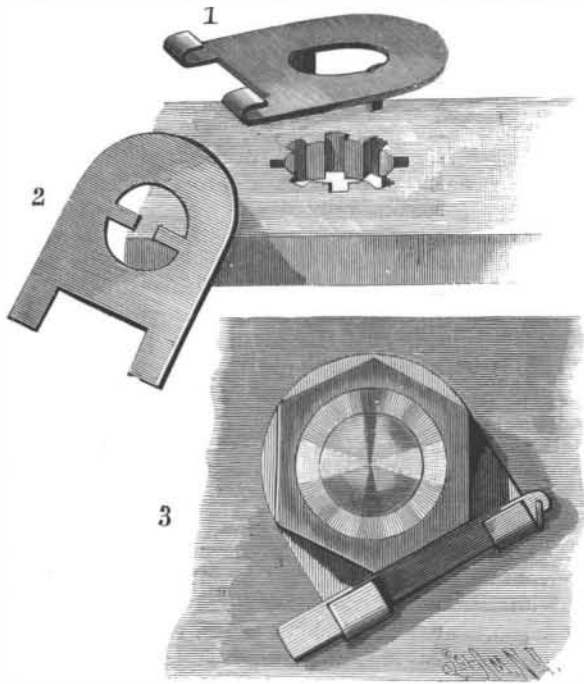


**AN IMPROVED NUT LOCK.**

The accompanying illustration represents a simple, very efficient, and inexpensive form of nut lock, designed, when properly set, to prevent any turning or loosening of the nut, a key holding the lock from any possibility of loosening. This improvement has been patented by Mr. William Schauweker, of No. 201 Colwell Street, Pittsburg, Pa. Fig. 1 shows the lock plate and the seat for the lock, Fig. 2 representing the

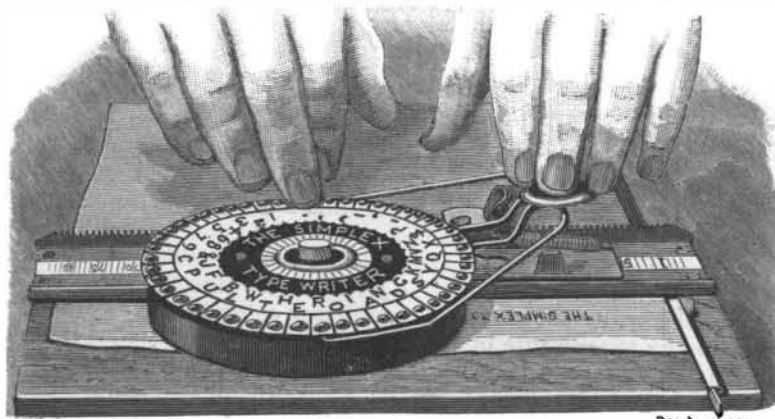
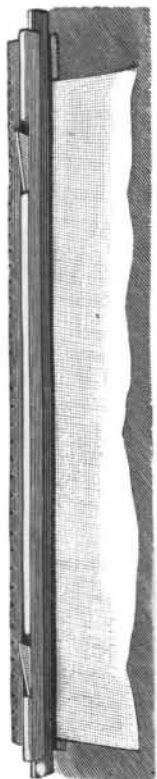


SCHAUWEKER'S NUT LOCK.

blank of the lock plate as it is punched out and before being bent into form, while Fig. 3 shows the application of the improvement, the key being in place in the lock. The grooves at the sides of the bolt hole in the lock seat are adapted to receive the feathers bent downward from the sides of the central opening of the lock plate, and the two ears at the ends of the lock plate, when bent upward as shown in Fig. 1, form a groove in which slides a wedge-shaped key, the key being kept from coming out by a wire pin or loop. In applying the lock the nut is to be screwed down until, when the key is placed in position, it will fit snugly against a flat side of the nut, the plate being placed so that its feathers will engage the proper notches in the lock seat to enable this to be effected.

