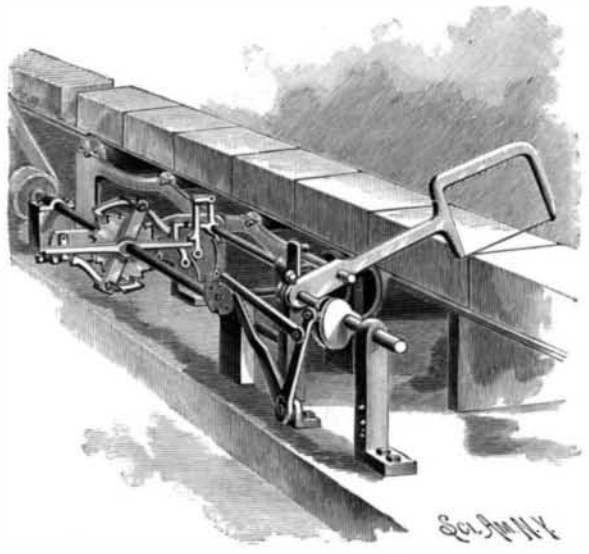
AN IMPROVED BRICK CUTTING MACHINE.

This brick cutter, recently patented by Messrs. Henry R. and Jacob Van Eyck, of Zeeland, Mich., is only three feet long and not two feet wide, and is said to be the smallest cutter on the market. It does not upset the stream of clay nor does it mar the faces of the brick as they are cut off at the die or nozzle of the brick machine, the parts being arranged to move the cutting lever as fast as the stream of clay travels, and thus cut a perfectly square brick. The traveling belt upon which the plastic clay issues moves over rollers



VAN EYCKS' BRICK CUTTING MACHINE.

journaled in a suitable supporting frame, as in other machines, and the cutting apparatus is operated from a driving pulley on a shaft at one side, to which is secured a ratchet wheel. This wheel is adapted to be engaged by dogs pivoted to opposite ends of an arm carried by an aligning shaft which operates the cutter, but the shaft has an intermittent motion, from the dogs being thrown into and out of engagement with the ratchet wheel through the operation of a bell crank lever and connections, whereby also the forward and backward movement of the knife carrier is effected. The dogs are tripped at every half revolution of the end rollers carrying the traveling belt, the driving shaft being actuated at such times to move the cutter up or down, and the movement of the roller effected by the travel of the clay sets into motion the devices which give the knife the cutting stroke as well as those that feed the knife along with the clay, although the mechanism itself is driven by independent power, so that the stream of material is not retarded and a nice clean cut is effected at every movement of the cutter. These machines are made by the Zeeland Machine Company, at Zeeland, Mich.

Influence of Different Rays of Light on Plants.

Herr E. Wollny finds that yellow light has the greatest power of producing organic substances in plants; next the red; while blue light has a remarkably prejudicial effect on the development of the reproductive organs. It is, therefore, the most refrangible (chemical) rays which take the least part in metabolism, the assimilation of carbon being carried on mainly by the less refrangible (illuminating) rays (Wollny's "Forschungen," 1894, p. 217). As the result of another series of experiments, M. Villon states that the vine produces a greater weight of grapes, which also contain a larger quantity of alcohol and of acid, when grown behind glass colored red violet by manganese, which absorbs the yellow and brown rays. Flowers are also favorably influenced by the same color, which is, moreover, advantageous to the growth of bacteria, yeast and silkworms.—Revue Scientifique.

THE work of excavating a channel of 20 feet depth through the waters of the Great Lakes between Chicago, Duluth and Buffalo, which was commenced in 1893, is now more than two-thirds completed. The work is divided into eight sections. The first four sections include the excavation needed in the Sault Ste. Marie River, through which there will be a channel 21 feet deep and 300 feet wide.

