Another Juvenile Prodigy.

The latest addition to the long list of juvenile prodigies, in respect to memory and mathematical accuracy, is reported from Maine. He is, says the Bangor *Commercial*, the son of a former postmaster of that place, and is now ten years of age. He is untaught, save in the art of reading, to which he appears to give more attention than wiser parents would allow. His strong point is memory. He recollects not only everything that he reads, but everything that he does, remembers on what day he did it, where he was at the time, and what were the circumstances that led him to do it. For instance, he will tell where he was on any day within the past two years, and what he was doing. Further, he remembers and can tell everything that his friends have done, providing he has seen them do it, and can tell on what date and on what day of the week they did it.

The first that his friends noticed of his precocity was about a year ago, when they accidentally discovered that he was almost infallible on any date he had ever seen or heard. Walking in company with some relatives in a cemetery it was observed that he would look at a tombstone, read the date of the death recorded, and the exact age of the person buried there, then glance up and tell on what day of the week the dead person was born. This happened on several occasions, and but little attention was paid to it. Finally one of his relatives took pains to look into an old almanac covering some of the dates he had mentioned, and found that the day of the week had been given correctly in every instance. This caused them to ask him questions, when it was discovered that he could almost instantly tell the day of the week on which any date within the last 75 years fell.

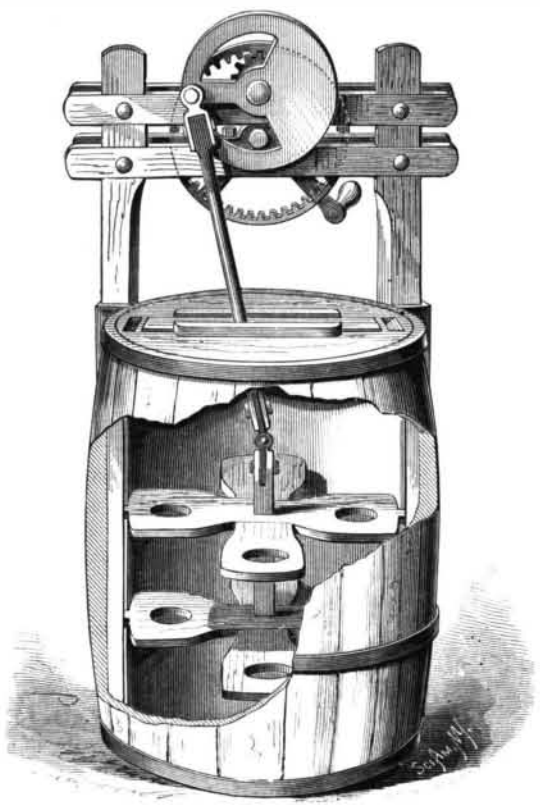
In a series of tests made by the *Commercial* writer, the boy gave the day of the week corresponding to a large number of dates between 1812 and 1840, gave it correctly in every instance, and averaged five seconds for each test. The longest time required was eight seconds, the shortest three seconds. His habits are described as "peculiar."

"He never plays with other boys, but is continually busy in reading. Oftentimes he takes an unabridged dictionary and studies it hour after hour, never seeming to consider it anything but a pleasure to do it. In fact he takes no comfort unless busying his brain about something. If there is anything he does not understand he keeps at it till he does understand it, and then it is next to impossible for him to forget it. One would naturally suppose that a child with such unusual powers would gradually fail and fade away, but, singularly enough, he is constantly growing stronger and more healthy."

It is to be hoped that the last assertion is strictly true, and that the precocious youngster will not exhaust his brain power in infancy. The chances, however, are heavily against him. His name is Charles Fuller.

AN IMPROVED CHURN.

We give herewith an engraving of an improved churn recently patented by Mr. Joseph N. Parker, of Titusville, N. J. The dasher consists of two pairs of cross arms fitted horizontally on a short dasher rod and arranged to slide in ways in the side of the churn. The dasher is reciprocated by gearing supported by a frame attached to the side of the churn. The rod that connects the dasher with the crank passes through a slide in the churn cover, and works through a slot in the cover, which is covered by the slide. The crank



PARKER'S CHURN.

is counterbalanced to insure a smooth action of the machinery. When the churn is driven by power a pulley may be placed on the crank shaft; when it is driven by hand a pinion is placed on the crank shaft, and driven by an internal gear wheel supported by the lower cross bar of the frame. The arrangement of the gearing is such that the churn cover may be readily removed without disturbing the frame that supports it. The mechanism is simple, and the inventor claims that it is very efficient.

