Auburn University

Innovation Advancement & Commercialization

"Pinpoint Placement" Laser Square

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Reference: Laser Square

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Status

- Working prototype has been produced and demonstrated (see video demo)
- Issued US Patent 8,266,807

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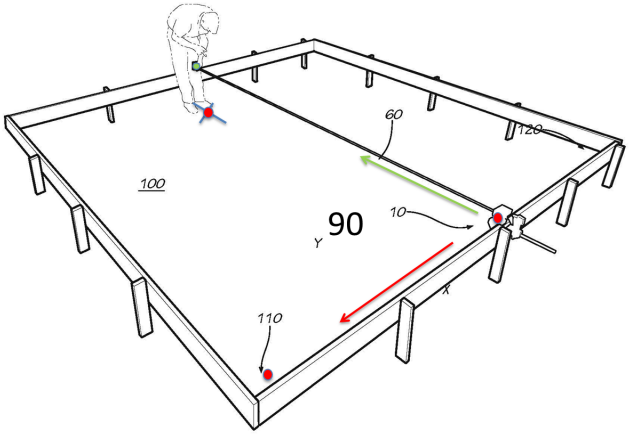
Overview

Auburn University is seeking a licensee or development partner for a laser-guided square that aligns measurements to ensure a high level of accuracy. In construction, the majority of building components are laid out using a series of right angles. Any variation in that angle during measurement can lead to errors that can cause significant problems in the downstream construction process. This "Pinpoint Placement Tool" (PPT) uses laser guidance to confirm that measurements are being taken precisely at right angles. Further, a laser plumb allows for the user to accurately mark the location of the measurement, eliminating further potential errors. This invention has potential applications in construction, surveying, home improvement, landscaping and engineering.

Advantages

- Design ensures measurements are taken at right angles, enabling higher precision
- Laser plumb ensures measurements are marked at precisely the desired point



Description

Traditionally, when performing layout on smaller structures such as a residential home, a tradesman's primary tool is the tape measure. The tape measure is used to locate points in a two dimensional plane. For example, many utilities (water, electric) are placed beneath a slab. Before the slab is poured, the utilities are stubbed-up to target future walls or specific locations within the slab which will later be connected to fixtures and equipment. If the utilities penetrate the slab in the wrong location, a portion of the slab will have to be removed and the utilities will have to be re-routed. This error can result in significant delays and cost over-runs.

Typically, a lumber form is erected (see picture above) prior to laying out the slab penetrations. Utilizing the form board as a baseline, tradesmen will mark the locations of the future wall intersections from one direction and utility penetrations from another. These measurements are subject to angular errors if the tape is not held at a perfect ninety degree angle. Even an error of 1-2 degrees could cause a penetration to land outside of a future wall, causing significant additional costs and delays.

As a solution to this problem, Auburn has developed the pinpoint placement laser square tool (PPT). The PPT works by utilizing a series of alignment lasers which are 90 degrees opposed. The function of one of those lasers is to square the base unit with the form board. The other laser is used to line-up the tape measure at a perfect 90 degree angle to the board. Once the depth of the measurement is determined, a laser plumb marks the desired point. Other applications where high precision measurements are required can certainly be envisioned.

Licensing Opportunities

- This technology is available for exclusive or non-exclusive licensing
- Joint development opportunities include funded research or joint testing

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