

Casamajor has, says *Les Mondes*, resumed the study of the question and adopted the views of Romieu. He instances the following crucial experiment: At the same time that the bits of camphor are thrown upon the water insert a glass rod which has been rubbed with flannel; the motion immediately stops. If the electricity is removed from the rod by rubbing it with tinfoil, it loses its power of checking the eddies.

**A NEW DEVICE FOR PREVENTING JOURNALS FROM HEATING.**

It frequently happens that in spite of any amount of precaution the journals of machinery will heat and cause trouble and delay and work injury to the bearings. In many cases the difficulty may be overcome by the reconstruction of the entire machine, but this is expensive and inconvenient. The invention of Mr. James Dempsey, of Lewiston, Me., which is shown in the annexed engraving, is intended to obviate this difficulty by conducting away and dissipating the heat by means of metallic conductors, exposing a large surface to the air. Three forms of the device, all based on the same principle, are shown in the engraving. That shown in Fig. 1 consists of a copper collar fitted closely to the shaft near the bearing, and provided with a number of radial pins, around which copper wire is wound or woven so as to present a large radiating surface to the surrounding air. The temperature of the shaft can never greatly exceed that of the collar clamped upon it, and the temperature of the collar cannot become much higher than the air in which the pins and surrounding wires revolve.

In the form shown in Fig. 2, spiral copper wires are inserted in the collar to conduct away and dissipate the heat; and in the form shown in Fig. 3, metallic disks are employed as radiators instead of wires. There are, in fact, many forms in which the device may be constructed, and, as will be necessary, modify the apparatus for different applications, the inventor does not limit himself to any particular form. The device is applicable to the bearings of shafting, to car axles, to the shafts of calender rolls, and other journals liable to heating. The inventor says that in actual use it has proved very efficient.

**NOVEL STEAM GENERATOR.**

We give herewith an engraving of a steam generator recently patented by Mr. Charles Ward, of Charleston, W. Va., and lately tested both as to efficiency and economy on the experimental stern-wheel steamer Wild Goose, plying on the Kanawha river. We understand that the boiler easily evaporates 85 cubic feet of water per hour, with a natural draught, and supplies steam at 190 lb. pressure to an engine having a 9 3/4 inch cylinder and 3 foot stroke. The boiler occupies a space 7x8 feet on the deck of the boat, is 8 feet high, and has 28 square feet of grate surface; the smoke stack is 30 inches in diameter, and the weight of the boiler is only one-fourth that of flue boilers of the same capacity. Its construction is such that a perfect and rapid circulation of water is secured. The inventor claims that the effect secured in rotating boilers is secured in this without mechanical contrivances.

The Wild Goose is running daily, and is considered a perfect success by her projectors. The boiler has been twice inspected by the U. S. Steamboat Inspectors, and is allowed to carry 193 lb. per square inch. The boiler consists of 4 piles of 20 circular 2-inch iron tubes, the coils having respectively a diameter of 2, 3, 4, and 5 feet, all having perfect connection with each other, and by their arrangement securing compactness, lightness, a maximum of heating surface with a minimum of fuel, and practically absolute freedom from danger of explosion.

