A SAFETY SEAL FOR CHECKS, BONDS, ETC.

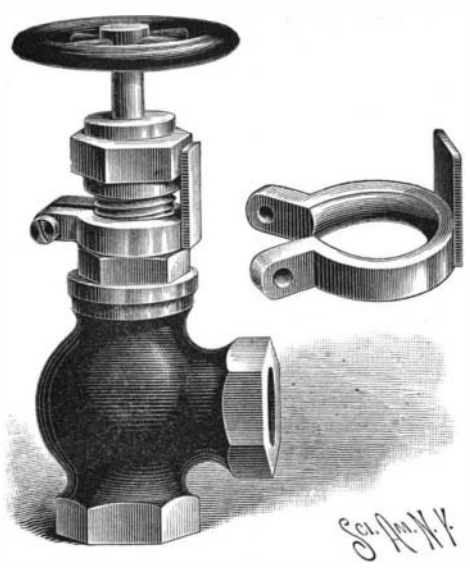
A specially devised seal, for application to the face of checks, bonds, notes, and other documents, to prevent altering or changing the figures showing the amounts for which the papers stand, is illustrated herewith, and has been patented by Miss Anna M. Woodhull, of Freehold, N. J. It is made of any proper kind of paper for such purposes, and preferably cut out by dies to such shape as shown in Fig. 2, the seals having serrated edges and being delivered from the die in sheets, the several seals of the sheets being united by narrow webs. The dies also cut out the central portion of each

WOODHULL'S SAFETY SEAL FOR CHECKS.

seal to leave a central aperture and a small auxiliary aperture at the side or top. The under faces of the seals are coated with any proper gum, and to each seal there is attached a semi-transparent flap, as shown in Fig. 3, such flap covering the apertures, but being disconnected from the main portion of the seal. When the number to be protected is written upon the check or other instrument, the seal is applied so that the number will be discernible through the semi-transparent flap, as shown in Fig. 1, and the check and the flap of the seal may be pierced through the side aperture of the seal, by a penknife or other convenient means, after the seal has been applied, so that any removal of the seal would direct the attention of the payee to the fact that the amount called for might have been changed or altered.

AN IMPROVED NUT LOCK FOR VALVES.

A device which is adjustable and attachable on a valve casing, and that will securely maintain a packing nut against unscrewing under the turning of the valve stem, is illustrated herewith, and has been patented by Mr. William H. Van Wart, of Stonington, Conn. The tubular neck of a valve casing usually receives upon its exteriorly screw-threaded end an apertured packing nut or gland, between the inner side of which and the end of the neck of the valve casing a suitable packing is employed to make a tight joint. Around a portion of the valve neck, or some other part of the valve, is placed a strap, yoke, or ring, such as shown in the small figure, the ends of which have lugs or ear pieces, through which a thumb or set screw is passed, to draw the ring



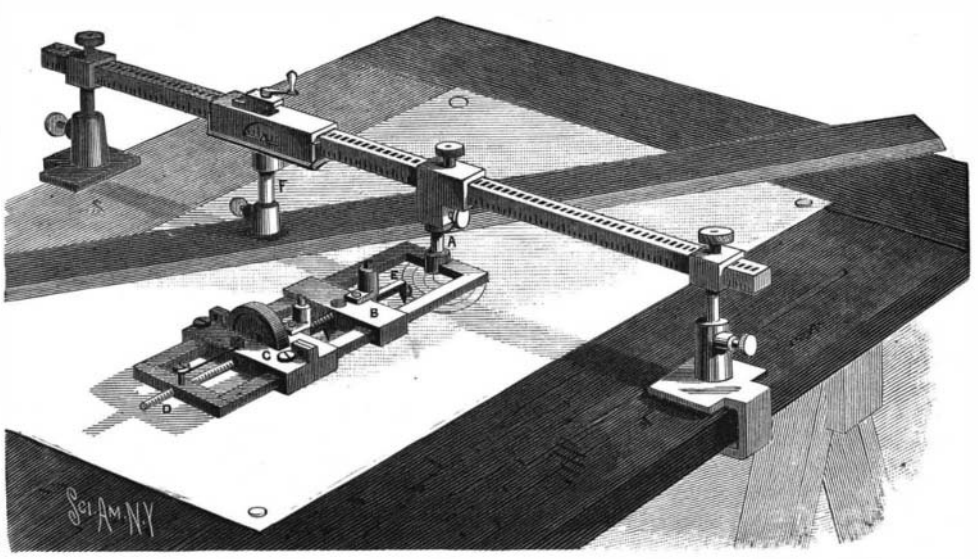
VAN WART'S NUT LOCK FOR VALVES.

