

Whitening Positives.

Bichloride of mercury and other things have been suggested and tried in the process of whitening a dark positive picture, but with no good and satisfactory result. We have found a very simple and pure method by which an ambrotype or ferretotype may be whitened in the shortest time and give excellent results. The first trial was with a much under-exposed picture, which was entirely too dark. After it had been fixed and dried, we ran a stream of water over it again, in order to soften the film; we next prepared a mixture from one part of the usual developer (consisting of protosulphate of iron and acetic acid) with half a part of the silver bath, which was entirely neutral. This mixture we flowed over the picture, and after the lapse of four seconds the picture became nicely white, the half-tones appeared white, while the blacks of the darkest shades remained perfectly uninjured. The solution was now thrown off, and as a number of gray, dirty looking specks appeared on the picture, the usual fixing solution was applied to it again, by which means the picture appeared faultless, the whites being intense and of a brilliant white.

Since that time we have made the same trials with a different developer and an acid silver solution, and obtained the same excellent results. We have carried this redeveloping process further, and in the course of one minute changed a good positive into an excellent negative, which printed very good. We have tried this method with pictures which were more than half under-exposed in the camera, and did not fail in a single instance.—*Practical Photographer.*

MR. THOMAS A. EDISON.

Many of our readers will recognize in the engraving the face of Mr. Thomas A. Edison, and others, who are not familiar with his appearance, may form a good idea of how the great inventor looks. Every one is acquainted with his telephone, phonograph, and other remarkable inventions, therefore we shall not notice them here.

Mr. Edison is above the medium height, and although he is only thirty-one years old, his iron gray hair and thoughtful eye show the effects of continued study. He is genial, liberal, and entirely unostentatious. His mind, day and night, is on his projects; and even while eating his thoughts dwell on his inventions. His table conversation consists of occasional ejaculations regarding some new point in whatever project he may have in hand. He is at home in his laboratory, which is very large and complete in all of its appointments. He has a number of assistants, who are competent and quick to carry out his wishes, and they are often engaged on several widely different subjects at the same time. The experimental apparatus which is completed during the day is often tried at night when all is quiet and no visitors are present.

Notwithstanding his great mental labor, he avers that his health is good, and that as his occupation is pleasurable it does not tire him.

His residence and laboratory at Menlo Park are beautifully situated upon the brow of a hill that overlooks a picturesque valley. The beautiful landscape and the mountain

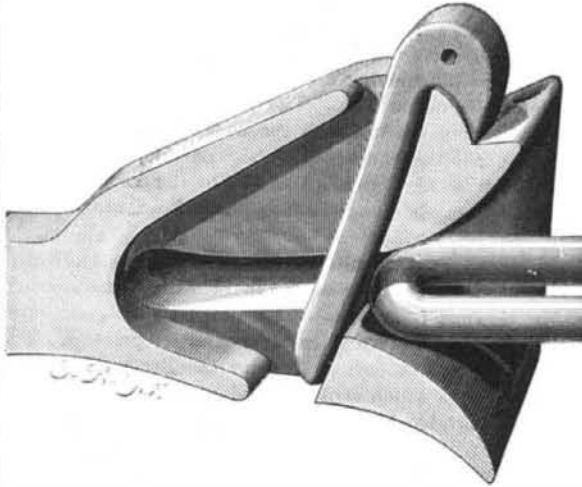
air—Nature's best restoratives for the brain-weary—he has without the seeking.

Mr. Edison may well pride himself as to his position in the world of science, standing, as he does, first among the inventors of the day; and having, by his own energy and persistence, secured an income that enables him to carry forward on a grand scale such experiments as his prolific mind may suggest.

We publish in another column a detailed account of Mr. Edison's researches in telephony.

PATTESON'S IMPROVED CAR COUPLING.

The annexed engraving represents a new and very simple form of automatic car coupling. It will be observed that there are no more parts in the device than in the common coupling now in use, and that the operation is positive and



PATTESON'S CAR COUPLING.

can hardly fail. The shape of the interior of the drawhead is evident from the illustration. The pin hooks over a projection on top and passes down through to a slot beneath. The entering link pushes the pin back, causing it to swing on the point of the hooked portion. The lower end of the pin is thus lifted as the link passes under it, and allowed to fall back into the link opening, thus effecting the coupling by the simple action of gravitation.

Practical railway men will at once see the great simplicity and utility of this coupler as a life-saving apparatus to brakemen. The drawhead will be from 15 to 20 pounds lighter than the old one, and much thicker and stronger in front. Cars can be run closer together, as no one goes between them to couple, and shortening the length of the train will cause a more compact and less jarring pull. When coupled, the link is not cramped, and can work in every direction. The pin fits plumb in the lower part of the drawhead, and is sufficiently inclined to make the pull steady, and against the upper and thicker part of the drawhead, and cannot bounce up or be jolted out of place. An asbestos rope is

put in the head of the pin and hooked to the top of a freight car, so that the brakeman can uncouple from the top of the car, or at the side of the track, without going between the cars, and can pass from car to car more easily, as the boxes will be nearer. The drawheads can be used nearly touching, by cutting the hole for the pin more to the front and correspondingly reducing the rear space and link; the front of the drawhead to be blaring and very strong, especially the upper half, which will withstand the main pull.

