

## INVENTION

# Patents of the Week

A method of placing shallow structural sections end-to-end so that they can be converted into a single horizontal beam to underpin buildings was awarded a patent.

► A NEW METHOD for underpinning buildings when nearby land is to be excavated earned patent 3,091,938 from the U.S. Patent Office.

Harry Schnabel Jr. of Bethesda, Md., devised a way of placing relatively shallow structural sections end-to-end so that they can be converted into a single horizontal beam to support a building below the level of its original foundation. The sections are preferably made of concrete and converted into a beam by extending prestressed cable through them.

Using Mr. Schnabel's method, much longer sections than the usual four to five feet can be underpinned at one time, thus decreasing the number of piles, piers or caissons required.

Chief advantages are said to be greater economy and much more safety.

## Method to Raise Sunken Vessels

A new method of raising sunken vessels, utilizing buoyancy after it has been restored, earned patent 3,091,205 for William Watson of Marblehead, Mass.

His invention calls for injecting plastic foam into a sunken ship so that water is displaced and buoyancy restored. The foam method does not require watertight compartments because the foam lifts the vessel, not the air in a watertight compartment.

A salvage vessel equipped with tanks adapted to contain two fluids is part of the method. The two fluids are mixed to form the foam and a hose takes the fluid down to the interior of the sunken vessel.

A diver inside or outside the sunken vessel then simply inserts the nozzle in a hull opening, and operates a valve that directs the two fluids into the mixing head.

Each compartment of the vessel is filled separately until sufficient water has been displaced to make the vessel buoyant. Once the ship has been dry-docked, the plastic foam may be cut out easily.

## Adjustable Mooring for Boats

A mooring structure that automatically adjusts itself to changing water levels earned patent 3,088,287 for Vivion C. Berry, Bull Shoals, Ark.

Guide rails connecting the shore and mooring building are made so that the building can slide up and down at a 45-degree angle on rails as the water level rises and falls, either from tides or by man's control in dammed lakes. A roller-mounted bracket is built into the rails to insure easy movement.

The guide structure may connect landings at several different levels. Provision is also

made for a stairway built into the guide structure.

Three guide rails support the slide on which the mooring structure moves up and down. They may be conventional I-beams or H-beams. The stairway is built between the two guide rails.

## Other Patents

Other patents awarded include:

A "spinner" attachment for shoes, which enables the wearer to do a better dance of the "twist," which gained Jimmie McCorkle, Amarillo, Texas, patent 3,091,043.

Grooved roofing, comprising a base sheet of roofing felt saturated with a waterproofing compound and coated with a layer of high melting point asphalt, which earned patent 3,091,898 for George Arthur Fasold, Mt. Healthy, Ohio, and Walton V. Leibold, Wyoming, Ohio.

A silencer for automobiles, calling for a conduit to be installed in the trunk so that the noise from the passenger compartment is discharged in the luggage compartment. Walter H. Powers, Racine, Wis., earned patent 3,092,204 for his invention.

A portable carport, collapsible for easy shipment, for which Audrey K. Smith, Stockton, Calif., was awarded patent 3,092,126.

• Science News Letter, 83:397 June 22, 1963

## TECHNOLOGY

### Water Keeps Fresh In Cardboard Boxes

► STORE YOUR WATER in a cardboard box, and it will keep fresh for more than a year.

Not just any old box, however, states Prof. James C. White, Cornell University. It must be a special box lined with polyethylene. Unlike bottles, tins, or other materials, this box "breathes," and keeps the water fresh without changing its taste or odor.

Water must be pure, free from all bacteria, the scientists pointed out, in order to store it for long periods of time.

This system of keeping water fresh is already being used by some commercial firms in areas where supplies of good drinking water are scarce. Cardboard containers can also store distilled water for filling steam irons and batteries, and for making baby formulas.

These boxes are the best yet devised for storing water in air raid shelters, Prof. White said. Prof. White has spent years developing the corrugated box, which contains a polyethylene bag with a small spout projecting through the carton.

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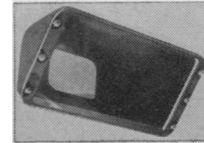
## TECHNOLOGY

### Properties of Polymers Affected by Humidity

► LONG-TIME exposure to varying humidity significantly affects the dielectric properties of certain polymers, a recent study shows. This finding is directly related to the care of dielectric reference standards, and may be relevant to the use of polyethylene as insulation for underwater telephone and telegraph cable.

The study is part of a program being conducted by A. H. Scott and W. P. Harris of the National Bureau of Standards to develop standard reference specimens for dielectric measurements. The results obtained over a three-year period clearly demonstrate that specimens intended to serve as dielectric reference standards must be maintained under carefully controlled conditions and measured under these same conditions. In addition, the conditioning history of a specimen must be known if an accurate evaluation is to be made of its properties.

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