

**A SAFETY FENDER FOR STREET CARS.**

The many run over accidents which have happened since the general introduction of electric and cable cars, to take the place of horse cars, have caused not a few inventors to turn their attention to the devising of some practical means of prevention, in the way of efficient and not too expensive or cumbersome life guards or safety fenders, but as yet nothing has been brought forward which has met with sufficient favor to be generally adopted. Our illustration represents one of these devices, of which a number of successful trials have been made during the past six months. The man picked up by the fender, as shown in the picture, was said to have been struck by the guard when the car was running at the rate of twelve miles an hour, this trial having been made in Brooklyn in October last. This fender has across its front an open-end rubber tube, five inches in diameter, supported at a height

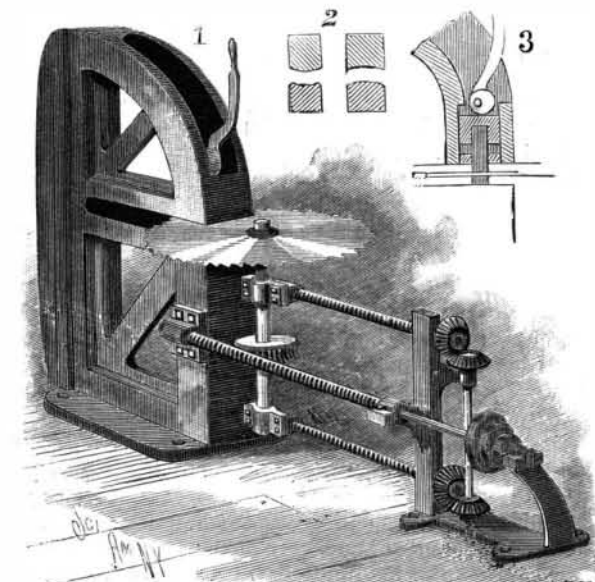


THE ROBINS LIFE GUARD FOR STREET CARS.

of about six inches above the roadway by an elastic steel frame connected by short springs with a hinged fender frame, made of one inch gas pipe, the latter frame being adapted to be folded up against the dashboard to occupy only about ten inches of space, when the car is reversed, or for storage purposes. Wire netting covers the bottom of the frame and extends up in front of the car platform, the netting being attached to the frame by springs, and across the bottom netting, about eight inches from the front end of the fender, is a second rubber guard, ten inches high, this guard having a spring-controlled rearward movement, and being designed to prevent a person from being thrown out of the fender after having been caught up. As the front cross bar of the fender frame proper is eight inches back from the front face of the fender, the blow received by one standing on the track is a cushioned one, and not likely to cause any undue shock or injury. This fender is now being manufactured by the Robins Life Guard & Manufacturing Company, Manhattan Building, Philadelphia, Pa.

**A MACHINE FOR STRAIGHTENING SAWS.**

This is a strong, inexpensive, and easily operated machine adapted to roll the surface of a saw to make it perfectly level, striking every part of the saw, and adapted also to use compressing blocks for leveling high humps or bunches. The machine has been patented by Mr. Isaac Toomer, of Westlake, La. Fig. 1 shows the machine at work. Fig. 3 is a sectional view illustrating the mechanism forcing the rollers down on the saw, and Fig. 2 shows forms of blocks which may be substituted for the rollers. In the transverse slot in



TOOMER'S MACHINE FOR STRAIGHTENING SAWS.

the front of the frame, through which is passed the saw to be operated upon, are upper and lower bearing blocks in which are journaled the leveling rollers, and the upper block is vertically movable, being forced down to bring the roller with great pressure upon the saw by means of an eccentric having an upwardly extending hand lever. A band saw to be leveled is passed lengthwise between the rollers, but a circular saw is held to revolve by being secured to a head on the upper end of a vertical mandrel turning in suitable boxes which slide on horizontal supports, carrying the mandrel toward and away from the frame, so that every portion of the saw may be brought between the rollers. The saw is revolved as it is operated upon by the revolution of a horizontal screw shaft engaging a worm wheel on the mandrel, the shaft having at its outer end a cone pulley or equivalent driving gear, whereby the speed may be changed as desired. The forward and backward movement of the mandrel is effected by upper and lower horizontal screw shafts connected by beveled pinions with a vertical shaft, on whose lower end, as slightly indicated by dotted lines, is a friction cone, adapted to engage with either one of two cones on a lower horizontal movable shaft, not shown. Any ordinary shifting gear may be employed, and the direction of the screw shafts and of the saw mandrel is thus controlled. The blocks shown in Fig. 2 are substituted for the other bearing blocks and rollers when unusually large inequalities or humps on either side of the saw are to be leveled.

**Education the Best Philanthropy.**

That there are at least three New York ladies who believe in the truth of the above statement—at least so far as it concerns the educational influence of the SCIENTIFIC AMERICAN—we have recently had most flattering evidence. At the beginning of 1893, one of these ladies subscribed for enough copies of the SCIENTIFIC AMERICAN to supply one to each police station in the city, and the paper was thus sent throughout the year. The gift thus made proved so acceptable, and was believed to be productive of so much good, that the subscription is this year renewed, another lady now joining with the originator of the idea, while a third comes forward with a similar subscription for the SCIENTIFIC AMERICAN to be sent for the year to all the fire engine houses of the city. Mrs. D. W. Bishop and Mrs. Stickney are the ladies to whom the police are indebted and Mrs. Joseph M. White is the firemen's friend. The list of police stations to which the paper is thus sent numbers 43 and the fire engine houses 17.