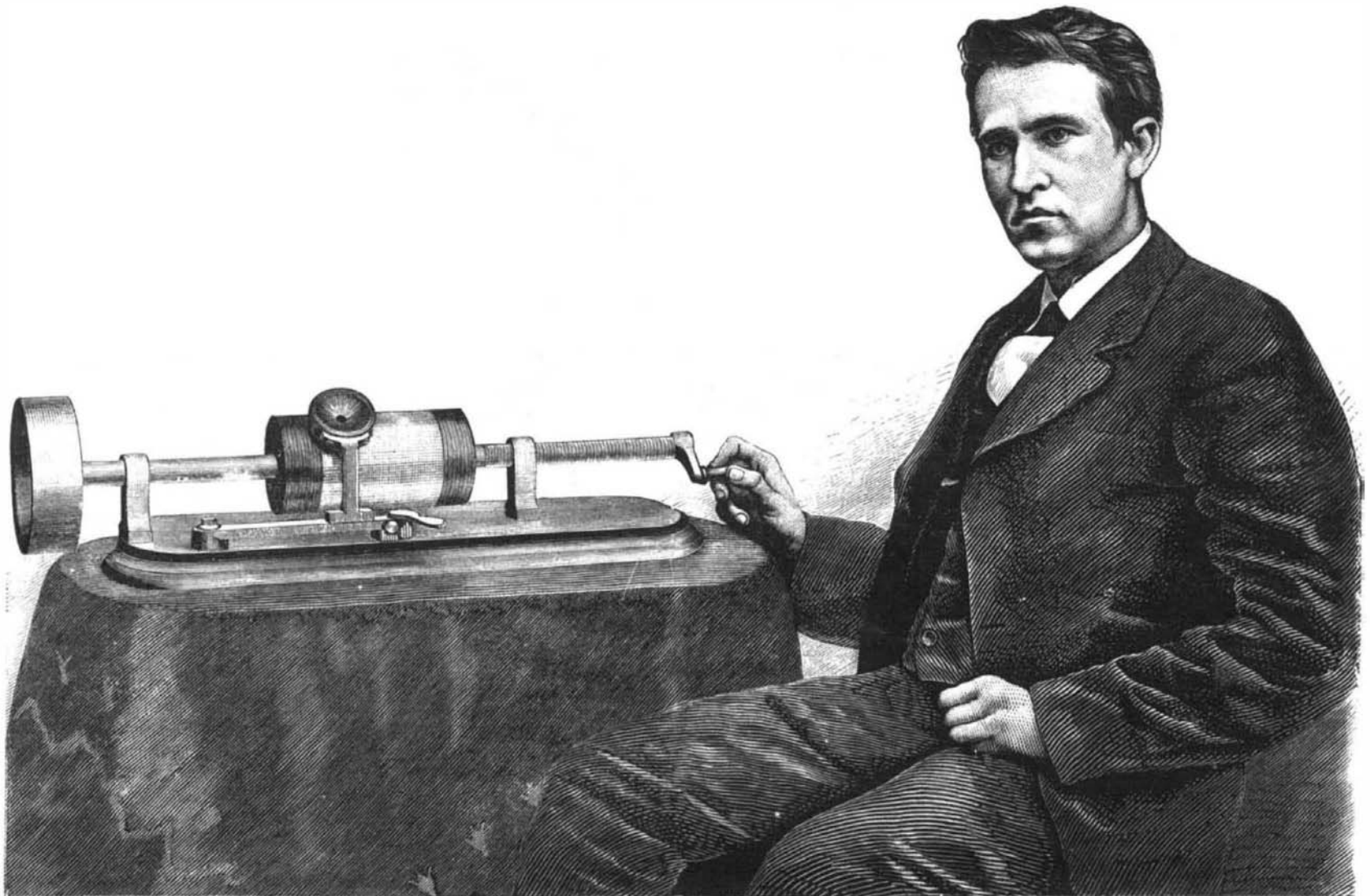
This simple automatic coupler has no springs, bolts, bars, or screws to rust, break, or get out of order, and is pronounced by many railway experts the most perfect yet invented. Patented February 26, 1878. For particulars touching its introduction, sale, etc., address E. M. Drane, Frankfort, Ky.

Project for Increasing the Water Power of Pennsylvania.

The head waters of the Pennsylvania streams are not very much higher nor are they far distant from the rapids at Niagara Falls, and the suggestion of increasing the water power of the State of Pennsylvania to an almost unlimited extent by using the power of the Niagara Falls to force a supply from the head of the rapids across to the head waters of that State is believed to be feasible. The water power which could thus be thrown into the head waters of the Ohio and Susquehanna to be used a hundred times over would be of incalculable value to that great industrial State, while its cost would be but a trifle compared with steam, more especially now that the dams and water wheels already exist. The same principle of supplying power to other streams, but by steam power, it is believed will be found feasible, especially where the stream is so rapid and the dams so numerous as to completely use the water when furnished. The water leaving the Connecticut at Holyoke, Mass., turns the water wheels for mills located upon six different terraces, so that the same water is used six times over in a distance of less than two miles.

A Japanese Built Ironclad.

A Japanese ironclad, the Li-ki, five guns, is now on her way to England, making a call at all the principal Asiatic and European ports *en route*. Unlike most of the vessels belonging to the Japanese navy, the Li-ki was built in Japan, under the superintendence and from the designs of M. Chiboudier, a French gentleman employed in the Imperial Arsenal of Yokoska. It will be remembered that the English Government lately made overtures for the purchase of three or four gunboats built in that country for Japan, but were unsuccessful in their bids for the vessels. The visit of a native-built ironclad to Portsmouth is therefore looked forward to with considerable interest. The Li-ki was built in 1874. Her length is 191 feet; breadth, 22 feet; draught forward, 11 feet; and aft, 13 feet. She has two decks, the upper one carrying five guns. The state cabin, ward-room, etc., are handsomely fitted, and the whole arrangements of the vessel are said to be very complete. Her officers are nearly all native Japanese.



THE PHONOGRAPH AND ITS INVENTOR, MR. THOMAS A. EDISON.