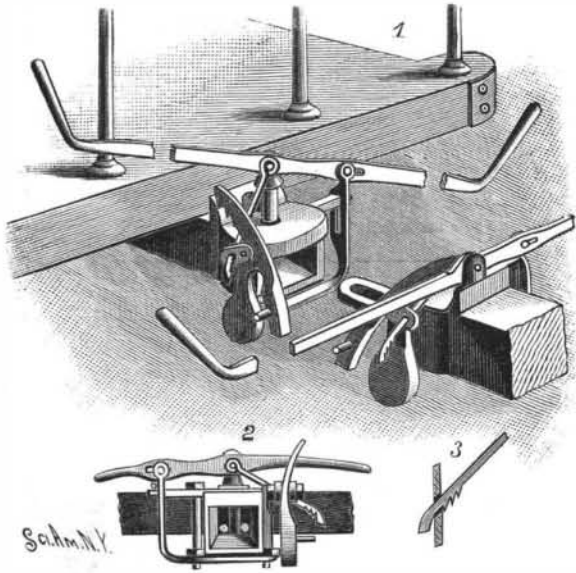


**CAR COUPLING.**

An improved car coupler is represented in the cut, in which a very complete action is provided for as regards the coupling process. The drawhead is of the ordinary type, so that the invention can be applied to any car with comparatively slight additions. The coupling



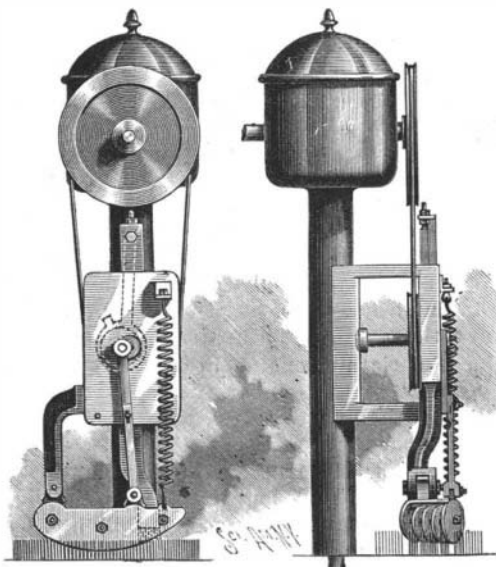
**FOSTER'S CAR COUPLING.**

pin is pivoted to the center of a transverse lever, whose ends, extending outward, can be manipulated from either side of the platform. When the lever is inclined so as to hold the pin up and out of engagement as shown in Fig. 1, it is held in that position by a rack pawl, pivoted at the same point as the coupling pin, Fig. 2, whose teeth catch in a hole in a small plate carried by a counterweighted piece swinging longitudinally. When the cars come together the lower end of this piece is struck and the catch is tripped, releasing the pawl. At once the main cross bar resumes the horizontal position and the pin drops into place through the link. As the main cross bar does this it also raises a small cross piece whose lower member extends across and underneath the opening in the drawhead. This picks up the end of the link and guides it with certainty to its place. In Fig. 2 is shown the method of applying this invention to an ordinary drawhead, where two bolts hold the whole in working position. This coupling is the invention of Mr. A. G. W. Foster. Inquiries relative to the same may be addressed to J. H. Shel-muth, Esq., Jasper, Ala.

**UNWIN'S DABBING MOTION FOR NOBLE COMBS**

Has been in actual use in Belgium, France, England, and America from one to two years, and is, therefore, no experiment. This motion dispenses entirely with the brush so far as the large circle is concerned, and uses only a small brush, 1 by 3 inches, for dabbing into the small circle. This small brush will wear for months before requiring repairs, and the item of brush repairs, so costly on the old styles of brush motions, is, therefore, nominal on the Unwin motion. The saving in brush repairs alone will pay for this motion in a short time.

The dabbing is effected in the large circle by means of a rocking arm, to which are fastened curved steel blades, which press the wool gradually into the pins. The blades and arm are so constructed that a portion of the blades never rises above the pins. The wool is, therefore, pressed well down into the circle, and cannot possibly rise above the pins. After passing the dabber, the motion of the dabber is so easy and positive that it can be run much slower than a brush, and the circle can safely be speeded up to three revolutions



**UNWIN'S DABBING MOTION FOR NOBLE COMBS.**

per minute, while the dabber makes but four hundred strokes per minute. Owing to the reduced speed of the dabbing motion, the vibration of the comb is almost entirely avoided.