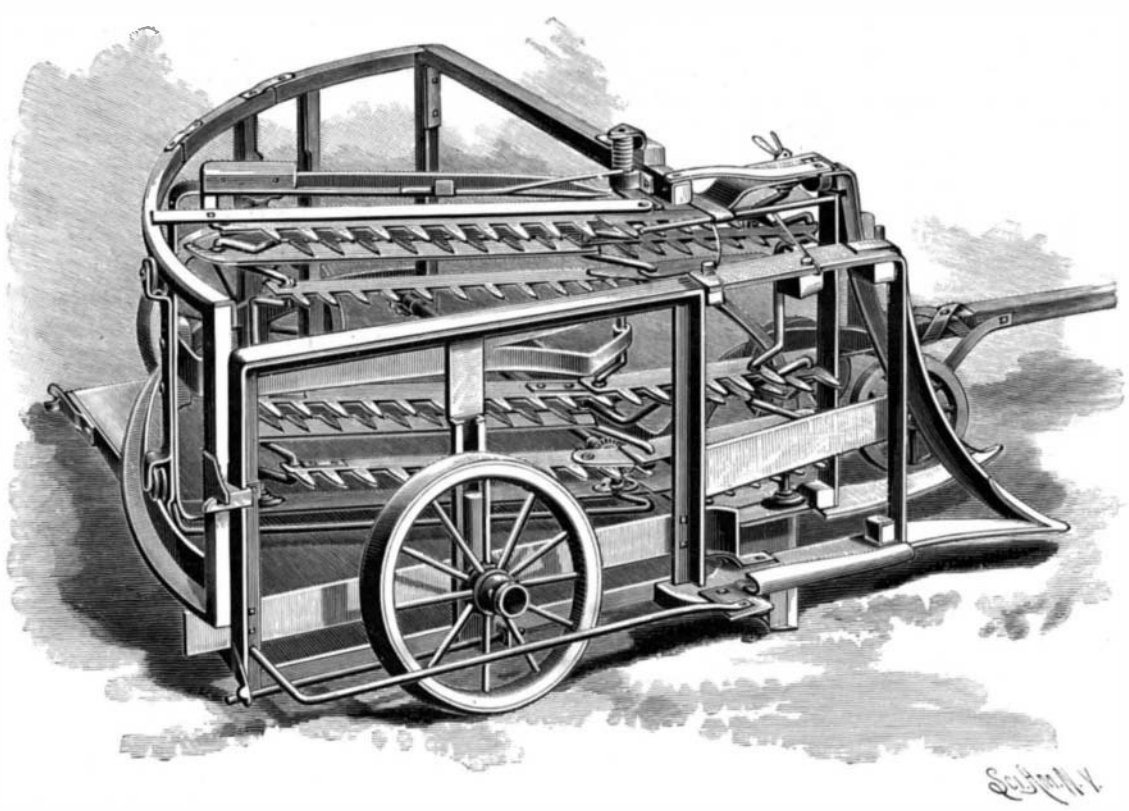
How to Clean Clothes.

The American Analyst tells how to do it, as follows: Take, for instance, a shiny old coat, vest or pair of trousers of broadcloth, cassimere or diagonal. The scourer makes a strong, warm soapsuds, and plunges the garment into it, souses it up and down, rubs the dirty places and, if necessary, puts it through a second time; then rinses it through several waters and hangs it up to dry on the line. When nearly dry he takes it in, rolls it up for an hour or two and then presses it. An old cotton cloth is laid on the outside of the coat and the iron passed over that until the wrinkles are out; but the iron is removed before the steam ceases to rise from the goods, else they would be shiny. Wrinkles that are obstinate are removed by laying a wet cloth over them and passing the iron over that. If any shiny places are seen, they are treated as the wrinkles are—the iron is lifted while the full cloud of steam rises and brings the nap with it. Cloths should always have a suds made specially for them, as in that which has been used for white cotton or woolen cloths lint will be left in the water and will cling to the cloth.

In this manner we have known the same coat and trousers to be renewed time and time again, and have all the look and feel of new garments. Good broadcloth and its fellow cloths will bear many washings, and look better every time because of them.

AN IMPROVED CORN HARVESTER.

This machine, which forms the subject of a patent recently issued to Mr. Albert E. S. Danner, of Newton, Kansas, cuts the stalks as they stand in the field and carries them back in upright position, where they are held upon a low platform, to be conveniently tied into shocks, and then left upon the ground. The knife is held diagonally, close to the ground, and is secured to a forward extension at the right hand side of the platform, where are located guide fingers which automatically accommodate themselves to any irregularity of the rows of corn, the stalks being received by a front series of feeding devices prior to their reaching the knife, so that the stalks do not drag upon the knife when they come in contact with it. A sprocket chain and gear connection with the left handwheel actuates a transverse shaft by which are operated two vertical shafts carrying each a series of upper and lower crank arms with which are connected rake feeds that carry the stalks backward in the machine. A gathering or shocker frame is adapted to travel over the table and receive the stalks from the sets of feed rakes, the frame being spring-controlled and moving toward the left along the curved railing of the platform as the stalks accumulate, until the platform has been completely filled, when a keeper on the frame engages a latch to hold the frame stationary. The shock is now ready to be bound, which is preferably effected by a rope or