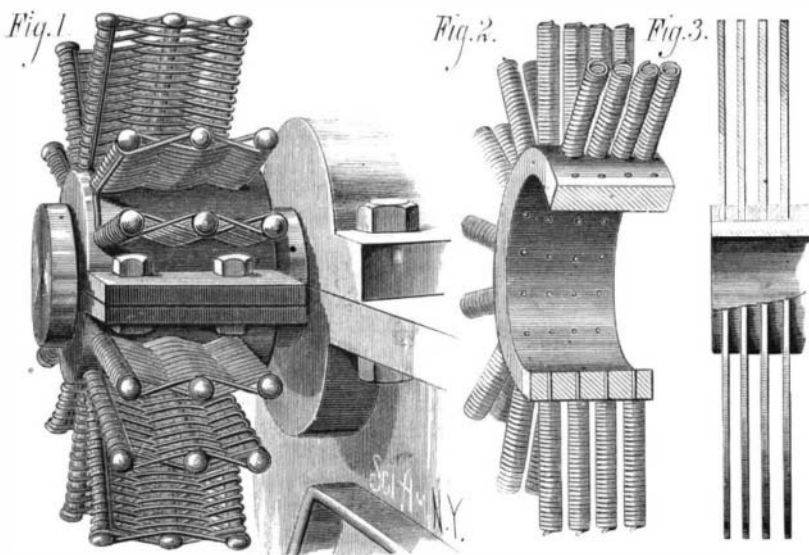
Our engraving represents a boiler having only two sets of curved tubes instead of four, but otherwise the same as that used on the Wild Goose. The connected series of curved pipes, A, are concentrically arranged and are inclosed by a concentric iron casing, D, having a firebrick lining. The inner series of pipes surrounds a vertical cylinder having a firebrick facing. The curved tubes are inclined and connected with vertical stand pipes, c c', which are located on opposite sides of the boiler in line with the division wall of the fire box. The curved pipes are inclined, to facilitate the flow of water and steam toward the upper end of the stand pipes.

The flame and products of combustion pass up from each portion of the fire box in the spaces between the pipes, and between the pipes and the outer casing and the central cylinder. These firebrick surfaces reflect the heat upon the curved tubes, and this, together with the direct action of the flame and heat from the fire, insures the rapid generation of steam. The steam and water are separated by the cylinder, C, which is connected at its upper end with the upper ends of the stand pipes, c', and at its lower end with the lower ends of the stand pipes, c. As the steam and

water enter the cylinder, C, through the upper connecting pipes, the water falls while the steam is taken to the engine. A perforated diaphragm is placed across the cylinder just above the upper connecting pipes and below the engine supply pipe, to prevent the water from following the steam.

The water that falls in the cylinder returns to the boiler through the lower connecting pipes.

The stern-wheel steamer Wild Goose, upon which Mr. Ward's boiler is used, is said to be the lightest and fastest boat of its class ever built. It is 110 feet long, 16 feet beam, and 3 feet depth of hold, and draws but 16 inches. The wheel is 13 feet in diameter and 10 feet 6 inches wide. The



**DEMPSEY'S COOLER FOR JOURNALS.**

boat has made 10 miles in 45 minutes, with a current of two miles, and it is claimed that it has no equal in stemming the chutes or rapids on shallow rivers.

**AGRICULTURAL INVENTIONS.**

Mr. Moses N. Ward, of Cedar Rapids, Iowa, has patented a simple but efficient arrangement for operating the dasher of the churn. The invention consists in a short slotted lever and a long vibratory lever connected by a screw in combination with a shaft and dasher.

Mr. Will Adair, of Canmer, Ky., has patented an improved cotton and hay press for baling cotton, hay, etc., or pressing and packing other commodities. The platen is attached to a sliding beam, and the mechanism for actuating it is attached to another sliding beam, which is arranged in alignment with the platen beam, and is allowed to move downward alternately with the platen. The mechanism

twisting it or diminishing the water-way, for which he was awarded a silver medal by the Society of Arts. Hemen hose, woven without seam, was made in Leipsic by one Beck, a lace weaver, in the year 1720. After this it was made by Erke, a linen weaver at Weimar; and at a later period of linen at Dresden, and also at Silesia. The canvas hose, recently introduced and flaunted before the public as something new, has been tried and abandoned 150 years ago. India rubber hose was brought out about the year 1827, by Mr. Thomas Hancock, of Fulham, and is thus the latest invented of any of the principal descriptions of hose that are in extensive use."

**MECHANICAL INVENTIONS.**

An improvement in plates for holding screw-cutting dies has been patented by Mr. Johan G. Geiser, of Fort Clark, Brackettville, Texas. This invention relates to hand plates for holding screw-cutting taps and dies. It consists in certain novel features by which screw threads may be more conveniently cut than heretofore, and whereby left hand taps may be formed from blanks by right hand screw-cutting devices.