to a more or less contracted circumference, and thus firmly bind it against rotation, the strap also having a rigid angular or outward extension adapted to engage one of the flat faces of the rim of the packing nut, preventing the unscrewing of the latter. The patent also provides a modified construction for valves of large size, in which the strap is made in two members hinged together, whereby a certain and easy adjustment and attachment may be secured on the valve casing.

AN IMPROVED DRAWING INSTRUMENT.

An improved instrument especially adapted for drawing section lines, and having an attachment by which ellipses, spirals, and other geometrical figures may be readily produced, is illustrated herewith, and has been patented by Mr. B. F. Hardaway, of Fort D. A. Russell, Wyoming Territory. The clamping posts of the instrument are secured by a set screw, or other suitable device, to the edges of a drawing board, and in each post is adjustably held a vertically sliding rod, these rods supporting above the drawing board a bar having a graduating index on one of its faces. On this bar slides a sleeve, on which is formed a downwardly extending rod, F, to which is adjustably secured a ruler, the sleeve having a pointer in an opening through which the graduation on the bar can be seen, while on top of the sleeve is mounted to rotate a vertical shaft, having on its outer end a crank arm, and on its inner end a bevel gear wheel, the latter meshing into a bevel gear wheel fastened on a shaft revolving horizontally, and formed with a worm meshing into a rack secured to the top of the bar held above the drawing board. The ruler is adjusted at the desired angle on the paper by means of the set screw, and, after the drawing of a line, is moved along any desired distance for the next line, by means of the crank arm extending from the top of the sliding sleeve, such distance being readily read on the graduation scale of the bar, while a device for taking up lost motion insures the holding of the sliding sleeve exactly at the desired point. After the second line is drawn, the operator again turns the crank arm the same distance as before, for making the lines all equidistant, or the distance is varied by turning the crank arm more or less.

The spiragraph attachment is connected with the bar supported above the drawing board by a sliding sleeve, a set screw screwing in the sleeve against the top of the bar, while in the sleeve is held to slide vertically a rod, A, in the lower end of which is held to turn between collars a rectangular frame, having sliding carriages, B C, the former being secured at its middle to one end of a screw rod, D, which passes loosely through the middle of carriage, C, and through the end bar of the frame, to which it can be secured by a screw. The carriage, C, is adapted to be secured to the side bars of the frame at any desired place by set screws, and on each of the carriages is held a drawing pen, as shown at E, so mounted as to be readily held in or out of contact with the paper on the drawing board whenever desired. In the middle of the carriage, C, is mounted a wheel with screw-threaded hub, the threads of which engage those on the screw rod, D, the wheel resting firmly on the paper on the drawing board, and an elastic band, secured by one end to the carriage, C, and by its other end to the end bar of the frame, tends to draw the carriage outward. To draw a parallel spiral, with uniform distances between its coils, the operator places the carriage, B, with its pen directly under the axial line of the rod, A, fastening the other carriage to the frame, with its pen out of contact, and then turns the frame on its fulcrum on the rod, A, whereby the rotation of the wheel in the carriage, C, imparts an outward sliding motion to the screw rod, D, moving the carriage, B, outward, with its pen drawing a spiral, as the frame is pushed around on its fulcrum. To draw a spiral which continually diverges, the carriage, B, is removed from the frame, the carriage, C, placed with its pen under the axial line of the rod, A, and the screw rod, D, secured at its outer end by the set screw to the end bar of the frame, when, by pushing the frame around its fulcrum, an outward sliding motion is imparted to the carriage, C, by the engagement of the screw-threaded axle of its wheel with the screw rod, which motion becomes more rapid as the carriage moves further outward, the wheel making more revolutions in each passage around as its distance from the axial point increases.



