

## MECHANICAL INVENTIONS.

Mr. Montague S. Hasie, of Vicksburg, Miss., has patented a novel mechanism to be employed for the utilization of refuse cotton, technically known as "cotton motes." This consists of the refuse of the cotton gin after the process of ginning, and it has heretofore been thrown away as useless, although known to contain a large proportion of cotton fiber, the difficulty of separating the cotton from the foreign substances being considered too great to justify the expenditure of the necessary time and labor in that direction. By this machine the cotton fiber is separated from the foreign substances, and is cleaned and condensed, so as to produce from the motes a large proportion of cotton of a good quality, and thereby to make use of what was formerly a total loss.

Mr. Charles S. Adams, of Marshfield, Vt., has invented an improvement in devices for cutting and screw-threading metallic wagon axles. It is especially designed for shortening axle spindles to compensate for the wearing of the wheel boxes.

Mr. Lemuel W. Young, of Elk City, Pa., has invented an improvement in tubing tongs, designed more particularly for screwing and unscrewing the sections of tubing for oil wells, but applicable to general use as pipe tongs.

An improved roller bracket for attachment to the corners of photographic and other screens, for the purpose of supporting them and facilitating their movement on the floor, has been patented by Mr. John G. Stewart, of Carlisle, Ill.

Mr. Louis W. Ott, of Indianapolis, Ind., has patented a bed lounge that forms a lounge or couch when closed, and when open forms a bed. It consists in a movable front piece hinged to the upper portion of the bottom, and connected by a link with the lower portion, so that as the upper portion of the bottom is turned on its hinges the front piece is carried with it and drops down out of the way.

Mr. Charles H. Appel, of Shimerville, Pa., has invented an improved pretzel machine, which is simple, convenient, and forms the pretzels quickly and uniformly.

An improved spur has been patented by Mr. August Buermann, of Newark, N. J. The invention consists in spurs in which the heel band is provided with an elastic or yielding covering of rubber or gutta percha.

Messrs. T. R. Williams, E. R. Williams, and W. J. Williams, of Pittsburg, Pa., have patented an improved sand washing machine. The object of this invention is to furnish an improved machine for washing and cleaning sand as it is raised from a river. The invention consists in the combination of a tapered cylindrical rotating screen, provided with scroll paddles and an elevator for carrying the sand out of the box or well after it has been washed.

An improved hub-boring machine, patented by Mr. Alexander J. Mougey, of Carthage, N. Y., consists in a novel arrangement, a mandrel, a pair of chucks, a series of adjustable centering plates, and an adjustable bit or cutter, whereby provision is made for centering the work, holding it securely in position, and accurately boring the hub.

Mr. Aaron C. Vaughan, of Shane's Crossing, O., has invented a simple and effective form of nut lock which is applicable to the ordinary screw-threaded bolt without alteration. It consists in a nut of the ordinary form having a screw-threaded hole through the center, and having its face slotted about half way through the thickness of the nut, and the edges of the slot drawn together.

Mr. Alexander Gordon, of New York city, has patented an improved ship's log, which is so constructed as to count and register the number of knots run out in a quarter of a minute, and also indicate the knots by sound. It can be readily used by one man, and it is simple in construction and apparently reliable. We call attention to an advertisement in another column.

Mr. Richard H. Hill, of New Haven, Conn., has patented an improved safety elevator, which is so constructed that the motion of the operating mechanism may be reversed automatically as the platform reaches the upper and lower points of its movement, and which will apply a brake automatically when shifting the driving belts, so that the platform cannot run down accidentally.

Mr. Martin J. Racer (William Racer, administrator), of La Grange,

Texas, has patented an improved suspender button that may be quickly and firmly attached to garments, and that is not liable to tear the cloth or become accidentally loosened.

## ROSSET'S CLOCK.

This novel and interesting clock is suspended from the arm of a statuette by a spring on which the pendulum swings.



ROSSET'S CLOCK.

