

A Fatal Torpedo Explosion at Newport.

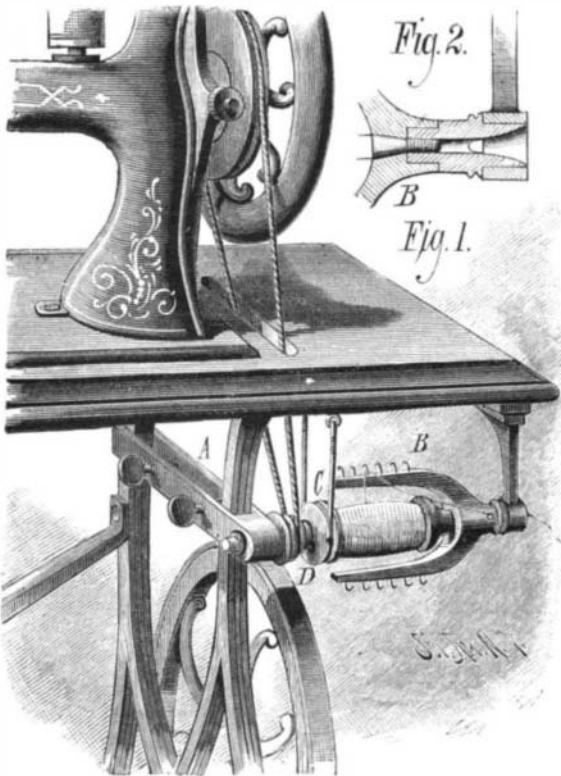
Recently two officers of the torpedo school at Newport, R. I., Lieutenant Commander Edes and Lieutenant Spaulding, were killed by the untimely explosion of a torpedo which they were placing in the harbor. According to the official report of Captain Thomas Selfridge, in charge of the torpedo station, the deceased officers were carrying out a torpedo in a small boat, when it exploded. The class had been previously instructed in all the details of the operation, and a diagram drawn that each one could see how the wires should lead, and special cautions had been given by the instructor, Lieutenant Commander Bradford. The torpedo was first to be planted. Then, of the two wires, one was to be connected to a circuit closing buoy, and the other to a firing circuit on shore. They had been cautioned not to make these connections after the torpedo was dropped until they had come ashore. As a further precaution, the wire connecting the firing battery with the torpedo in the electrical building was also disconnected, making three breaks, any one of which would make it impossible to fire the torpedo. It seems that the first torpedo planted by these officers became leaky, and in taking it up they cut the wires of the old torpedo without breaking the shore connections. In planting the new torpedo, being in a hurry, they pulled out and took up the wires from the water and connected it (the torpedo), supposing the connection in the electrical building was broken. It appears that Lieutenant Commander Caldwell, supposing, as should have been the case, that the connections of the torpedo were broken, joined this connection in the electrical building. The terrible result followed.

SPINNING ATTACHMENT FOR SEWING MACHINES.

The engraving represents a very simple spinning device, which can readily be attached to a sewing machine, and replaces the cumbersome spinning wheel generally used with hand machines for spinning. Fig. 1 is a perspective view of the device applied to a sewing machine, and Fig. 2 is a sectional view of the outer journal of the spindle.

A clamp, A, is secured to the leg of the sewing machine by thumb screws, and supports the spindle, C, flier, B, and the spool. The end of the spindle is furnished with a hollow flaring mouth.

To fit the attachment for operation the clamp, A, is to be attached to the legs beneath the table and directly over the driving wheel, with the spindle projecting in a horizontal direction, with space enough for the flier to clear the table. The bracket which supports the outer end of the spindle is then to be screwed into the table directly over and in line with the mouthpiece of the spindle. A tension band is passed around the grooved pulley of spool and secured to the table. The object of this band is to prevent the spool from turning as fast as the flier, and it can be made to turn as fast as required for taking up the thread by tightening or slack-



BLACKETT'S SPINNING ATTACHMENT FOR SEWING MACHINES.

ening the band by means of screws. The driving band is passed around the driving wheel of the sewing machine and around the cone pulley, D.