**A SIMPLE AND EFFICIENT TYPEWRITER.**

The small, compact, and very inexpensive typewriting machine shown in the illustration, which with its box weighs only one pound, has been patented by Mr. Analdo M. English. The carriage way is attached to a light wood base, and is of sheet metal, having at one edge a vertical flange with rack teeth for engaging the feed devices, and grooves forming a guide for the carriage, on which all the operative parts of the printing and carriage-feeding devices are mounted. A printing disk and index wheel are pivoted for horizontal movement in unison in either direction in a casing secured to the carriage, and the index wheel has radial spring fingers on which are characters corresponding to those on the under side of the printing disk, each of these fingers also having a projection to be pressed upon by the finger of the operator in rotating the disk. As the index wheel is thus rotated the desired character is brought into alignment with and its finger is depressed into a notch in the casing on the side next the operator, a corresponding character on the rubber printing disk being at the same time brought beneath the type-impressing devices, the letter being thus locked when the impression is made. The impression frame is of wire, and from it extends an operating key, a spacing frame being also operated on by the key in its downward movement, whereby



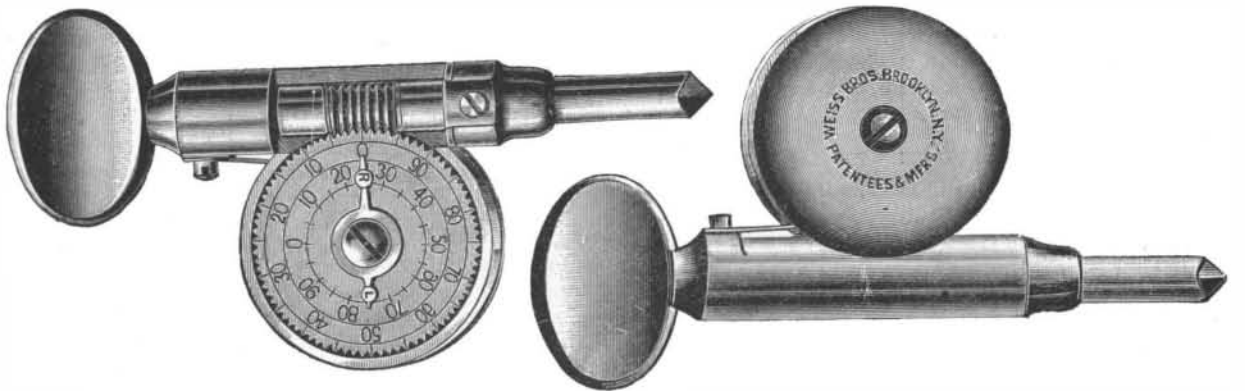
ENGLISH'S "SIMPLEX" TYPEWRITER.

the carriage is moved along the space of a letter each time the key is depressed, the depression of the wire spacing frame, under the key, moving the carriage for spacing when the key is not depressed. In order to return the carriage when it reaches the end of a line, it is only necessary to press upon a small finger piece controlling a spring detent and pawl, when the carriage and its appurtenances may be moved backward to begin another line. The length of line, as the machine is at present made, is eight inches. The paper is shifted by hand for line spacing, being held therefor in a paper holder in the form of an elongated clip, as shown in a separate view. The clip has a vertical member sliding in a guide groove in the base. The inking is effected in a simple manner by inking pads at each side of an opening in the casing near the impression frame. The machine is readily and rapidly operated when held in any position, and the letters printed appear in plain view as fast as they are made. It will go into a box 5 inches wide, 9 inches long, and 1½ inches deep, so that it may be carried in the pocket. It is a typewriter evidently intended for use in the various professions and for private correspondence.

Further information relative to this improvement may be obtained of the Simplex Typewriter Co., No. 32 Great Jones Street, New York City.

**AN IMPROVED SPEED INDICATOR.**

The neat and well finished device, shown full size in back and front views in the illustration, has some decided advantages which will at once commend it to all who have occasion to test the speed of running machines. It does not matter whether the shaft is turning to the right or to the left, the indicator is always in proper position to be applied, and requires no turning to zero. The distinctive merit of this device consists in its alarm bell attachment, the bell ringing at every hundred revolutions of the spindle, so that it is only necessary to place the indicator in position and count the strokes upon the bell as the eye follows the hands upon the watch dial. The friction caused by



THE WEISS DOUBLE SPEED ALARM INDICATOR.

the pressure against the shaft is reduced to a minimum by the use of a hardened stub steel socket in which the hardened spindle rests and turns. No especial care need be taken to hold the indicator exactly true. When the speed is wanted of a shaft running in a dark corner, or in a position not easily accessible, the many advantages of this convenient device will be readily understood. It is nickel plated, and may be readily carried in the vest pocket. It has been patented and is manufactured by Messrs. Weiss Bros., machinists, Nos. 855 and 857 DeKalb Avenue, Brooklyn, N. Y.