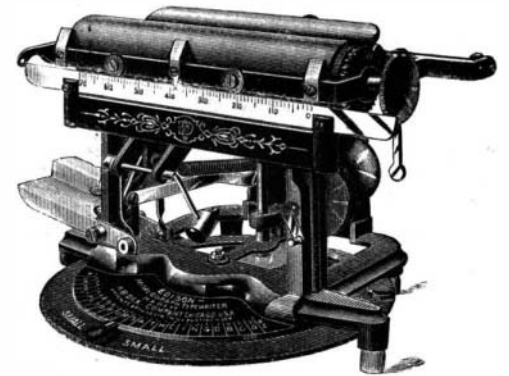
**La Grippe.**

A physician who has just passed through an attack of this distressing disease thus writes to a friend, who communicates it to the New York Medical Journal: "Did you ever have this infernal disease that they call the grippe? If not, don't. I have been through it for the last six weeks and am ready to give my friends the benefit of my experience. It is certainly the most diabolical malady that ever got out of Pandora's box. If the old girl has anything worse in reserve, I trust she will keep the lid of her Saratoga safely locked, and then kindly sit on it. Sneeze, freeze to death, burn up, have your energy sapped, let all the clouds of heaven lower over your head, get on familiar terms with all the blue devils that ever escaped by volcanic exit from equatorial eternity—do all this and keep it up for six weeks, and then you can intelligently listen to a lecture on *la grippe*. Cerebration becomes altogether of the too conscious sort for literary work."

**A NEW TYPEWRITER.**

The Edison Mimeograph typewriter is designed to fill two demands: First, for use in connection with the Edison Mimeograph, for which it cuts a perfect stencil, and, secondly, for general use where a high rate of speed is not required. The machine has been thoroughly tested, and will not, therefore, have to pass through the "experimental stage." It is a typewriter of the familiar type-bar variety, inking direct from a ribbon, but of a mechanical principle different from anything at present existing. The types, which are made of steel, are set in the ends of independent steel bars about an inch long, standing perpendicularly in a circular frame, and having a perpendicular throw of about an eighth of an inch; a revolving disk or frame, having three fixed pointers for the selection of capital letters, small letters or figures and punctuations, moves over the keyboard, carrying in its passage the circular frame holding the type until the letter selected by the pointer on the disk is at the printing point; a universal printing key on the left is lightly touched and the letter selected is thrown against the paper, making an impression. Its extreme simplicity, together with the durability of the machine itself, and the ease with which it may be learned and operated even by one unfamiliar with typewriting machines, are its distinguishing characteristics. A speed of once and a half to twice that of handwriting is easily possible. The machine will be manufactured in three styles,

No. 1 having the same letters, figures and characters common in the standard machines, No. 2 having the same type as No. 1, with an additional number and a wider carriage for the admission of paper, and No. 3



Machine in position for writing.



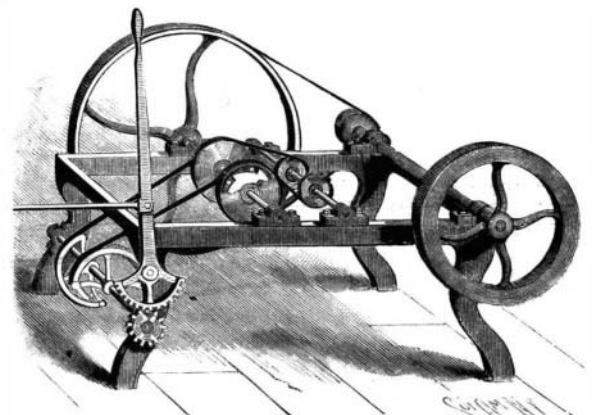
With carriage raised and scale cut away, showing ribbon movement.

**THE EDISON MIMEOGRAPH TYPEWRITER.**

being equipped with facilities for writing English, French and German. The machine is made by the A. B. Dick Company, Chicago.

**AN IMPROVED MOTOR.**

This simple and inexpensive construction, to be actuated in different ways by hand, foot, or other power, is designed to transmit the power applied in the most economical manner, being a perfect equalizer, having no dead centers. The improvement has been patented by Mr. C. W. Pearce, of Diller, Neb. In the illustration the device is shown arranged with semicircular rocking treadles loose upon the shaft, and having foot lugs upon their ends for the alternate motions of the feet in driving the mechanism. To render the segmental hand lever available, it is necessary to change the position of the further treadle and secure both treadles firmly to the shaft, when it may be operated by hand, or power may be applied through the connecting rod shown. The segmental rocking treadles are connected by short belts with clutch pulleys mounted to rotate loosely on a driving shaft, and on the rims of the clutch pulleys are secured the ends of belts connected with right and left rock wheels on a shaft journaled in the frame, the right rock wheel being connected with the right clutch and the left rocker, or the inverted one, being connected with the left clutch. As the rock wheels are both keyed to the rock shaft, when the right one moves forward the inverted one moves backward. The clutch employed is a sort of ball or roller device, the rollers clutching the outer rim of the clutch wheels as they are drawn forward, by entering a wedge-shaped opening between the rim and a center piece keyed to the shaft, and when reversing rolling back against the shoulder in the center piece. It is believed that this motor would be an excellent one for electrical purposes, the power being so evenly divided that a light might be produced without a flicker.



PEARCE'S MOTOR.