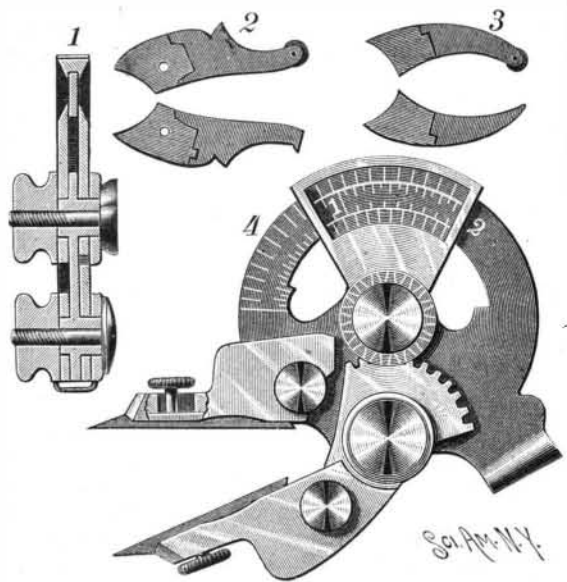


IMPROVED CALIPERS AND DIVIDERS.

The illustration herewith represents an improved measuring and drawing instrument specially adapted for mechanics, and to be used as inside and outside calipers, dividers, etc. It has been patented by Mr. Thomas Green, of No. 651 Christie Street, East Davenport, Iowa. Fig. 4 is a face view and Fig. 1 a transverse section of the instrument. The central plate has a hub, on which is mounted to turn the indicator, fitting over

**GREEN'S CALIPERS AND DIVIDERS.**

the sides of the plate and on to the hub on each side of the plate, the indicator being held in place by a bolt passing through the center of the hub. A nut screws on the bolt against the other arm of the indicator, and by adjusting the nut the indicator is permitted to turn freely on the hub, or is fastened in any desired position. The indicator has slots on both sides, near its outer edge, arranged segmentally and directly over the outer edge of a segmental part of the central plate, and both the inner and outer edges of these slots, on both sides of the indicator, are formed with graduations, indicating over graduations formed on the inner and outer edges of the segmental part of the central plate. The graduations may be of two systems, on each face, one system indicating by the English and the other by the metric system, making a combination of readings on both sides of the instrument. Around its axis the indicator has gear teeth, which mesh into a segmental

gear wheel turning on a bolt secured in the plate, this segmental gear wheel having an arm adapted to carry a pointer arm, as shown in Fig. 4, or one of the inside or outside caliper arms shown respectively in Figs. 2 and 3. The other arm of the dividers and calipers is adapted to be secured to the fixed plate by a bolt, and in order to hold the arm in place there is a notch in the plate, into which fits a corresponding lug formed on the arm. The dividers and inside and outside calipers are adapted to be adjustably fitted into the arms, respectively, according to the use to be made of the instrument, one of the inside and one of the outside caliper arms being provided with a friction wheel at its point. To open or close the divider or caliper points, the operator takes hold of the central plate and moves the indicator, whereby the points are moved toward or from each other, the graduations on the scales indicating the exact measurement in inches or centimeters, etc.

An Electric Light Cake.

The sequel to the celebration of Mr. Edison's 42d birthday recently occurred, when, according to the *Electrical Review*, the servants employed in his house and outbuildings, not to be outdone by the employes of the laboratory, presented him a birthday cake of immense size and novel construction. It was about 2 feet in diameter and 12 inches high. It bore the inscription: "Thomas A. Edison, 1889," in colored greenish-white frostwork, and around its edges were 42 tiny incandescent electric lights, supplied from a battery placed in a cavity in the center of the cake.

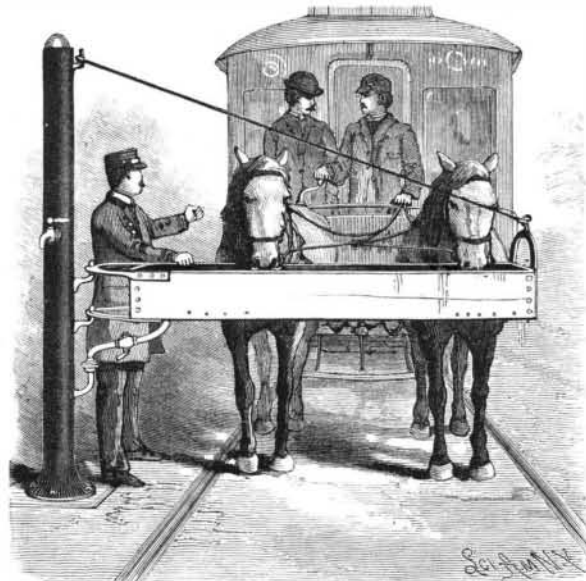
THE NEW SPANISH SHIP OF WAR PELAYO.

This magnificent vessel was launched at Toulon, France, in 1887, having been built by the Societe des Forges et Chantiers de la Mediterranée. Our engraving is from a photograph of the ship. She is approximately, 350 ft. in length; beam, 67½ ft.; depth, 41½ ft.; draught, 25 ft.; displacement, 9,902 tons. She has two screws, driven by four compound engines; also forty-two auxiliary engines used for various purposes, from the working of small fresh water pumps up to those for operating the hydraulic pumps that work the gun towers.