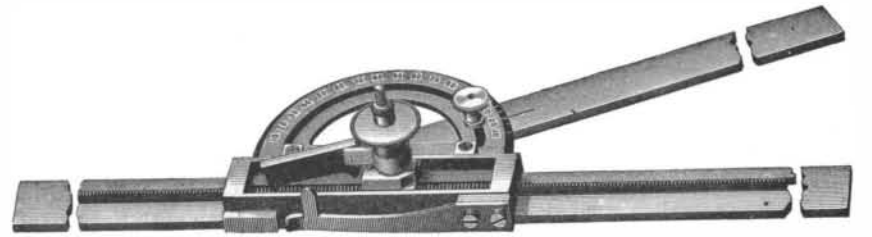
**Croton Trees in Tea Plantations.**

Some time ago a writer in the *Times of Ceylon* called attention to the danger in planting croton oil trees among tea bushes, as was then done on many places in the Matale district, since it was feared that, while gathering the tea leaves, some croton leaves might accidentally fall into the baskets and be manufactured into tea. Natives have a dread of the croton tree, as its poisonous properties are so well known to them that they fear even to pass under its shadow. Even native medical practitioners, in prescribing the oil obtained from the seed as a purgative, give only one drop as a dose for an adult. This is

rubbed on a betel leaf, chewed, and swallowed. But the tea planters of Matale took no heed of this warning, till at last people in England began to make inquiries regarding the laxative quality of certain brands of tea sent from Ceylon, by the use of which several persons had been taken ill. Shortly after this almost all the croton trees on the tea estates disappeared. Planters who did not go in for tea and allowed their crotons to remain are now making some profit, as of late there has been a demand for the seed.

**NEW MATHEMATICAL INSTRUMENT.**

The engraving illustrates a new instrument for the use of engineers and architects, to be used as a section liner and scale divider. The base of the instrument consists of a bar having a longitudinal rack with twenty-four teeth to the inch. To the bar is nicely



BOTH'S SECTION LINER AND SCALE DIVIDER.

fitted a carriage provided with a central post, the upper end of which is threaded and provided with an adjusting nut. On the post below the nut is a collar which is pressed upwardly against the nut by a spiral spring. The collar carries a steel pawl which engages the rack, so that when the collar is pushed down, the carriage is forced to advance along the rack bar from one to six teeth at a time, according to the adjustment of the take-up. To the carriage is attached a semi-circular protractor graduated to degrees. A ruler arm is pivoted to the protractor and is adjustable so that it may be placed at any desired angle.

The use of the instrument as a section liner is obvious, the step-by-step motion being adjusted so as to move the ruler through the desired space after each line has been made. When the ruler arm is set at right angles to the rack bar, it will move with each pressure of the knob a distance equal to the number

of teeth for which the take-up has been set, thus permitting of drawing lines ¼, ⅓, ⅕, ⅙, ⅛, ¼ of an inch apart. When the arm is adjusted at any other angle, the space between the lines will be diminished as the angle becomes more acute. By taking advantage of this fact, lines may be spaced in any desired ratio to the spaces of the rack bar. This ratio is the natural sine of the angle formed by the ruler and the rack bar. For example, if it be required to draw a scale of 12 to the inch, then we have 12/24 = 0.5, which is the sine of 30°, or the angle to which the ruler arm must be set.

By means of this instrument any desired scale may be quickly constructed and accurately spaced. It is manufactured and sold by the Kenffel & Esser Co., 127 Fulton Street, N. Y.

**Edison's New Jersey Village.**

The village of Ogden, N. J., now known as Edison, has been built up within the last two years. The site is an old iron mine, known as the Ogden mine. It was abandoned many years ago, and until two years ago the vicinity was entirely deserted, and had grown up with shrub oaks and bushes. When Mr. Edison invented the magnetic ore separator, he organized the New Jersey and Pennsylvania Concentration Company, and a plant was established at Ogden, the name of which was then changed to Edison. The ore as taken from the mine is run through enormous crushing machines, and then passed through the Edison separator, where powerful magnets attract all the metal, which is afterward run into pigs.

**New Remedy for Cabbage Insects.**

The cabbage plants are sprinkled with ordinary corn meal while they are wet with dew or immediately after a rain, so the meal will cling to the leaves at all points.