er than this; and I have little doubt that the whole rests on the action of electric and galvanic principles, which are constantly in operation in the earth.

We know that when certain metals are brought together, powerful electric action is evolved, and a light is produced, superior even in effulgence to the splendour of the sun. Now if a small arrangement produces such results, what may we not expect from the combination of those immense beds of metals to be found in the earth? Here we have the key to all the phenomena of volcanic action. An illustration on a small scale may be seen in an instrument called the theo-electrical battery, made of zinc, bismuth and antimony packed in a box and varnished. In this, heat is evolved below, while the top is cold; and here we have the very cause of the volcano, where in the interior a fiery ocean is heaving its surges, while its peak is capped with everlasting snows.

Patent Wagon.—Mr. Start, of Smyrna, Delaware, has made an improvement in manufacturing wagons which will certainly be a great advantage to the farmer, inasmuch as it will effect a great saving in labor. The bed of the wagon is placed on small rollers, fixed in the frame work, on which it rests, and in front is a fixture for a lever by which a lad can run the wagon bed and shoot its contents on the ground.—It would seem that this wagon can be introduced to great advantage, among those who haul fresh lime or manure on their farms, as they can at once discharge the load just as readily as they can that of a cart, thereby saving, where the load is lime, an hour's work or more. Old waggons at a slight expense, say some ten or fifteen dollars, can be rigged on this plan. It was exhibited at the Newcastle County Cattle Show, and was highly spoken of by the gentlemen who examined it.—*Farmer and Mechanic.*

Interesting Fact in Animal Chemistry.—In some pathological conditions there has been observed, at points where bones and muscles meet, an accumulation of free lactic and phosphoric acids, which has never been perceived at those points in the normal state. The solution and removal of the phosphate of lime, and therefore the disappearance of the bones, is a consequence of this state. It is not improbable that the cause, or one of the causes, of this separation of acid from the substance of the muscle is this—that the vessels, which contain the fluid of the muscles, have undergone a change, whereby they lose the property of retaining within them the acid fluid they contain.—The constant occurrence of chloride of sodium and phosphate of soda in the blood, and that of phosphate of potash and chloride of potassium in the juice of flesh, justifies the assumption that both facts are altogether indispensable for the processes carried on in the blood and in the fluid of the muscles. Proceeding on this assumption, the necessity for adding common salt to the food of many animals is easily explained, as well as the share which that salt takes in the formation of blood, and in the respiratory process.—*Liebig's Researches on the Chemistry of Food.*

Sewing Machine.—Morey & Johnson have invented a sewing machine, which is now successfully employed in the different factories of Lowell, and will sew from 2 to 4 yards in a minute, according to the size of the stitch, whether fine or coarse. It is also used by many of the factories of Boston, and many other places in Connecticut. At New London there is one machine which sews 30 pair of pants a day, or does about half the entire sewing required to make them complete. The machine of Messrs. Morey & Johnston will sew 40 bags per hour, and contracts have been made for making them by this machine at 1 1-4 cents per piece. The sewing too is decidedly stronger and more uniform than that which is done by hand, and it will perform in the same space of time about ten times the amount of work which can be done in the usual way. The expense too of making this machine is quite moderate, and agencies have already been sold to the Eastern and our own States. An agent, Mr. E. P. Whitmore, who has been appointed for the purpose, for the Southern and Western States, is about visiting the South, to dispose of them in those sections of our country.—*Farmer and Mechanic.*

A New Life Preserver.—We witnessed, says the Scientific American, many curious scenes in the city during this week and last, and among the rest we were particularly struck with the properties of a new life preserver invented by Messrs. Ralston and Phillips, the former of Washington Co. and the latter of Pittsburg, Pa. It consists of an improved dress of india rubber cloth, part of which is inflated, and in which the swimmer is encased. We saw Mr. Ralston enjoy a rough and tumble in the East River, and he came out, threw off his preserver and (having all clothes on) not a thread was wet. A young man of the name of Lowell, crossed from Williamsburg to this city in it—a distance of about three miles, with steam-boats passing him every few minutes, and when he arrived at Peck Slip, he came out of his shell dry, ready for parade. It is a most excellent invention, and Mr. Ralston informs us that he has applied for a patent.

A person wearing one of these life preservers can carry from fifty to one hundred lbs., in addition to their person, and float four persons in the water, without sinking, and can take no other position in the water, except with the head and shoulders entirely above the water.

The entire person save the face, is enclosed, enabling the wearer to float in an erect, or sleep in a reclining posture, or with paddles which are attached, propel himself at the rate of three miles per hour. His person is kept entirely dry, and the heat of his body is so retained, that he is warm and comfortable, when floating on the water in cold weather.

Important Discovery.—Under this head a correspondent of the *Southern Reporter* has the following:—"Within the last few days I have been informed on indubitable authority, that some of the talented and scientific gentlemen connected with the Royal Irish Fisheries Company have discovered that the celebrated fishing banks of Newfoundland actually extend across the Atlantic to within 100 miles of Ireland! and the quantity of fish on the said banks is more than sufficient to supply the markets of the whole world."

Self-Priming Fire-Lock.—This is an invention of Mr. Walter Hunt, of N. Y., says the Farmer and Mechanic, and is a valuable improvement for priming and discharging fire-arms. The improvement can be adapted to either flint or percussion locks, by a very trifling alteration. The gun on exhibition at the Fair is an old U. S. musket, which had a flint lock, and the only change apparent in it is a neat little magazine in the place of the hammer-steel, and a steel point in the place of the flint. The alterations are all external. The act of cocking the gun deposits a priming of Guthrie's percussion pill-powder from the Magazine, which may be made to contain enough for fifty or five hundred charges. The lock is water-proof and appears to be perfectly infallible in discharging; indeed it seems quite impossible to miss fire so long as percussion pills remain in the Magazine Competent judges pronounce it superior to all known locks, and they say that the percussion cap will be finally exploded.