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## ENGINEERING ABSTRACTS

### SINKING PIERS AND CAISSONS BY DYNAMITE

Frequently caissons are sunk in slanting soil strata or come into contact with imbedded logs and large boulders which makes it difficult for the caissons to maintain a vertical position. It has been found that by using from one to four pounds of 60 per cent straight dynamite the blast will remove the obstruction. The explosive charges primed with electric blasting caps are wrapped in a water-proof package, a Duplex leading wire attached and the package forced down to the desired position by four-inch jets having a water pressure of 250 pounds and a volume of 500 gallons a minute. In this way charges have been carried down through sixty feet of water and thirty feet of underlying materials and set off with no damage to caissons or concrete. On straight sinking work, small charges of dynamite have been used to jar piers when they become friction bound, and also to cut off the concrete piles driven for test purposes by placing around each one a little 60 per cent straight dynamite and firing the charge. Piers have been successfully righted from a list of four feet by the same corrective measures as used for the caissons.

—*The Du Pont Magazine.*

### WATER POWER ON THE FARM

The old water-driven grist mill has long since passed into the realm of antiques. The streams, however, still remain, and there is still as much power as there ever was in the water if it can only be utilized economically and efficiently.

A most interesting booklet on this subject recently came to our attention. It contains all the information needed to design any small hydro-electric farm-lighting plant. It contains tables of sizes of wheels, water head, cubic feet of water needed, and speed of turbine or wheel. The various types of dams and penstocks are also described. The overshot water wheel is more extensively treated than any of the other types. The tables give the approximate H.P. developed with any given head, volume of flow, and type of wheel used.

This interesting as well as instructive booklet is printed and issued by the Fitz Water Wheel Co., of Hanover, Pa., a company which specializes in the manufacture of apparatus of this type.

### TRANSFER

The world's largest substation, owned and operated by the New York Central Railroad Company, was transferred from a building on the corner of Park Ave. and 50th St. in New York City to a rock cavern seven blocks away and 100 ft. below the street surface in the heart of the Grand Central skyscraper zone. The transfer was completed February 16, at a total cost of \$3,000,000. In a little more than eleven months this 25,000 kw. station, consisting principally of ten rotary converters and an 8,000 amp.-hr. storage battery, was moved without interruption to service.