The pendulum is of the gridiron compensating style, and carries at its upper end a glass dial, and the pendulum ball consists of a hollow sphere containing the clock movement.

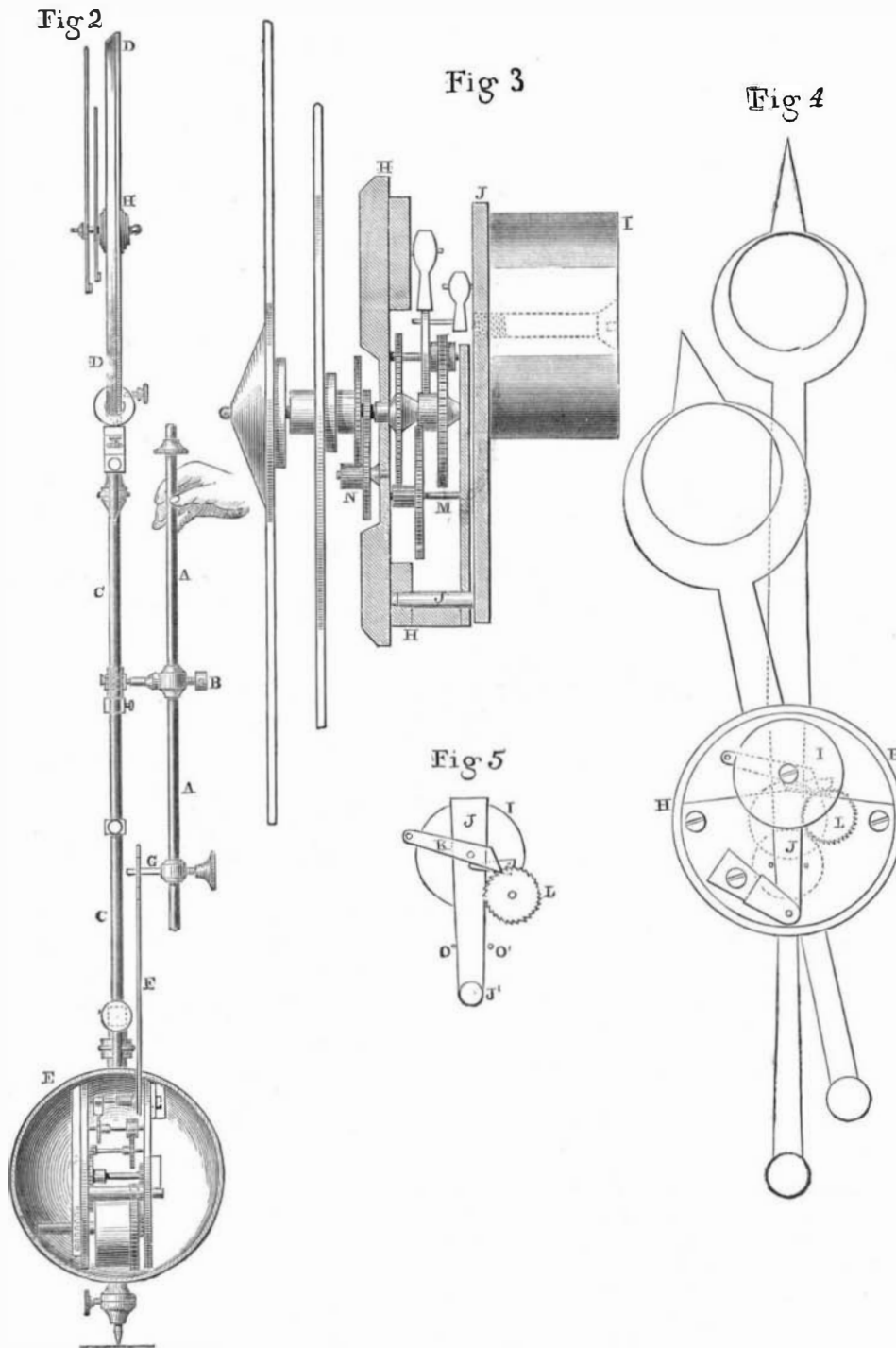
In our engraving, Fig. 1 is a perspective view; Figs. 2, 3, 4, and 5 are detail views showing the construction of the operative parts. The compensated pendulum, C, carries at its upper end a transparent glass dial, D, and to its lower end is attached the hollow globe, E, containing the movement. A forked arm, F, extends upward from the movement, and embraces the pin, G, attached to the lower end of the rod, A, held in the hand of the statuette. In this clock the movement of the arm, F, as it is actuated by the escapement of the clock, gives the pendulum sufficient impetus to keep it in motion.