Practical tests of this dabbing motion in actual use show a largely increased production of top, resulting from the increased speed at which the comb is run, and at the same time the proportion of top is greater, and the noils are less than with a brush motion. The actual percentage of increase of top over that made on same comb by brush motion is at least three per cent.

For further information, address Paul Unwin, superintendent Manhattan Worsted Mills, 130th Street and 11th Avenue, New York.

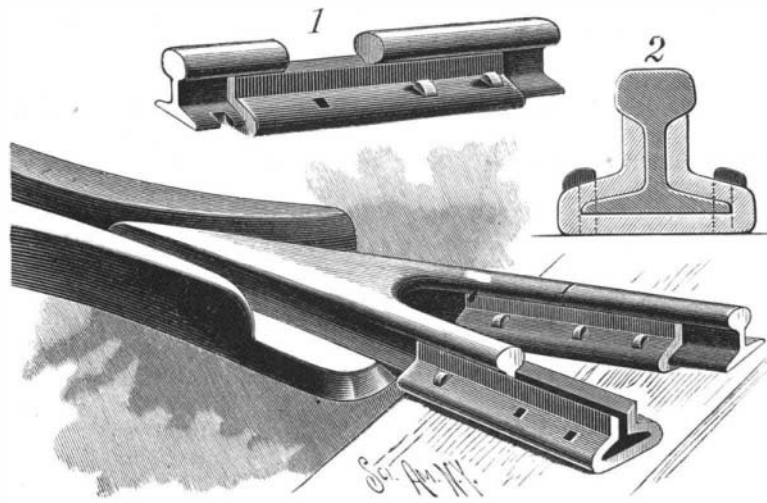
**Another Flour Dust Explosion.**

At Cleveland, Ohio, September 15, at 3 o'clock A.M., an explosion of flour dust fired the National Flouring Mills, owned by M. B. Clark & Son, caused a loss of \$125,000, killed two men, and severely burned four others. Nobody knows how the explosion originated. It shook the earth for a mile, making buildings tremble and doors and windows rattle.

When the first fire chief arrived on the ground, he found seven men prostrate in the street. Some of them were on the outside of the building when the explosion occurred, and had been thrown violently down, while others had been blown out of the mill windows. Most of them were only stunned, and gradually recovered. The building burned very rapidly, and with it 1,200 barrels of flour and 40,000 bushels of wheat.

**AN IMPROVED CHAIR, FISH PLATE, AND RAIL COUPLER.**

A railway rail chair and fish plate designed to hold the rail more firmly than is ordinarily effected, and prevent the rails from getting away from a perfect adjustment in line with each other, is illustrated herewith, and has been patented by Mr. Willard Wilt, of New York City, P. O. Box 3,526. The combined chair and fish plate coupling is shown in full and sectional views in Figs. 1 and 2, being made in a single piece,



**WILT'S COMBINED CHAIR, FISH PLATE, AND RAIL COUPLER.**

with vertical branches forming the fish plates, these yielding laterally to embrace the web of rails of various sizes. The rail is made with spike recesses or notches, which are sufficiently elongated to allow for all contraction and expansion, while the spike holes in the chair and coupling fit exactly to the spike, preventing the rail from being drawn apart more at one point than another.

**Electrical Boats.**

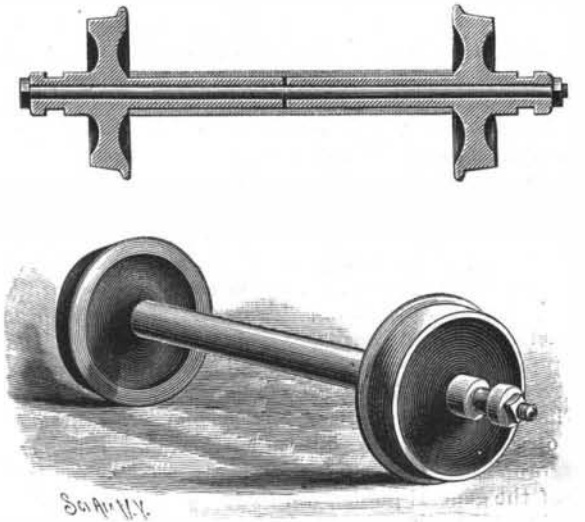
The first public pleasure boat to be driven by electrical power on the river Thames was recently launched. It is 65½ feet long, 10 feet beam, and designed to carry eighty passengers, with a mean draught of 22 inches, 12½ tons displacement, at six miles an hour, as regulated by the conservancy by-law. The electrical machinery and storage being placed below the deck fore and aft leaves a clear run the whole length of the boat for passengers. The electricity is stored in 200 Electrical Power Storage Company's accumulators, and is converted into power by two motors of 7½ horse power each, driving twin three-bladed propellers by Thornycroft & Co. The whole has been designed and built by Mr. W. Sargeant, Chiswick.

