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MOUNTING MEANS FOR LINE HOLDER

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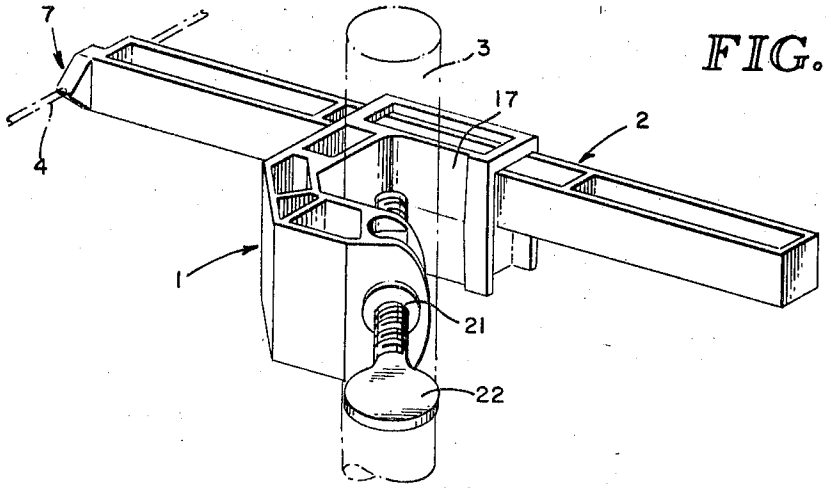


FIG. 1

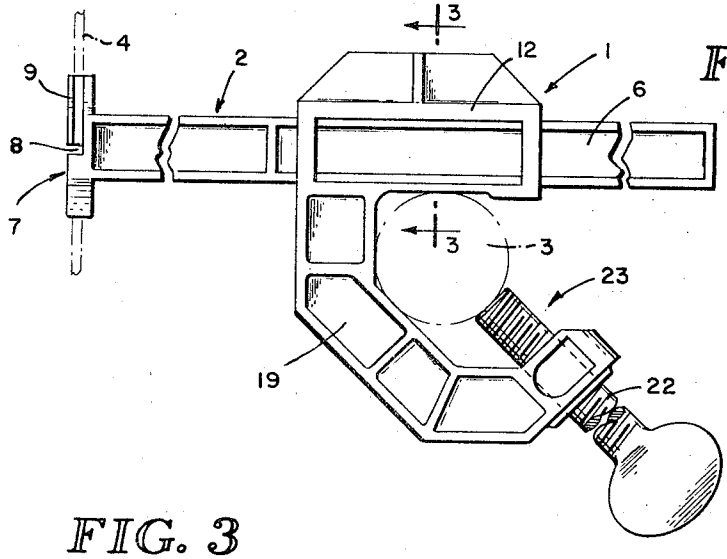
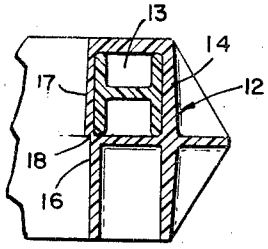


FIG. 2

FIG. 3



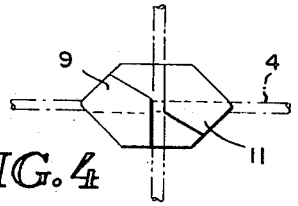


FIG. 4

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MOUNTING MEANS FOR LINE HOLDER

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ABSTRACT OF THE DISCLOSURE

A clamp body having a slotted opening for receiving vertical grade or line stakes of varying sizes. A thumb screw extends through the clamp body and is adapted to contact the vertical stake to fix the clamp in position. The clamp body is made from semi-rigid plastic material and has a through opening at right angles to the slotted opening for receiving a horizontally disposed adjustable line holder or arm. The clamp body has a frangible offset wall section located so as to yield and press against the line holder when the thumb screw is tightened.

Background of the invention

The present invention relates to mounting means for line holders such as used in surveying and in the building trades generally. More specially, the present invention relates to an improved mounting means for adjustably mounting a grade stake arm to a vertical stake.

As will be appreciated by those familar with building and surveying practices, it is ofttimes necessary to locate a line or wire on grade as well as position. A common form of support for such a line comprises a vertical stake and an adjustable arm to which the line is attached. The vertical stake used to support the adjustable arm may vary greatly in size and cross section. These stakes are reusable but, because of bending or distortion, become unsuited for use with clamping members which must be passed over the end of the stake. The need arises therefore for a clamping member which is usable with a wide range of stake sizes and cross sections and which need not be passed over the end of the stake. In addition, there is a need for simplicity in the construction of the clamp and arm member so that the clamp and line holding arm may be installed in a rapid manner. Since large numbers of the clamps and adjustable arms are necessary, they must also be relatively inexpensive and yet durable so as to be reused many times.

The present invention seeks to provide an improved mounting means for line holders of the character described which overcomes the deficiencies of prior art devices of this type and provides a significantly improved structure. One of the objects of the present invention is, therefore, to provide mounting means for the line holder which is adapted to receive a vertical stake having a wide range of diameters and cross sections.

Another object of the present invention is to provide a mounting means of the character described which is simplified in operation whereby the mounting means may be locked in vertical position and the line holder or support arm may be locked in a laterally adjusted position by means of a single clamping screw.

Another object of the present invention is to provide a mounting means of the character described which has a frangible wall section designed to increase its flexibility and to enhance its ability to hold the line holder or stake arm in a given lateral position of adjustment.

A further object of the present invention is to provide a mounting means and line holder which may be constructed from plastic or other semi-rigid non-metallic material.