Value of a Trade Mark.

The value of a trade mark met with a striking exemplification in Louisville, Ky., recently. Milton J. Harvey, of New York, member of the firm of P. Moorman & Co., brought suit in the United States Court to dissolve the firm. The firm have been large whisky operators, the J. H. Cutler brand being a specialty, and the New York, Boston and California markets being their principal centers for operations. This brand, or trade mark, was one of the valuable assets sold by the United States Commissioner. The first bid was for $5,000, and, after the auctioneer was three hours on the stand and nearly one thousand bids were made, Chas. P. Moorman became the purchaser for $51,050. This was probably one of the most remarkable trade-mark sales ever made in this country, and shows the value of a peculiar mark by which the manufacturer seeks to distinguish his own productions from those made by other persons. This sale further shows the importance of such a privilege, and also why laws of Great Britain and the United States have been especially framed to protect manufacturers in their rights in this respect, because no honest manufacturer will invent and apply a trade mark to his wares unless he is convinced that they possess some special excellence, which he wishes thus made known; and it is desirable the public should have the benefit of such direction in the choice of their purchases as is thereby afforded.—*Chicago Journal of Commerce.*

The Electrical Balance.

Mr. Chandler Roberts, at a recent meeting of the Physical Society, gave some results which he had obtained from an examination of certain alloys by means of the induction balance. He had been able to detect a difference of one part in 1,000 in the amount of silver in two shillings of equal weight. He also pointed out that Mathiessen divided alloys into three classes—(1) solidified solutions of one metal in another; (2) solidified solutions of one metal in an allotropic modification of another metal; (3) solidified solutions of allotropic modifications of both metals. For the first class the curve of electric conductivity is a straight line; for the second, a parabolic curve; for the third, a bent line. Mr. Roberts found that the balance gave the characteristic curve for the first class with an alloy of lead and tin, and for the second with an alloy of gold and silver. With a copper-tin alloy, which is a good example of the third class, he found the curve given by the balance to be intermediate between Alfred Risch's curve of density and Mathiessen's curve of conductivity, and considers that the balance is influenced by the density as well as the conductivity of the metal interposed.

ENGINEERING INVENTIONS.

Mr. Thomas L. Lee, of Paducah, Ky., has invented an improvement in chain propellers, which consists in the combination, with an endless chain, of the paddles, each of which is formed of two right-angular plates placed togetber and secured by bolts passing through their horizontal or base flanges.

Mr. Benjamin S. Benson, of Baltimore, Md., has patented a traction engine and steam plow combined. It is designed mainly to move backward and forward without turning around, but is also provided with means for turning when necessary. This invention cannot be properly described without an engraving.

Mr. James T. Bryant, of Richmond, Va., has invented an improved feed water cleaner, which consists in a strainer case having an inlet and outlet orifice, a vertical chamber containing a strainer of substantially the same diameter as said inlet and outlet orifices, and interposed between the same, in combination with a discharge valve, located below the strainer, and an independent pipe communicating with the space above the strainer.

An improved link motion for steam engines, so constructed that the motion may be readily reversed, and the throw of the valves may be easily regulated to cut off steam at any desired point of the stroke, has been patented by Mr. Daniel S. Stombs, of Stillwater, Minn.

Mr. William P. Lewis, of Oroville, Cal., has patented an improved pneumatic dredging apparatus for clearing out rivers and harbors, and for mining and other purposes. It consists in raising the solid matter by creating a vacuum in the tube, and expelling it from the vacuum chamber by the assistance of the direct action of steam.

An improvement in treenails for ships, etc., has been patented by Mr. Thomas W. Kirby, of Grand Haven, Mich. This invention relates to an improvement in fastening together the strakes of the ship's ceiling, and the fastening of the ceiling to the ship's timbers; the object is to bind the strakes together in a solid ceiling, and thus strengthen the sides of the vessel.

Mr. Henry A. Norton, of Ward City, Nev., has patented an improvement in that class of railroad switches in which the switch rails are actuated by a moving train or devices carried by the locomotive; and it consists in the construction and combination of parts, which cannot be fully described without an engraving.