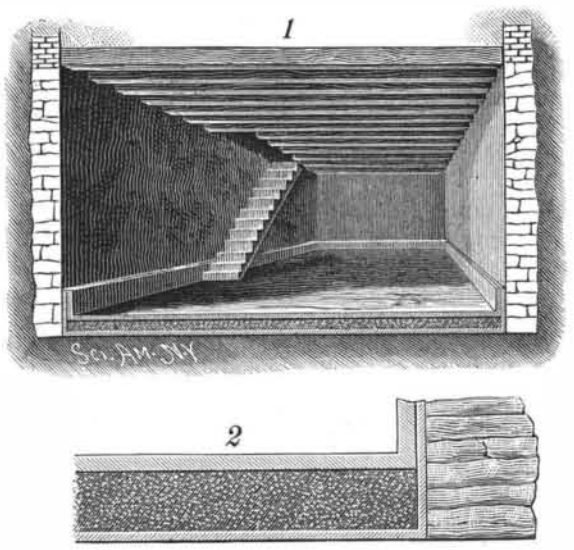
HARDAWAY'S PARALLEL RULER WITH SPIRAGRAPH ATTACHMENT.

Central Pacific.

The Central Pacific has ordered one hundred new locomotives within the last few months, and is building some heavy ten wheel locomotives at the Sacramento shops. The engines have an extended front and straight stack, and weigh 111,500 pounds in working order. Fifteen hundred 34 foot freight cars, of 50,000 pounds capacity, have been added to the equipment lately, 1,000 box and 500 flat cars. The standard rail now used weighs 60 pounds per yard.

A WATERPROOF LINING FOR CELLARS.

A waterproof lining adapted for use beneath pavements in cellars and engine rooms, and similar places, and also in mines and tunnels, has been patented by Mr. Frank J. De Borger, and is illustrated herewith. At the bottom of the cellar excavation is placed a watertight casing, composed of plates of metal, united to form a continuous bottom, and vertical side walls, to fit against the regular masonry walls. Upon this casing is placed a layer or bed of gravel, sand, or dry earth, as shown in the sectional view, Fig. 2, and upon this is laid the usual floor, of cement, wood, or brick,



DE BORGER'S WATERPROOF LINING FOR CELLARS.

with vertical walls to the height of the walls of the metal casing.

For further information relative to this invention, address Mr. T. F. Neville, No. 67 William Street, New York City, or Mr. Frank J. De Borger, Babylon, L. I., N. Y.

Collecting Diatoms.

In an interesting article in the *Bulletin of the Torrey Botanical Club*, Mr. C. Henry Kain discusses the "Diatoms of Atlantic City and Vicinity." Speaking of the bright brown patches of diatoms frequently seen covering the surface of mud, he recommends that they be collected in the following manner: Half fill a bottle with water. Touch one of these brown patches lightly with the tip of the finger, and the diatoms will adhere; then place the finger over the mouth of the bottle and shake. The diatoms are, of course, washed off and remain. By repeating this process again and again, the water finally becomes quite brown. By the time the collector reaches home the diatoms will have settled to the bottom, and the water may be poured off and the diatoms cleaned. It is worth while to examine under the collecting lens every promising patch of brown mud, for very pure gatherings of quite different species may often be collected within a few feet of each other.

The Death of Cleopatra.

Dr. Viaud Grand-Marais, of Nantes, has been holding an inquest on the sudden death of Cleopatra. He rejects the theory that her death was caused by the bite of a viper. She was accustomed to test the effects of various poisons on her slaves, in order to ascertain which caused the easiest death. Having shown that no viper was found in the room of the fair suicide, that her body presented no traces of bites, and that her two maid servants were found dead or dying at the foot of her bed, he comes to the conclusion that her death was caused by carbonic oxide.—*Bulletin General de Therapeutique.*