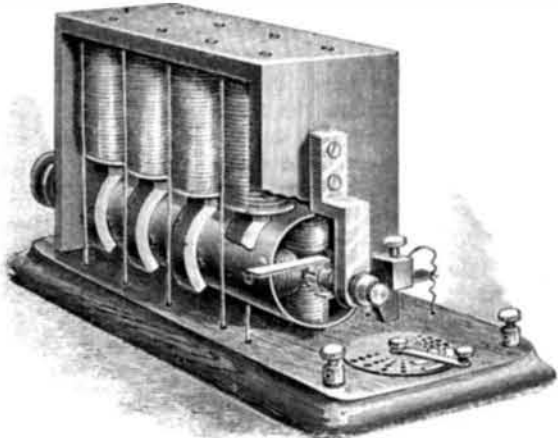


AN EASILY REGULATED ELECTRIC MOTOR.

The simple and effective motor shown in the illustration, in which the current may be readily regulated and easily reversed, has been patented by Mr. Harlon F. Ong, of Newberg, Oregon. It has a compound field magnet formed of a series of field magnets furnished with separate polar extensions, a compound armature formed of a series of armatures arranged upon a shaft and corresponding in position with the polar extensions of the field magnets, and a multiple switch for sending



ONG'S ELECTRIC MOTOR.

the current through one or more of the field magnet sections in either direction. A commutator is connected electrically with the armature sections formed of two rings, each divided at diametrically opposite points, the divisions of one-half arranged ninety degrees distant from those of the other part, and a pair of commutator brushes is held in contact with both of the commutator rings. By moving the switch arm a limited distance to the right, the current from the battery passes in one direction through one section of the field magnet; by moving the arm farther the current flows through two sections, in the same direction, and so on throughout the series. When the switch arm is moved to the left, the current is made to flow in the opposite direction, thereby reversing the direction of rotation of the armature, the current being sent in a similar manner, as desired, through one or more sections of the field magnet, whereby the power of the motor is regulated.

Mr. Edison Honored.

The London Society of Arts prize, consisting of a medal, the prize having been founded in memory of the Prince Consort, has been awarded to Thomas A. Edison. The medal has previously been awarded to Faraday, De Lesseps, and many of the other great scientists.

A COMFORTABLE READING CHAIR.

In using the chair shown in the illustration, the occupant is supposed to sit crosswise of the seat, as one would sit in a saddle, resting the elbows on the arm-pieces near the top of the back, the book then being supported in a convenient position for reading on an inclined table attached to the rear uprights. Such a chair in a library or study, or elsewhere, affording convenient opportunity for such changes of position from the usual posture as are often sought, cannot fail in many cases to contribute materially to one's comfort. The picture is very nearly a representation of a chair used for many years by the Duke of Wellington, at Walmer Castle, England, and now carefully preserved there. The duke died at this castle September 14, 1852.



A DUKE OF WELLINGTON" CHAIR.

The Use of Eyeglasses.

One of the first concomitants of age is acquired farsightedness or presbyopia. This necessitates wearing certain glasses for near work.

Whenever a man or woman about forty-five years of age finds himself or herself reading or threading a needle at arm's length, their action tells that the little muscle governing the accommodation is growing weak and needs assistance. By persisting in forcing this muscle to work, much injury is done to the eyes, but by having it corrected, many a frown would be saved to man and many a wrinkle to woman.

Not only is it important to get glasses, but of more importance still is it to see that you get the kind suitable for each eye. It is comparatively rare that you find two eyes exactly alike, and the aid of an ophthalmic surgeon, who is not only competent theoretically but practically, should be sought.

Men whose knowledge is acquired by long experience are often much more useful than those having a theoretical knowledge only. When the optician finds, however, that the vision is not the same in each eye, or where astigmatism exists, and patient complains of symptoms now recognized as eye symptoms, then his province ends and the ophthalmic surgeon's work begins.

At one time the druggist could exercise the prerogatives of the physician; is it of lesser import that the optician should assume the prerogatives of an ophthalmic surgeon? If the law now prevents the one from prescribing drugs, the other should also be prevented from prescribing glasses, outside of a certain range of years or certain physiological conditions.

As age increases, excessive reading, writing, or work upon very small objects must not be persisted in, especially if the eyes grow tired. It must be remembered that the elasticity of the eyeball is lost, and any persistent effort may produce hemorrhage in the retina, or such a strain as may lead to other serious troubles.

Old people should be careful not to read with a strong artificial light falling on a white glazed surface. And the *Industrial World* concludes: It would be better for such people if our monthly magazines were printed on paper of a neutral tint.

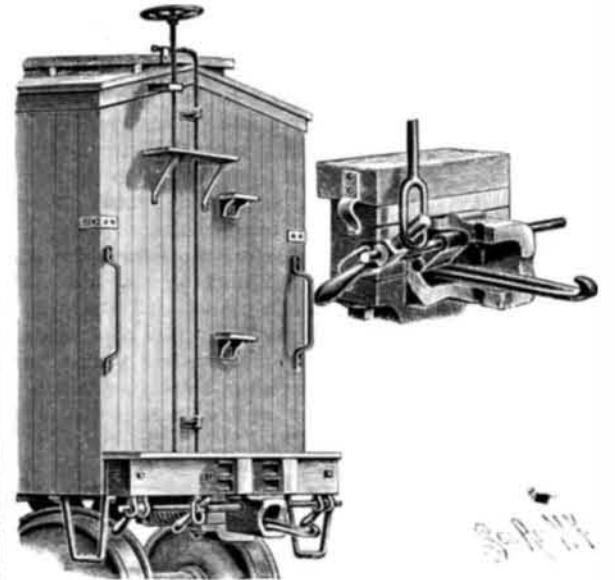
Not as Easy as It Seems.