Her armament consists of two 49 ton 10 inch guns, longitudinal axis, mounted in barbette in two turrets; two 12 inch guns, 49 tons each; two 10½ inch 33 ton guns, in barbette in two lateral towers; one 6 inch bow gun; twelve 4½ inch guns in battery, steel breech-loaders, system of G. Hontoria. This ship is one of the most powerful vessels afloat.—*Ilustracion Espanola.*

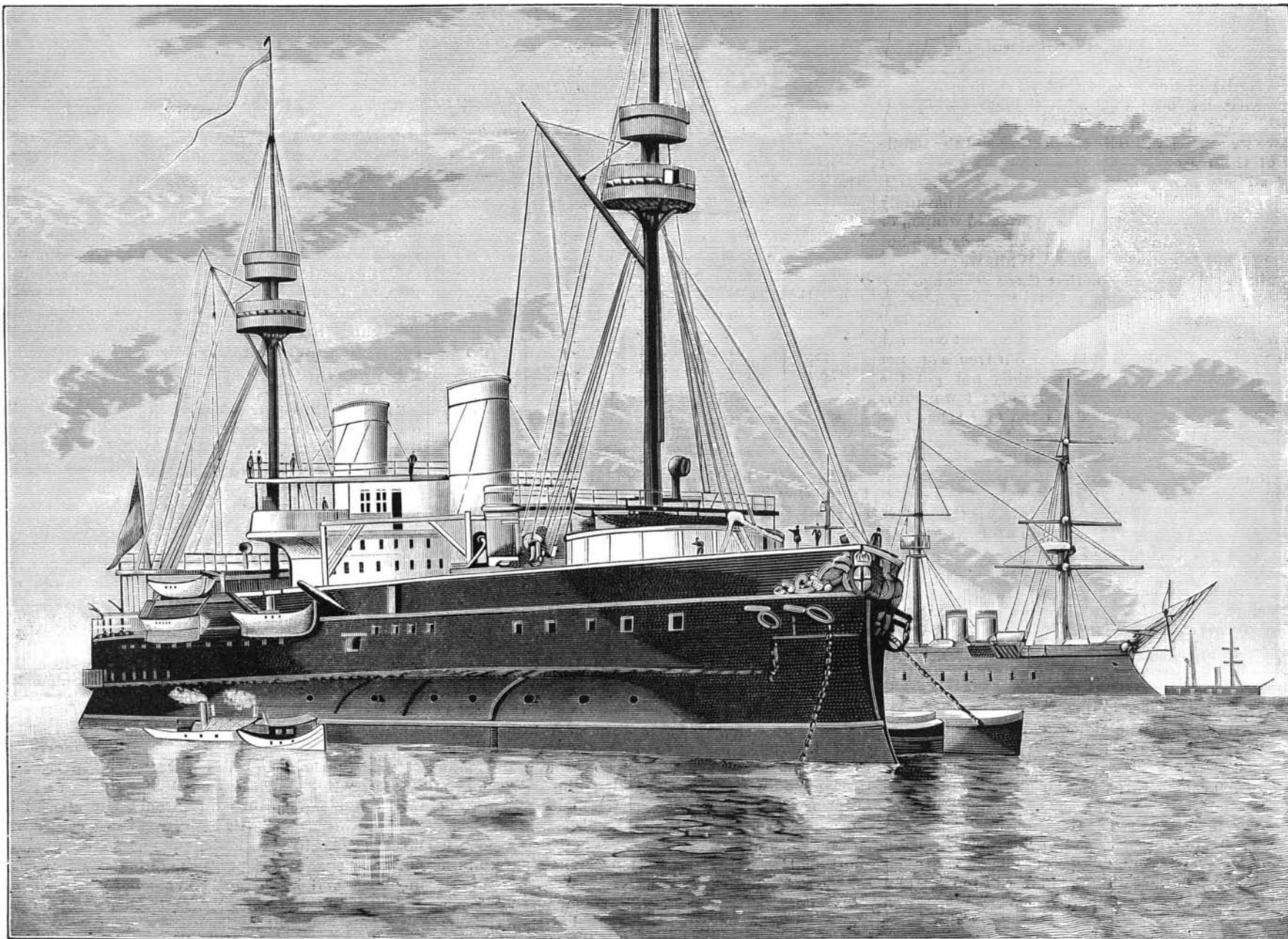
AN IMPROVED WATERING TROUGH.

The accompanying illustration represents a swinging watering trough particularly adapted for street railways. It has been patented by Mr. George W. Langdon, of Clinton, Mass. The trough is hinged at one end to a hollow standard adjacent to the track, a water supply pipe rising in the standard and extending through a side opening above the trough, the outer end of the pipe being provided with a cock, through which

**LANGDON'S WATERING TROUGH.**

the trough may be supplied with water. A discharge pipe is also arranged inside of the standard, extending outward through an opening beneath the water trough, where it is connected, by means of a swivel joint, with a pipe opening in the under side of the trough, the latter pipe having a cock by which the water may be drawn off from the trough.

THE death is announced of the Rev. J. G. Wood, F.L.S., the well known naturalist. The wonders and the beauties of nature found in him an enthusiastic and intelligent exponent. No one, perhaps, in the present age was more diligent and successful, by his writings and lectures, in fostering, especially in the minds of the young, the love of the study of living things. Mr. Wood was the son of a surgeon at one time lecturer on chemistry at the Middlesex Hospital.

**THE NEW SPANISH SHIP OF WAR PELAYO.**