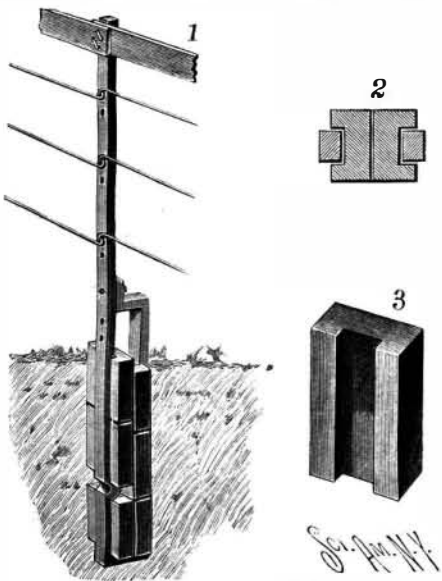


## AN IMPROVED FENCE POST.

A weighted metallic fence post with which both wire and board stretchers may be connected, or to which may be attached horizontal studding for paling fences, has been patented by Mr. James B. Gowdy, of Oak Grove, Ill., and is shown in the illustration, Fig. 1 showing the post in position in a fence, Fig. 2 being a sectional view through its lower portion, and Fig. 3 representing one of the weights used in anchoring the post. The post is of either wrought or cast iron, and all in one piece, the two parallel uprights of its lower



GOWDY'S FENCE POST.

portion forming a holder or receiver for specially formed bricks or weights, each of which has a groove in one face to enable them to be slid into place vertically, the bricks being arranged in couples, back to back. Where the post is made of wrought iron, the shorter upright is joined to the longer one by a bolt, and the brick-holding portion may then be spread slightly to receive the bricks before the bolt is tightened. A depression and bulge in the longer upright, just above the lowest bricks, is designed to prevent the sinking of the post too deep in the ground. The fence wires are locked to the post by staples inserted in holes provided for this purpose, board stretchers being similarly fastened by clinch or wire nails. With this improvement the post is designed to be so anchored to the ground that it will not be upheaved by the frost, and, on any disturbance of the earth, it will slide back as the ground settles.

## A NEW PRINTING TELEGRAPH.

The illustration represents a printing telegraph apparatus designed, by means of a transmitting device with an ordinary keyboard, to operate at a distant station a typewriter, a type-setting machine, or other keyboard machine of the usual style, each station being provided with a similar apparatus. This improvement has been patented by Mr. Donald Murray, of the Sydney Morning Herald, Sydney, New South Wales, Australia. The apparatus is designed to use only ordinary telegraph currents, capable of being relayed and subject to all the conditions of ordinary telegraphy; to transmit eighty different characters; to work at the highest speed permitted by the manual dexterity of the operator at the keyboard, and to dispense with all clockwork controlling mechanism, synchronously moving type wheels, and other slow and cumbersome devices.