This attachment will readily do all the work of the ordinary spinning wheels much faster, and it is much easier to work than spinning wheels. The attachment saves the necessity of having a spinning wheel where there is a sewing machine in use.

In many parts of the country a spinning wheel is just as much a necessity in every family as a sewing machine; but with this attachment to the sewing machine the large wheel will not be required.

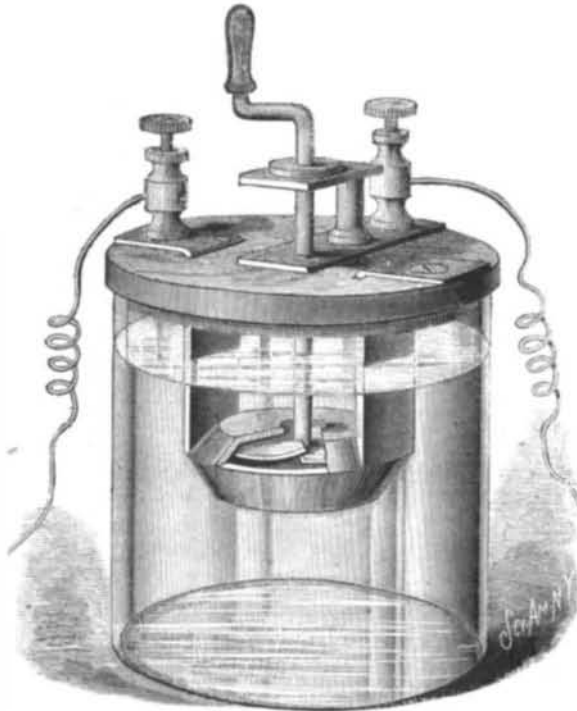
For preparing yarn for crochet work and knitting the spinning and twisting attachment is especially useful.

This invention was recently patented by Mr. J. C. Blackett.

All communications in regard to the invention should be addressed to Mr. J. R. Blackett, Caledonia Mines, Cape Breton, Nova Scotia.

AN IMPROVED BATTERY.

The engraving shows an improved galvanic battery lately patented by Mr. A. Floyd Delafield, of New York city. This battery is provided with means for increasing the strength of the current by producing a more or less rapid circulation of the solution in contact with the elements by mechanical means, operated by hand or by a motor. This is accomplished practically by fitting the negative element upon a shaft for revolution between the zinc plates, and for



DELAFIELD'S GALVANIC BATTERY.

increasing the effect the revolving disk is made in spiral form, something like a screw propeller, so that it creates a circulation of solution in the cell, thus continuously depolarizing the elements.

Pictet's New Steamer.

The Geneva correspondent of the London *Times* gives the following details concerning Professor Raoul Pictet's model steamer, which he expects to drive at the rate of 40 miles an hour:

Her dimensions are 16 meters long and 3.50 meters wide. When lying at anchor she will draw 33 centimeters fore and 44 centimeters aft; at full speed, 1 centimeter forward and 16 centimeters aft. The engine will be placed amidships, from which point to the stern the screw shaft and the keel form an inclined plane; the bows are long, tapering, and wedge-shaped. Professor Pictet reckons that his invention will lead to a great saving of fuel, inasmuch as a steamer built on his plan, after being started with, say, 100 horse power, may be kept up full speed with an expenditure of force equal to 30 horses. The form of the hull, on which the maintenance of the ship's equilibrium will depend, cannot be explained without a diagram. Professor Pictet is quite confident in the success of his invention, and his scientific previous achievements have been so remarkable that many people who cannot follow his reasoning have no hesitation in accepting his conclusions.

The Improvement of the Mississippi River.