You may not think it is much of a task to be foreman or superintendent of a factory or other manufacturing establishment, says the *American Machinist*, but try it and see, and you will find that it is not the easy job it may seem to the observer. Imagine yourself with from fifty to a hundred men, or even less, and plan out each day's work so as to have work ready for the men as fast as the last job is finished. You must estimate the time it will take this man to finish the job, so the next man can have it in time to start on with it as soon as his present work is completed. You must judge of the time a man should occupy on a job, and also the cost of material in the same, must know whether he is making it right or not, and whether at his present rate he will get it done in time for shipment according to contract. If not, he must have help on it. When you consider all these features, the responsibility of managing the whole place, and, if the judgment proves faulty, of being solely responsible for the loss, it is not an easy task after all.

AN IMPROVED CAR COUPLING.

The coupling shown in the illustration is designed to be simple and durable in construction, very effective in operation, and easily operated for coupling or uncoupling from either the side or the top of the car. The improvement has been patented by Mr. Reuben Quatermass, of Moline, Kansas. The coupling link is in the form of a flat bar, with its ends somewhat narrowed, and on each end a turned-up head forming a hook, the link also having a longitudinal slot adapted for engagement with an ordinary coupling pin when connecting with a car on which is used the pin and link coupling. Secured on a transverse shaft, journaled in bearings in the drawhead, is a plate whose rounded-off lower end is adapted to engage the hook of the coupling link, the edges of this plate having pins which move in segmental grooves at its side in the drawhead, as the plate is swung upward and downward, by means of handles at the side on the transverse shaft, or the rod connected with this shaft which leads to the top of the car. When the plate is held horizontally the link is disengaged, but when it is at an angle of about forty-five degrees it is free to engage the head of the link. The shaft on which the plate is held is journaled in elongated openings, so that when a pull is exerted on the plate by the link, the upper or outer end of the plate will abut against a bearing in the under side of the top of the drawhead, thus relieving the shaft of all strain. On each of the handles at the sides is a link adapted to engage a hook on the car, to lock the shaft and plate in position, and one of the handles is preferably adapted for engagement with a spring catch to facilitate the engagement or detachment of the link. When the plate is in its lowermost position, an entering link swings it backward until it passes the head of the link and drops into engagement

therewith, the handles adding weight to the plate to hold it in engagement with the link. In uncoupling, the cars are backed till the link slides rearward, when the handles are turned to swing the plate upward out of engagement with the link. In case of one of the cars leaving the track, the turning of the link to one side



QUATERMASS' CAR COUPLING.

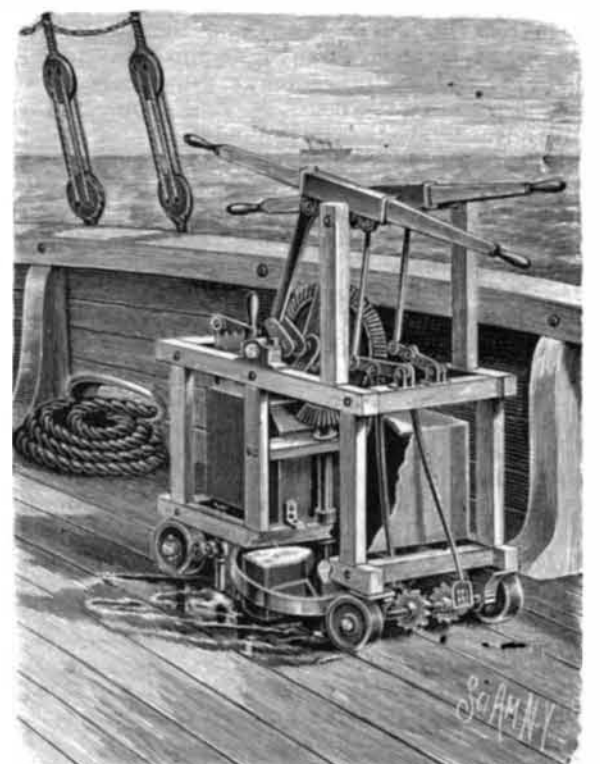
would effect its disengagement, so that the following car would not be derailed.

A MACHINE TO HOLYSTONE A VESSEL'S DECK.

The illustration represents a machine by means of which holystones may be moved in any direction across and in frictional contact with the surface of a vessel's deck, being rotated and resting freely thereon, while water and grinding material are at the same time supplied in their path. A yoke extends upwardly from one axle of the machine and is attached to a vertical shaft terminating in a crank arm, by means of which the machine may be steered, the crank arm being adapted to engage a rack. A transverse shaft, having two crank arms near the center of the frame, is connected by links with walking beams above, and the crank shaft has an attached bevel gear meshing with a bevel pinion on the upper end of a vertical shaft to which is attached a stone carrier, consisting of a skeleton frame containing a number of pockets. In the pockets are loosely fitted the stones, which feed downward by gravity as their under surfaces are worn away. By the rocking of the walking beams a rotary motion is given to the carrier containing the holystones, whereby the deck may be expeditiously cleaned.

Within the frame of the machine are held two tanks, one containing water or other liquid, and the other an abrading material, each tank feeding its contents in suitable proportions, according as the valves in their discharge pipes may be adjusted. The machine is moved forward and backward by means of dogs engaging ratchet wheels on the axle at one end, the upper ends of the dogs being adjustably and pivotally attached to levers fulcrumed on the frame, these levers being connected by links with the walking beams.

Further information relative to this improvement may be obtained by addressing the patentee, Capt. Samuel Lowberg, in care of Mr. E. C. Benedict, No. 29 Broad Street, New York City.



LOWBERG'S DECK-CLEANING MACHINE.