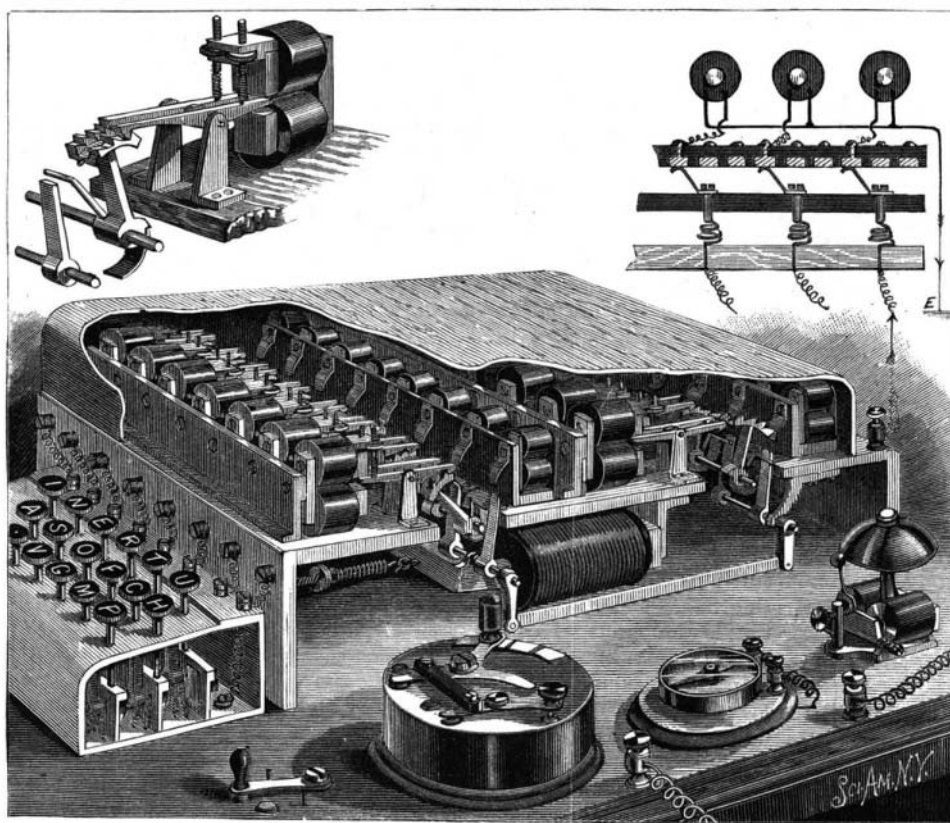
The apparatus comprises a transmitter, which, by the depression of a key, transmits a certain combination of five short positive and negative currents, and an interpreter, by the passage through which of a given combination of positive and negative currents a spring or lever is released and makes electrical contact, thus energizing a particular electro-magnet which operates a certain type key. Thirty-two transmitting elements connected in parallel form the transmitter, and thirty-two interpreting elements form the interpreter, and these are combined with a shift key device, shown in the right hand corner of the picture, a typewriter and a battery. The illustration represents the complete apparatus for one station—the transmitter, interpreter, shift key mechanism and typewriter—together with a main switch controlling the several circuits, a galvanometer which indicates whether or not a current is passing through the main line, and a signal bell.

The transmitter has a series of keys, as seen on the left in the picture, each key consisting of a rod operating a peculiarly constructed pole changer, and comprises a commutator having on one side parallel rows of stationary contacts connected in parallel with the line, and having a portion of the connections crossed, the commutator having its top surface inclined and its lower surface inclined at right angles to the inclination of the top surface, a key sliding adjacent to the commutator, and a contact block having a spring connection with the key-carrying contacts adapted to connect with a source of electricity, the contact block being arranged to move downward on one side of the commutator, and to slide inward and move upward so as to make contact with the contacts of the commutator. The interpreter, the detail of which is shown in the small figure, comprises a series of electro-magnets adapted to connect with a line, circuit-closing and swinging quadrants being arranged adjacent to the electro-magnets, and adapted when released to close the circuit through mechanism for printing a character or operating a key of a keyboard machine, each quadrant having a series of teeth in a different combination from the teeth of any other quadrant in the series. Swinging detents adapted to be actuated by the magnets engage the teeth of the quadrants, and electrically and automatically rotated shafts adapted to be set in motion by the closing of the circuit in which the quadrants are arranged carry mechanism to return the quadrants to locked position.

One of the transmitter keys operates the space key of the typewriter and three other transmitter keys operate the shift key mechanism, shifting to capitals, lower case or figures. When the paper carriage of the typewriter comes to the end of a line, it may be returned by the attendant at the receiving station or by an automatic mechanism provided for this purpose. The galvanometer on the main line at each station indicates when a current is passing. When the instruments are not in use the bells are put in circuit, and, when the interpreters are left in circuit, the operator at either station can send a message to the other station, where it will be recorded on the typewriter, without an attendant being present, the process being automatic, and it being necessary only to provide a sufficient amount of paper in the typewriter to receive the message.