The construction committee of the Mississippi River Commission, consisting of General Q. A. Gillmore, Major C. R. Suter, and Mr. B. M. Harrod, has for several months past been holding monthly meetings in St. Louis for the purpose of hastening the preparation of the outfit required for a vigorous prosecution of work under the appropriation of \$1,000,000 made at the last session of Congress, all of which will be expended on the river below the mouth of the Ohio. As bad navigation on that portion of the river is invariably due to excessive widths produced by caving banks in concave bends, the first thing to be done is to stop this caving by suitable works of bank protection, such as a brush mattress weighted with stone or some other species of revetment or covering extending down from the crest of the bank into deep water. The next step will be to narrow the stream to such widths between the high river banks that the current, with the increased velocity produced by the narrowing, will scour out and maintain even during the low river stages, the depths required for navigation. This will be done by contracting the stream, usually at points opposite the concave bends, through the agency of light, permeable dikes, placed either longitudinally or transversely to the shore, or both. These dikes, composed of brush hurdles, or of wire and brush screens, or some similar device, will allow the water to pass through them with more or less freedom, and, by checking without arresting the current, will convert large areas next the shore into stilling or settling basins, within which the river itself is expected, during the flood stage, to build up new banks and establish new and advanced shore lines by constantly depositing the solid matter which it transports, but which the unimpeded

flow would carry down to the Gulf of Mexico. Works of this general character will be begun as soon as the working plant is ready upon nearly seventy miles in length of the worst navigation below Cairo, namely, about forty miles on the Plum Point stretch, above Memphis, and thirty miles in the vicinity of Lake Providence, above Vicksburg. Nothing will be done upon the levees. It is expected that work will begin about October 1.

The National Telephone Exchange Association.

The third semi-annual convention of this association was held in Saratoga, the second week in September. There were present at the first session 250 delegates, of whom 100 represented telephone companies. Among the prominent delegates were:

G. L. Wiley, assistant general superintendent of the Metropolitan Telephone and Telegraph Company; W. A. Childs and Francis Shaw, of the Law Telegraph Company; Henry W. Pope, of the Staten Island Telephone Company; Henry Metzger, general manager of the Pittsburg Telephone Company; William Sargent, the general superintendent and electrician of the Bell Telephone Company, of Philadelphia; Mr. Goodyear, representing L. Tillotson. C. B. Hotchkiss, John A. Roebing, Washburn & Moen, and other firms were represented. Among the subjects for discussion were these: The latest improvements in all the instruments used; underground wires; wire construction and kinds of wires; also a report on electrical disturbances interfering with the telephone service.

IMPROVEMENT IN TELEPHONES.

The engraving shows an improved telephone transmitter and receiver recently patented by Mr. J. A. Lakin, of Westfield, Mass. This instrument is especially intended for mills, railroad offices, and other places wherein much local noise disturbs the successful operation of the common telephone now in general use. This instrument consists of a square box, in which are placed both a transmitting and a receiving diaphragm. From the receiving diaphragm chamber two sound tubes extend to be received one in each ear. They are kept in place by a small spiral spring, tending to draw the tubes together, and thus keep the small rubber caps on the ends of the sound tubes in place in the ear. These caps shut out all extraneous sounds and confine the sounds of the receiving telephone, so that their full effect is felt on the ear.

The lower part of the box, as seen in the drawing, contains the transmitter, which is made very sensitive. It is claimed that this instrument will talk two hundred miles or more.

Pressing the button, as shown in the cut, brings the battery into circuit with the transmitter. The inventor of this instrument has given much time and study to the construction of telephones, beginning as early as 1869, although, as he informs us, most of his attention has been given to acoustics.



LAKIN'S TRANSMITTING AND RECEIVING ELECTRIC TELEPHONE.

For further information address J. A. Lakin, Westfield, Mass.

NEW INVENTIONS.

Mr. Henry Grabach, of Clyde, O., has patented an improvement in the manufacture of boots and shoes, which consists in securing the counter stiffener to the shortened lining by a line of stitches around its edge, the lining of heel portion terminating at the edge connection, so that the friction of the heel of the foot comes upon the stiffener and a portion of the usual lining is saved.

Mr. John Murray, of New York city, has patented a toy savings bank for children, so constructed as to connect amusement with the operation of depositing money in the banks. The invention consists in a toy savings bank having a slotted base with a money receiving compartment at its rear