**The Population of India.**

The statistical abstract of India which has just been issued contains an estimate of the population of India in March, 1887, namely: British territory, 207,754,578; the native states, 60,382,466; giving a total population for all India of 268,137,044. Both in British territory and the native states the number of males is much larger than that of females. In 1881 in British territory there were 101.2 males to 97.4 females, and in the native states 88.7 males to 26.4 females, and in all India there were in that year just 6,013,419 more males than females.

**AN IMPROVED CAR WHEEL AND AXLE.**

An axle with wheels so attached that one wheel will run independent of the other, designed to obviate friction upon curves and prevent strain upon the axle. is illustrated herewith, and has been patented by Mr. John H. Smith, of No. 45 Cross Street, Paterson, N. J. The wheels have cast integral therewith an outer

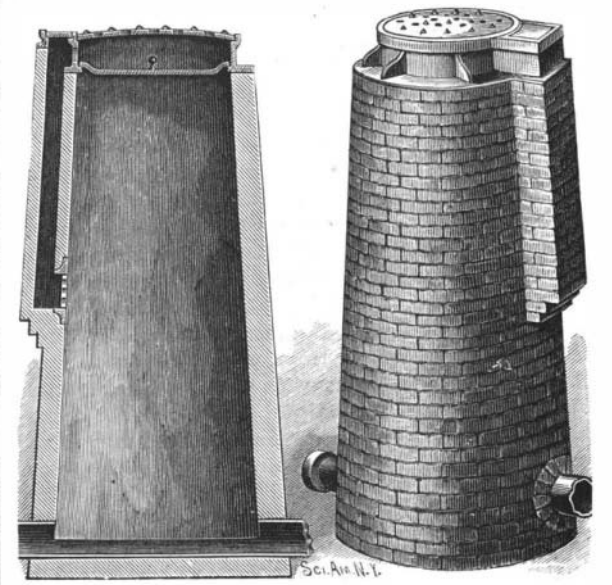


**SMITH'S CAR WHEEL AND AXLE.**

tubular hub, with an annular groove adapted to be journaled in any suitable form of hanger, while a sleeve is cast integral with the inner face of the wheel, of such length that when the opposing wheels are upon the track the contiguous ends of the sleeves will nearly abut, as shown in the sectional view. An outer sleeve, of a length equal to that of the usual length of the axle between the wheels, is made to cover the inner sleeves of the wheels, upon which the outer sleeve turns loosely, and a rod is passed through the hubs and sleeves of the wheels, one end of the rod having a cap or head, and its other end a nut or equivalent fastening device, or the rod may be threaded at both ends, and have the usual lock nuts.

**IMPROVED VENTILATING MAN HOLES FOR SEWERS.**

A construction of man holes for sewers designed to provide a free escape of the sewer gases, and, if desired, a means of purifying them before their escape, is illustrated herewith, and has been patented by Mr. Thomas W. Morgan, of Oakland, Cal. The vertical chimney or man hole, extending from the street surface down to the sewer, has its upper part finished off by a circular iron curb with a perforated cover, while a supplemental vertical flue is built at one side of the man hole, the lower end connecting therewith as shown in the sectional view, the opening being covered by a side lattice or grating. The cover for the man hole has an extension at one side, which forms a cover for the supplemental flue, and a hole or opening is made in the side of the cylindrical curb, which communicates with the upper end of the supplemental flue. Around the lower inner edge of the main curb is a projecting lip, upon which rest the edges of a metal pan or cover having a central eye bolt or handle, for lifting it out when the perforated cover is removed, the pan serving to prevent dirt from falling into the man hole. The supplemental flue or passage may be filled with charcoal or other disinfectant, whereby the gases arising from the sewer by this channel will be purified, the gases entering this flue returning into the cylindrical curb above the pan, and from thence escaping into the open air.



**MORGAN'S VENTILATING MAN HOLES FOR SEWERS.**