Mr. Aaron T. Hammer, of Sedan, Kan., has patented an improved sewing machine motor, which consists in the combination of devices by which the vertical motion of a platform is converted into rotary motion and transmitted to the band wheel when the platform moves down.

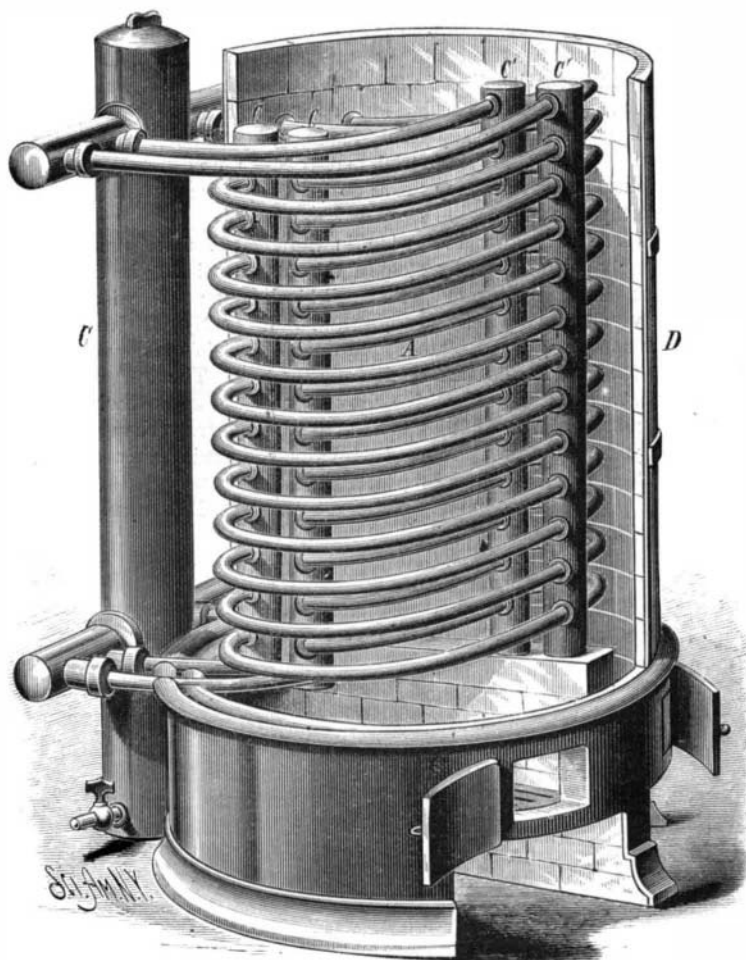
An improvement in dumping wagons has been patented by Miss Annie McFarlane, of San Bernardino, Cal. The object of the invention is to provide a cheap, simple, and convenient dumping cart or barrow that will be especially serviceable in mines.

Mr. Benjamin F. Walters, of Norfolk, Va., has invented an improved machine for removing the stems, particles of dirt, and other adhering impurities from peanuts, and for polishing and assorting them for the market; and it consists in a peculiar arrangement of a polishing brush, and in means for rendering a picking apron detachable from the discharge end of the separator.

Mr. Daniel M. Holmes, of Arlington, N. J., has invented an improvement in the construction of the cake machines for which letters patent, Nos. 174,244 and 188,366, were granted, February 29, 1876, and March 13, 1877, respectively, to the same inventor. The object of this invention is to make the machines more convenient in use and more reliable and effective in operation.

Mr. Jackson M. Rose, of Abingdon, Va., has patented an improvement in the class of beds or bodies of farm wagons which are made in sections to adapt them for extension longitudinally.

Mr. Frank W. Devine, of Carrollton, Mo., has patented an improved chain pump and curb, which consists in constructing the curb or casing above the ground in a portable shape, and in combining the suspended chain with a pipe or tube terminating at one end in a discharge spout and at the other end in a bent neck having a funnel-shaped mouth, the bend being made larger than



**WARD'S STEAM GENERATOR.**

consists of a train of gears and an involute wheel or eccentric, which is operated thereby, and acts intermittently on the head of the platen beam or stem to force the follower downward.