To the center of the glass dial a small casing, H, is attached which contains the mechanism that moves the hands. In this casing is pivoted an arm, J, carrying the weight, I, and the pawl, K. As the pendulum is oscillated, the weight, I, shifts its position in the casing, H, and the pawl, K, is by this means made to act on the ratchet wheel, L, which, being connected by a train of gearing with the arbor carrying the hands, moves the hands forward regularly. The dial mechanism is shown considerably enlarged in Figs. 3, 4, and 5. In a complete clock, like that shown in Fig. 1, the pendulum oscillates without any apparent cause, and without some explanation it would be difficult to imagine how motion is communicated to the hands, as the casing, H, which contains the dial mechanism is very small.

## Protagon.

In the year 1865 Dr. Oscar Liebreich published a memoir in which he announced the discovery in the brain of a definite proximate principle containing phosphorus. Unlike the numerous bodies possessed of ill-defined properties, which had by different writers received the names of cerebrin, cerebri acid, lecithin, or phosphorized fats, this new body could be extracted by an easy process in a state of purity, and to it, probably to indicate it as the first definitely specific constituent of brain matter, Dr. Liebreich gave the name of "protagon." The brain was subjected to a special process, by which the protagon was separated in the form of microscopical needle-like crystals, differing a little in arrangement and form according to the concentration of the solution. As the result of several analyses, Liebreich ascribed to protagon the formula  $C_{11}H_{21}N_4O_{25}P$ . It was difficult of solution in cold alcohol, more easily so in warm alcohol and ether. In water it swelled and presented the appearance of an opaque jelly, ultimately dissolving so

as to form an opaque solution. For a time observers admitted it to be a definite phosphorized constituent of the brain, and they began to seek for it in various liquids and solids of the body. Hermann announced its discovery in the blood corpuscles, and connected many of the physical properties of these bodies with its presence. Parke found it in the yolk of egg, but Hoppe-Seyler thought that the yolk of egg contained not protagon but lecithin, and though this very distinguished investigator did not commit himself to a denial of the existence of protagon in the brain, still he seemed to have commenced to entertain some doubts about it. In 1868, however, Dr. Diaconow, a pupil of Professor Hoppe-Seyler's, published a paper on the subject which seemed to have an immense influence over the physiological chemists, causing them all to come to the conclusion that Liebreich's protagon did not exist as a definite proximate principle, but that it consisted of a mixture of lecithin with a body free from phosphorus, cerebrin, and causing the master himself to write, "As to protagon, I believe that I must decide for its being a mixture of some glucosid free from phosphorus, as cerebrin, with lecithin;" and so the matter rested until recently, when the whole subject was once more most carefully reinvestigated in the physiological laboratory of Owens College, Manchester, by Professor Gamgee, F.R.S., and Mr. E. Blankenhorn. The process employed in the preparation of protagon, and the result of the ultimate analyses thereof, with a very interesting account of all its previous history, will be found in the current number of Professor Foster's *Journal of Physiology*. As to the result, the fact of Liebreich's discovery is now left beyond a doubt; but the empirical formula for this important principle would appear to be  $C_{11}H_{21}N_4O_{25}P$ —an alteration from Liebreich's, in all probability owing to the extreme care and the improved methods employed in these late investigations.



ROSSET'S MYSTERIOUS CLOCK.