Still further objects and advantages of the present invention will be apparent to those skilled in the art from the following specification and claims and from the accompanying drawings wherein:

Description of the drawings

FIG. 1 is a perspective view of the mounting means and line holder in assembled position on a stake;

FIG. 2 is a plan view of the mounting means and line holder in assembled position;

FIG. 3 is a cross-sectional view taken along lines 3—3 of FIG. 2; and

FIG. 4 is an end view of the line holder illustrating the manner in which line engages the holder.

Description of the invention

Reference is now made to the drawings wherein like reference numerals indicate identical parts in the various views. The device includes a mounting member indicated generally at **1** and a line holder or elongated arm **2** which extends through the mounting member. The member **1** is mounted on a vertical grade stake **3** which is usually a cylindrical metal stake and a line or wire **4** is held in the outer end of the arm **2** by means presently to be described.

Referring first to the arm **2**, it may be seen that it is rectangular and, since it is constructed from a non-metallic material such as a suitable molded plastic, may be in the form of an H-beam cross section for rigidity. The holder includes the arm portion **6** and the line engaging tip **7**. The tip **7** is a conventional structure which allows the line to be engaged therein by pressing the lines into the grooved portion **8** as indicated in FIG. 4 and then rotating the wire to the horizontal position shown where it is retained by the tabs **9** and **11**. In practice, the line **4** is located as to elevation and lateral position by moving the clamp **1** vertically and the arm **6** horizontally and then clamping them in position.

The mounting member **1** comprises a clamp which may also be made of molded plastic and which is generally C-shaped in plan view as seen in FIG. 2. The clamp includes a body portion **12** formed so as to provide a rectangular through passage **13** for slidably receiving the arm **6**. The body portion **12** has parallel vertical walls **14** and **16** which form the sides of the passage **13** and may be molded with any desirable form of reinforcing webs and gussets to provide the necessary rigidity. The wall **16** has a frangible portion **17** which is offset from the lower portion of the wall and designed to fracture or break along the line **18** so that it will transfer pressure against the arm **6** upon tightening of the clamp screw in a manner to be described.

The remaining portion of the clamp comprises the angled or curved leg **19** which provides a screw-threaded opening **21** for receiving the thumb screw **22**. The leg **19** is so formed as to allow the clamp to be applied in a lateral direction onto a vertical stake when the thumb screw **22** is withdrawn. As will be apparent from FIG. 2, the enlarged opening **23** defined by the leg **19** and body portion **12** of the holder may be so proportioned as to allow grade stakes of a wide range of diameters to be engaged. As will be seen in FIG. 2, upon tightening the thumb screw **22**, the stake **3** will be contacted and forced against the intermediate portion of the leg **19** and the frangible wall portion **17** of the wall **16**. As additional pressure is exerted, the wall **17** will fracture along the line **18** to insure that the arm **6** is clamped within the opening **13** as the thumb screw is tightened. In this manner, a single thumb screw action is utilized to locate the clamp **1** for proper elevation on the stake **3** and to simultaneously lock the arm **6** in lateral position to accurately locate line **4** as desired. It will also be noted

that, regardless of how deformed or mushroomed the top end of the stake 3 becomes, it has no effect on the ability of the clamp 1 to be engaged along the length of the stake. The present structure thus provides a mounting means for a line holder which is quickly and easily assembled on the stake, is adaptable to varying sizes and shapes of grade stakes and operated with improved efficiency and economy.

From the foregoing it will be apparent to those skilled in the art that the present invention provides new and useful improvements over prior art devices of the character under consideration. The arrangements and types of structural components utilized within the invention may be subjected to numerous modifications well within the purview of this invention and applicant intends only to be limited to a liberal interpretation of the specification and appended claims.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. In combination with a line holder having an elongated arm and means to engage and hold a line on one end thereof, a mounting device for mounting the line holder to a stake comprising; a body portion having a through passage for snugly engaging said elongated arm, a curved leg portion extending from the body to form a slotted opening for reception of a stake at right angles to the arm, said body portion having a yieldable wall section common to said through passage and said slotted opening, and thumb screw means for pressuring said stake against the yieldable wall section of said body to simultaneously clamp the mounting device to the stake and the arm to the mounting device.

2. The combination according to claim 1 wherein; said yieldable wall section constitutes an offset frangible wall section which separates under pressure to enhance its flexibility, said frangible wall section being contacted by said stake upon tightening the thumb screw.

3. The combination according to claim 2 wherein; said mounting device is constructed from a molded semi-rigid non-metallic material.

4. In combination with a line holder having an elongated arm and means to engage and hold a line on one end thereof, a mounting device for mounting the line holder in a fixed position on a stake comprising: a body portion having a thin walled elongated through passage adapted to snugly receive said elongated arm, a generally curved C-shaped leg portion extending from said body portion and cooperating therewith to form an enlarged slotted opening for receiving a stake at right angles to said elongated arm, said body portion having a yieldable wall section common to said through passage and said slotted opening, a thumb screw threadably engaged in the end portion of said leg and adapted to contact the stake when advanced so as to pressure the stake against said yieldable wall section whereby the mounting device is clamped to said stake and the line holder is simultaneously clamped in said through passage.

5. The combination according to claim 4 wherein; said yieldable wall section constitutes an offset frangible section which separates under pressure to enhance the flexibility of the wall and to provide a means for applying positive pressure to hold said arm fixed in said passage.

6. The combination according to claim 5 wherein; said mounting device is constructed from a molded semi-rigid nonmetallic material.

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