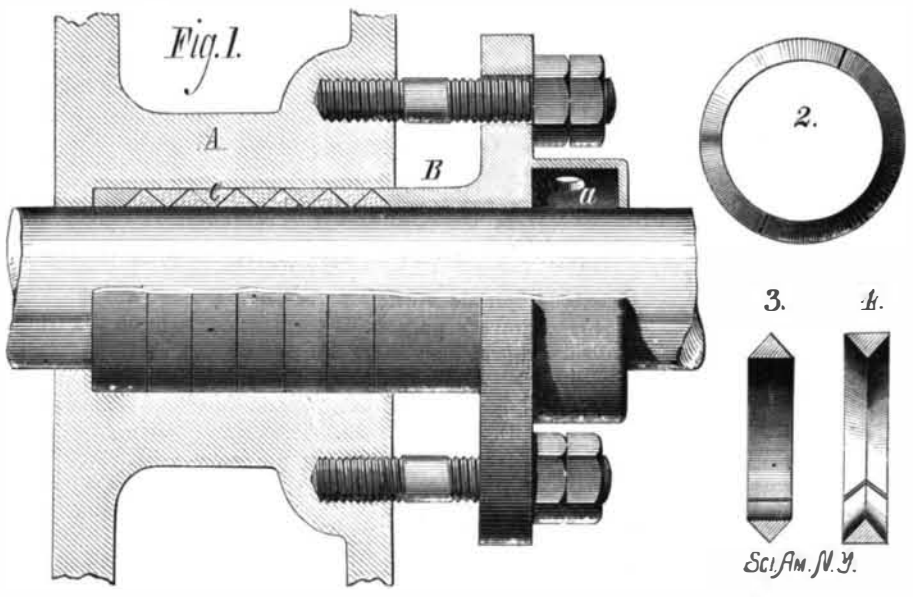
Messrs. Emory D. Toops and Joseph Braddock, of Waverly, Ohio, have patented an improved ditching machine, by which the soil slice is divided into two equal parts by the central cutter of the ditching wheel, and carried up and removed from the channels of the latter by the spirally curved wing or clearer, and by it delivered upon a traveling carrier, which consists of an endless belt passing around pulleys or drums, forming the bottom of a trough which projects laterally from the machine.

An improvement in steam engines has been patented by Mr. Henry A. Walker, of Charlotte, N. C. The object of this invention is to provide an improved piston connection with the driving wheel shaft of an engine and cylinders open at the ends, through which the piston rod passes, so that no stuffing boxes will be required, and the loss of power by friction be consequently reduced.

Mr. Oliver W. Barnes, of Fishkill, N. Y., has devised an improvement in elevated railways. The invention consists of a compound girder that is made of different superposed sections of wood, with intermediate layers of elastic material, the sections being firmly bolted together.

A NEW PISTON ROD PACKING.

We illustrate herewith a novel piston rod packing recently patented by Mr. John Hewitt, of 1323 S. Jefferson avenue, St. Louis, Mo. The invention consists, essentially, of a series of beveled rings placed in the stuffing box and retained by the gland, the rings being beveled on opposite sides. In Fig. 1, in the engraving, the stuffing box is shown in section, and the gland and packing rings are broken away to show their form more clearly. Fig. 2 shows the face of one of the rings, and Figs. 3 and 4 are diametrical sections of internally and externally beveled rings.



HEWITT'S PISTON ROD PACKING.

The stuffing box, A, is of the usual form, and the gland, B, does not differ materially from those in common use. Its inner edge that comes against the packing is beveled, and it is provided with an oil chamber, *a*. The packing, C, consists of a series of soft metal rings which are triangular in cross section, as shown in Figs. 3 and 4. One half of the rings are beveled upon the inside, the other half upon the outside. These rings alternate in position, as shown in Fig. 1. When the gland is forced against the packing thus arranged, the rings that are beveled on the outside are forced against the piston rod, while the rings that are beveled on the inside are forced against the sides of the stuffing box. In this manner the joint between the rod and the packing and between the packing and stuffing box is made perfectly steam tight. We are informed that this packing will wear a long time without adjusting the gland, and that the wear of the piston rod is less than with other kinds of packing. The oil chamber, *a*, is filled with cotton waste for the purpose of feeding oil to the piston rod.

St. Petersburg as a Seaport.

The canal from Cronstadt to St. Petersburg is progressing so rapidly that Admiral Possiett, who directs the work, assures the Russian Government that in a year's time vessels of small size will be able to pass from the sea to the Neva, and that in the summer of 1881 the canal, the depth of which is fixed at 20 feet, will have been excavated to the extent of 16 feet, enabling a goodly sized craft to reach the capital.