## A Clam Mine.

A clam mine, full of live clams and of great breadth and depth, has been discovered at the mouth of the Delaware Bay, off the Flashing Creek shore. This, says the *True American*, has proved a valuable find, and recently about 100 boats, containing from three to five men each, were at work on the mine. The product of the great bed is shipped daily to Chicago, a speculator of that city agreeing to take the entire output of the mine at about 30 cents per hundred, delivered at Bennett's Station on the West Jersey Railroad. Every now and then a discovery something like this is made, but the present mine exceeds any previous find known

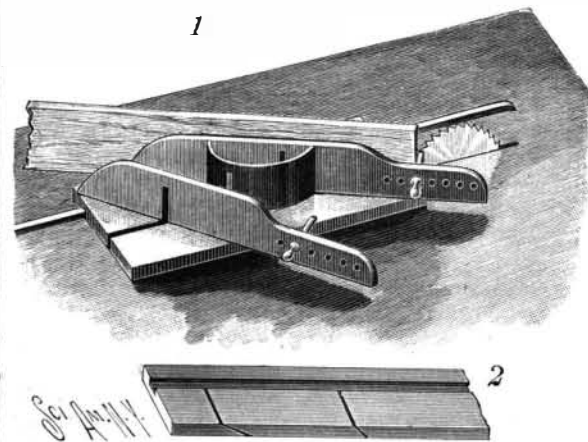


MURRAY'S PRINTING TELEGRAPH.

on the Atlantic coast. About three years are required for clams to grow properly and obtain a marketable size and flavor. This bed is said by experts to be about three years old. One of the greatest shipments yet made was on July 6, when over 50,000 clams started on their journey west from Bennett's Station. The bags were piled so high as to almost hide the station house.

## A NOVEL WORK GUIDE FOR SAWS.

A guide applicable to any common form of saw table, to hold and guide the material to be sawed, and which is especially adapted to facilitate the quick and accurate forming of the pockets in the stiles of windows, is shown in position for use in Fig. 1 of the illustration, Fig. 2 being a broken detail view of one of the sash stiles with its usual angular cuts. This improvement has been patented by Mr. Valentine Stein, No. 180 East 109th Street, New York City. The guide consists of two parallel slide plates, separated by a slot, through which the saw passes, and adapted to be moved along over the bench top upon a guide rail removably secured therein, one of the slide plates having a groove fitting the rail. Extending diagonally



STEIN'S WORK GUIDE FOR SAWS.

across the plates at different angles are vertical wings, slotted to register with the slot of the slide plates, one of the wings having a guard to shield the hands of the sawyer from the saw, and the guard being likewise slotted to receive the saw. The wings support the stiles to be cut, and the stiles are held in proper adjustment, that they may be cut in the right place, by pins passed through holes in the wings. The different angles at which the wings are placed insure the corresponding cutting of the stiles, one cut being made with the stile against one wing and the other cut with the same stile against the opposite wing.

## Palm Oil.

In a recent report on the botany of Sierra Leone, Mr. Scott Elliot says that the export of palm oil and kernels forms by far the largest part of the West African export trade. In 1890 the value of the palm oil exported from Sierra Leone was £13,599 and of the palm kernels £107,827. The tree is more abundant further down the West African coast, and appears to prefer alluvial, often marshy, ground near the sea. It particularly seems to thrive on the rich soil of the mangrove accumulations. There are large numbers of palm trees in the Mahela district, where a factory once existed, and there are also a considerable number up the Scarcies River and in the lower part of the Limba district. It grows also on low sandstone or gneiss hills, but probably does not produce so much in such places as on the low-lying, rich alluvials. The palm is propagated from the offshoots that appear at its base, and these are said to begin in the second or fifth year, and are in full bearing about the 10th to 15th year. They continue producing for 60 years. A single tree yields from one to three gallons of palm oil, or, according to Selmer, 16 liters annually, and this amount of oil will give from one-sixth to half a hundredweight of kernels. This would be a profit of from 2s. to 6s. a tree per annum, as about 300 gallons of palm oil give a ton of oil and about 2½ tons of kernels. Hence plantations of these trees should be profitable in time. It is, however, exceedingly difficult to get any trustworthy information, and the above, Mr. Elliot says, must be regarded as very approximate. The palms require no care, and are not, apparently, attacked by any injurious insects. The preparation is of a very rough and makeshift character; the fruits are thrown into a tank and left till decomposition begins. They are then boiled and afterward pounded in a mortar. Probably 25 per cent of the oil is lost in preparation.

MILK, when saturated with carbonic acid under pressure, will undergo no change within a week, according to C. Nourry and C. Michel (*Compt. Rend.*) If it is heated to 45-50°, the curds form as usual.