

THE PHOTOGRAPHIC NECKTIE.

Where will the progress of instantaneous photography end? In view of the admirable results obtained by scientists, and especially by Mr. Marey, inventors have for several years been setting their wits to work to devise small apparatus for allowing amateurs to take photographs without any one seeing them do it. We have already made known the photographic opera glasses and hat; but here we have something cleverer, and designed to meet with great success among practitioners: it is a question of a necktie provided with a pin. The latter is an objective, and the necktie is a camera. When any one approaches you and speaks to you at a distance of 2 or even 3 ft., you press a rubber bulb concealed in your pocket, and you have the portrait of your interlocutor.

This ingenious little apparatus, with which also general views may be taken, was devised by Mr. Edmond Bloch, who has operated it in our presence, and, although the instrument is not yet being manufactured for sale, we have decided to make it known to our readers at once.

Fig. 1 represents the photographic necktie, and Fig. 2 gives a front view of it as it is to be worn by the operator, the metallic camera, which is flat and very light, being hidden under the vest. Fig. 1 gives a back view, the cover of the camera being removed to show the interior mechanism, comprising six small frames which are capable of passing in succession before the objective, and which permit of obtaining six negatives. The instrument may be constructed with 12 or 18 frames. The apparatus is operated as follows: The necktie having been adjusted, the shutter is set by a pull upon the button, A (Fig. 1, No. 2), which passes under the vest. In order to change the plate, it is necessary to turn from left to right the button, B, which has been introduced into a button hole of the vest, and which simulates a button of that garment. This button must be turned until the effect of a locking, which occurs at C (Fig. 1, No. 1), is perceived, and which puts the plate exactly before the objective. In order to open the latter, it is necessary to press the rubber bulb, D, which has been put into the trousers pocket. The rubber tube, E, passes under the vest and serves to transmit the action of the hand.

In order to charge the apparatus, it is opened at the bottom by turning the small springs, G G G; the sensitized plates are put into the frames, and the springs are turned back to their former position.

The apparatus is scarcely any thicker than the ordinary necktie called "Régate." The camera that contains the plates is not more than 0.2 inch in thickness. The six frames are carried before the objective through an endless chain, as shown in the figure.

Mr. Bloch has shown us some of the photographs that he has taken with this first apparatus, which he considers as yet but an experimental instrument. We reproduce herewith three portraits obtained with the apparatus, Fig. 3, through the minute objective skillfully concealed in the center of the pin. These photographs are about 1½ inch square, and are sufficiently sharp to allow the portraits to be recognized. If this apparatus can be well constructed, we predict a great demand for it.—*La Nature*.

A COMBINED HARROW AND CUTTER.

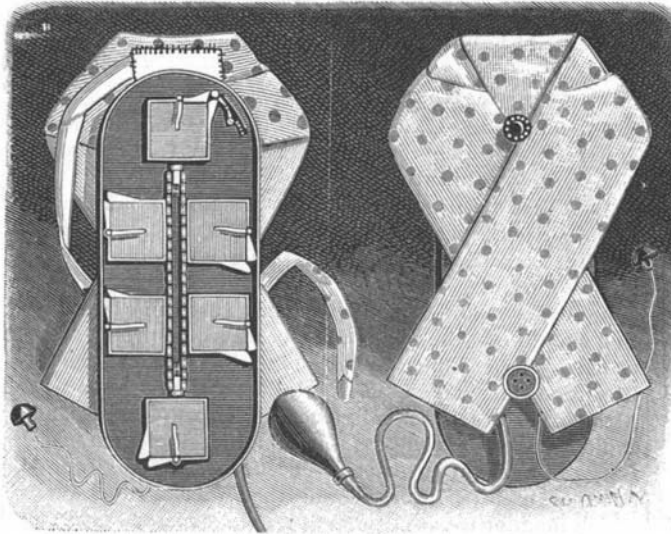
The implement shown in the illustration, which forms the subject of a patent issued to Mr. Thomas L.



FLANAGAN'S HARROW AND CUTTER.

Flanagan, of Vicksburg, Miss., is also capable of use as a rake or cultivator, and is designed to be quickly and conveniently manipulated. It has a main outer frame and an inner suspended frame, a series of hangers from the front cross bar of the latter having slots which re-

ceive a bar extending from side to side of the main frame, this bar being raised and lowered by upright rods, threaded at their ends, on which is a nut with handle attached. At each rear corner of the main frame is a standard carrying a segmental grooved pulley, a standard on each forward end of the frame supporting a shaft carrying segmental grooved pulleys in alignment with those at the rear, while a chain secured to the front end of each segmental pulley forward is extended by a link to connection with the for-



Figs. 1 and 2.—PHOTOGRAPHIC NECKTIE—BACK AND FRONT VIEW.



Fig. 3.—FACSIMILE OF PORTRAITS OBTAINED WITH THE APPARATUS.

ward side of the rear segmental pulleys. The forward cross bar of the inner frame is hinged to the adjustable bar of the main frame, and the inner frame is also attached to the outer by a length of chain at each rear corner, the chains being carried up over the segmental pulleys to attachment at a point near where these links are attached to the pulleys, the inner frame being raised and lowered by a lever through these link and chain connections. Upon the inner frame are transverse shafts supporting the teeth, formed in the shape of a sickle, any one or more of the teeth being readily removable as desired, while the forward teeth have beveled side faces to throw the dirt to the right and left. The rear teeth are so placed that their convex edges will face to the front, and this edge is sharpened or brought to a knife edge, that the teeth may act as pulverizers, the shaft to which these teeth are attached being held in position by springs, to permit the teeth to pass over obstructions. Levers upon the forward transverse shaft of the inner frame are so connected by means of links as to enable the operator to give the desired inclination to the two forward series of teeth, these levers being adapted for latch engagements with racks. The implement may be used as a cultivator by removing two of the middle teeth from their spindles and raising the rear set of pulverizer teeth. As a harrow the teeth are intended to enter the soil about twelve inches, and when the implement is used as a rake, the rear set of teeth is also preferably removed.

