. In FIG. 3 the sleeve 13 is integral with the lower parallel wall 6, hence, only one flange 14 is required for maintaining the spacing between the parallel walls.

The sleeve 13 is provided with a side opening 16 adapted to engage the inner end 2 of the cable, an important feature to facilitate the winding of the coil and also for securing the coil within the casing.

In the preferred form of my invention, illustrated in FIG. 1, the sleeve 13 is rotatably mounted within the central holes 9 and 11 of the parallel walls 5 and 6. This feature is an important part of my invention because it permits the application of a novel, safer and more economical method for the winding of the spiral coil. The essence of this novel method is that the end 2 of the cable is introduced into the casing through the opening 12 provided in the cylindrical wall 7, and then inserted into the side opening 16 of the sleeve 13. Following this, the sleeve 13 is rotated, with the casing 4 secured in position, with the result that the cable will be drawn into the casing and wound into a spiral. One of the important advantages of this method is that during the winding the coil is always enclosed by the casing, hence, an injury to the worker by the cable is precluded.

In the alternative form of my invention, illustrated in FIG. 3, the sleeve 13 is non-rotatably secured to the parallel side 6. In this form the coil is wound in the lower portion of the casing before the upper parallel wall 5 is installed and the flanges 8 and 14 are bent over.

This form of my invention is practicable in cases of thinner and more flexible cables where the winding of the coils may be done manually.

The fundamental operational advantage of my invention lies in the total absence of welds which would destroy the uniformity of the impact strength of the cable. Instead of the sharp points of the wires cutting into the cable, the coil is uniformly covered by a sheet of pliable material whereby the force of the impact will be distributed more evenly and on a larger area.

It is to be understood that the forms of my invention herein described and illustrated are only examples of the same, and that various changes in the shape, size and arrangement of parts may be resorted to, without departing from the spirit of my invention or the scope of the subjoined claims.

I claim:

1. A pile driver pad comprising a flat coil of spirally wound resilient cable having an extended inside end; a casing enclosing said coil and being composed of two parallel circular walls spaced to fit said coil, each with a central hole, and a cylindrical wall connecting said parallel walls at their peripheries; a cylindrical sleeve extending through said central holes of said parallel walls, the ends of said sleeve being adapted to engage said parallel walls so as to prevent an increase of the spacing between said parallel walls, said sleeve having a
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3. A side opening adapted to engage said inside end of said cable forming said coil.

2. The pile driver pad of claim 1 in which said cylindrical wall has an opening large enough to admit said cable and said cylindrical sleeve is rotatable within said central holes of said parallel walls.

3. The pile driver pad of claim 1 in which said cylindrical sleeve is non-rotatably secured to a parallel wall of said casing.

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