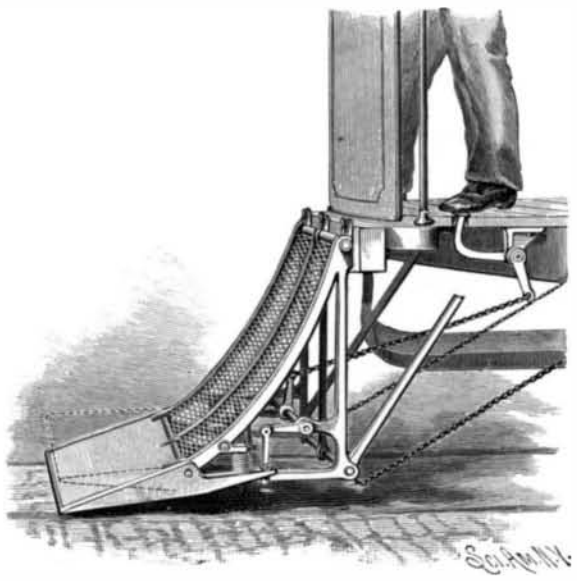


DANNER'S CORN HARVESTER.

cord having stakes or pegs at each end, to be driven into the ground at the back of the machine. The gate sections of the platform railing being opened, the machine is driven forward and the platform is drawn from under the shock, depositing the latter on the ground. The platform of the machine may be readily raised and lowered as desired, and the front of the machine is raised or lowered and held in position by the manipulation of a lever within easy reach of the driver. The entire operation of the machine is automatic, except the binding and discharging of the shocks.

AN IMPROVED FENDER FOR STREET CARS.

This is a fender of simple construction, readily transferred from one end of the car to the other, and having a shoe or take-up section which may be instantly brought down to the surface of the track, to insure the picking up of any object in the way. The improvement has been patented by Mr. William L. Fees, of Avonmore, Pa. It consists of a bracket frame, substantially triangular, with the forward members somewhat concave, this face of the frame being covered with wire netting. At the lower forward portion of the frame is pivoted the shoe or take-up section, which has rear extensions or lips connected by links with arms on a rock shaft, there being also on this shaft a crank arm connected by a chain with an elbow type of foot lever fulcrumed beneath the car platform. Springs hold the shoe normally in a horizontal position, or at a sufficient distance above the track to allow for any unevenness of the roadbed, as indicated by the dotted lines, but the motorman or gripman by pressing upon the foot lever brings the front of the shoe down to the surface of the track, against the tension of the springs, as shown in full lines. The end brackets of the main frame have integral braces, the ends of which are adapted to enter sockets in the under side of the car body, and brace chains or rods may also be employed to connect the rear lower portions of the brackets with the pedestals or with the car body. Along the upper edge of the frame are eyes by means of which the fender may be attached to and hung upon studs or hooks along the upper edge of the dashboard. By attaching a concave plate to the top of the shoe the improvement may be utilized as a snow plow.



FEES' CAR FENDER.

Salted Iron.

A new flux for cast iron has been discovered by Mr. Sentinelli. The compound in question consists of an alloy of sodium and iron formed by bringing iron and common salt into contact at a high temperature. The ferro-sodium so produced contains about 85 per cent of the iron, holding metal sodium in solution, if the term may be used. This latter has a powerful affinity for sulphur and phosphorus, and combining with these carries them out into the slag. The flux may be added either to the cupola or may be placed at the bottom of the casting ladle. The former plan is stated to be preferable. When used in either of these ways the metal in the ladle shows the characteristic yellow flame of sodium on its surface, and its temperature appears to be increased. Indeed, when placed at the bottom of the ladle, the reaction takes place with considerable violence. It is claimed that, by the use of this alloy, the amount of sulphur can be reduced to about one-tenth of its original value, and the phosphorus is also reduced, the cost of the purification being about ½d. per hundredweight.

IN France the population averages about 187 to the square mile. In this country the average is 21 to the square mile.