Making the Deserts to Bloom.

Professor Hilgard, Director of the Agricultural Experiment Station at Berkeley, and esteemed the best authority in America on these matters, says the underflow of great gravel beds existing in the southern part of California is proving to be of increasing importance as a source of irrigation supply. It is possible to maintain and increase the supply of water far beyond its present magnitude. All that is necessary is to understand the controlling principle of its action. These gravel beds are natural storage reservoirs. They may be emptied and replenished, with due regard to the rainfall and drainage. Antelope Valley, in San Bernardino and Los Angeles Counties, a high intermountain plain or basin

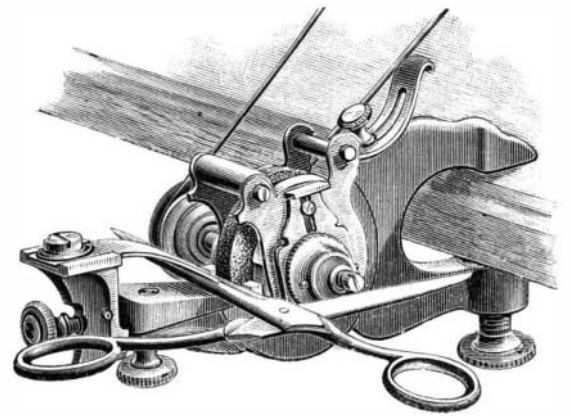
stretching between the Mojave Desert and the upper part of the great Colorado Desert, has been considered, until recently, almost irreclaimable. There are now upon it several great fruit colonies.

In reply to inquiries for information sent out there by the department, interesting answers have just come. They give the details of three large surface systems of irrigation by water drawn from mountain streams. This has all been done since April, 1889. There are fifty miles of main ditches, five feet wide at the top, and fifty miles of smaller ditches, two and a half feet wide at the top. There are three reservoirs with a capacity of 30,000,000 gallons. There are five dams, five headways, seven weirs, and six mountain tunnels. The expenditures to date amount to \$450,000. To this will be added \$21,000.

The land now irrigated amounts to 10,000 acres, and will be increased to 25,000 acres. Small grains, cotton, and alfalfa are the chief crops. Such experiments as have been made with fruits have given great results. The land is chiefly government, unpatented, and, therefore, unassessed for taxation. Patented land, irrigated, sells for from \$10 to \$50 an acre. Non-irrigated land is worth from \$2.50 to \$8 an acre. Five artesian wells have been sunk in a belt of twelve miles. They indicate that a much greater supply of water is available. These wells are from 180 to 500 feet deep. They have a flow of from 50,000 to 200,000 gallons in twenty-four hours. They serve about 7,000 acres. There are 100 dug and bored wells, with wind or steam power, ranging from 20 to 100 feet deep. These wells penetrate the gravel drift, and supply water for vegetable and stock purposes, and for desert and tree claims. This is the beginning of what is believed will result in the reclamation of the whole valley, and even of the Mojave Desert.—*Pacific Lumberman*.

AN IMPROVED SCISSORS GRINDER.

The device shown in the illustration is adapted for attachment to a sewing machine table or other support, and is so constructed that the edges of scissors blades may thereby be hollow-ground when desired, without grinding the cutting edges, the separate grinding of the latter being also provided for. It is a patented invention of Mr. Frederick Visscher. The shaft carrying the emery wheel passes through two hubs, on each of which is an eccentric collar on which is fitted the lower end of an upwardly extending plate having a vertical slot, and a circular flange integral with its upper edge. A second inner plate is attached to the outer plate by a set screw, but has a slot by which it is capable of free vertical movement, and when the outer plate is rocked upon its eccentric collar the inner plate is carried upward thereby, there being plates on each side of the body, and the inner plates also having horizontal flanges at the top to correspond with the



VISSCHER'S AUTOMATIC SCISSORS GRINDER.

flanges on the outer plates. From the upper edge at each corner is an upwardly extending arm, and the arms of the plates at each side of the body are connected by rods or bolts, so that the connected plates constitute a carriage to receive the blade of the scissors to be hollow-ground. When the carriage is carried in the direction of the clamp, the blade is transversely presented to the grinding wheel, but by reason of the eccentric mounting of the carriage the cutting edge is kept out of contact with the wheel. The carriage is locked in the desired position for proper grinding by a slotted curved latch which extends from the carriage, a binding screw passing through the slot of the latch. When the cutting edge of the blade is to be ground, it is placed on a tapering block held to slide on the body, as shown in the illustration. The block is adjustable to and from the wheel by means of a set screw, while it is retained in adjustment by a binding screw, and the blade is held in proper position upon the block by means of a spring, the lower end of which has a bearing upon the upper face of the blade.

For further information relative to this invention address the patentee, or Mr. Frederick F. Visscher, No. 5½ Dexter Avenue, Montgomery, Ala.