

**The Electric Light.**

Mr. W. H. Preece, the eminent electrician, recently delivered, at the Albert Hall, London, a lecture on the Exhibition of Electric Lighting Apparatus. The Prince of Wales, the Duke of Edinburgh, and a large assembly of ladies and gentlemen were present. The Werdermann light was one of the first shown, and while it lasted, was both bright and steady. Much attention was also excited by the light produced by iridium rendered incandescent by electricity, and much satisfaction was expressed at its extreme brightness, purity, and steadiness. The Lontin light also made a brilliant show, and the Rapiëff was greatly admired on account of its steadiness. Then came the turn of the so-called "candles," constructed on the systems of Jablockhoff and Wilde. The former of these, ranged round the upper corridor, for an instant shone brightly, but afterward gave evidence of capriciousness. On the other hand, the Wilde lamps, from their being close together instead of distributed over a wide circuit, or from some other cause, burned very steadily and well. Mr. Preece then introduced the audience to the "holophote," a powerful lamp for "illuminating the depths of the sea," about to be introduced into the ports at Spithead, with a view to testing their value in detecting the advance of an enemy's torpedo. He next referred to the advantage of the "arc" over the "incandescent" system in economy of power, and the strength of the incandescent lamps in their great steadiness and durability. The Wallace-Farmer lamp was then tried, and with very satisfactory results; and the eyes of the audience were next directed upward toward the great Siemens light, or rather chandelier, hanging from the inside of the dome, and which made a noise far less agreeable to the ears than the light was to the eyes.

Mr. Preece dwelt upon the many short-comings of the electric light as at present produced—the noise, the flickering, the deep shadows, and the whiteness of a light which sets all calculations based upon the warm yellow of gaslight at a defiance. On the other hand may be set the absence of smoke and the purification instead of poisoning of the air in large buildings.

**A NEW STEAM HAMMER.**

The accompanying engraving illustrates an application of Mr. Wadsworth's steam controlling valve to a steam hammer having a rotating anvil, the valve and the anvil block being both under control of the same lever.

The valve, being substantially the same as that described in connection with the steering apparatus patented by the same inventor, and illustrated on page 191 of current volume of the SCIENTIFIC AMERICAN, will not be described in detail in this connection. It is perhaps enough to state that it is capable of perfectly controlling the admission of steam to opposite ends of the cylinder, so that a blow of any desired strength may be given.

The value of this valve as applied to the working of a steam hammer lies in the facility with which the ponderous machine may be controlled, and the exemption from the possibility of accidents, such as the striking of the piston on the cylinder head, in case of the moving of the anvil from below the hammer, the valve being so contrived as to admit steam at the proper point in the stroke to cushion the piston.

The lever, A, of the controlling valve is moved through the medium of the rod, B, bill crank lever, C, and rod, D, by the lever, E, which is fulcrumed in a ball and socket joint, and is capable of universal motion. The lower end of this lever extends through two slotted and pivoted sectors below the floor, which are arranged at right angles to each other, and are connected one with the controlling valve, and the other with the mechanism by which the anvil is turned. This construction admits of controlling all of the movements of the machine by a single lever. Moving the lever to the right or left effects the steam supply, and moving it forward or backward sets in operation the mechanism which turns the anvil. The anvil, as will be observed, is made convex on one of its sides; it has also a rounded corner and a square corner, all of which are found very convenient in forging irregular work.

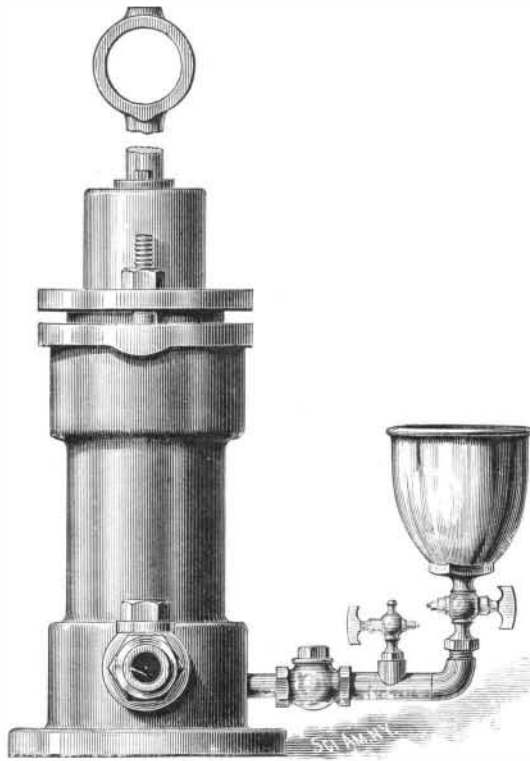
Although this machine is intended for bending ships' ribs and performing other similar operations, the details of some of the parts by which this kind of work is done are omitted for the sake of giving a clearer idea of the other parts.

The ingenious valve used in this hammer seems as well adapted to one of its applications as another, performing its functions easily and with precision, whether used in the steering apparatus previously described or in the hammer shown

in the engraving. Further particulars relating to this invention may be obtained by addressing Mr. Herbert Wadsworth, Merchants' Bank Building, 28 State street, Boston.

**ATTACHMENT FOR BOILER FEED PUMPS.**

The accompanying engraving shows an improved attachment for boiler feed pumps, for introducing into the boiler

**CLEGG'S FEED PUMP ATTACHMENT.**

along with the feed water any liquid for preventing or removing incrustation or scale, or to prevent foaming. It consists in a short pipe screwed into the lower end of the pump, having at its outer extremity a cup for containing the liquid to be introduced into the boiler. Between the cup and the pump there is a check valve in the pipe, also a stop cock for closing the communication between the cup and pump. Out-

side of the check valve there is a small air cock, which may be used to admit small quantities of air to the pump to act as an air cushion to the plunger to obviate pounding and the consequent wear and tear of the pump.

This invention was recently patented by Mr. Benjamin Clegg, of 526 Richmond street, Philadelphia, Pa., from whom further information may be obtained.

**RECENT AMERICAN PATENTS.**

An improved waste valve, which is applicable to either wooden or iron pumps, has been patented by Mr. Perry A. Peer, of Comstock, Mich. It consists of a pivoted cover arranged to slide over an aperture in a base plate that is secured to the pump.

Mr. Edwin A. Benson, of Detroit, Mich., has patented an improvement in hydrants, which provides for removing, replacing, repairing, renewing, or otherwise manipulating the ground faucet or valve of a hydrant without removing or digging around the box which contains it.

An improvement in car brakes has been patented by Mr. Nathan Webb, of Sacramento, Cal. The object of the invention is to provide a simple car-connecting brake clamp that can be used as a supplement to any other brake connecting clamp.

A hand car, adapted for running upon a track and dumping its load, and which may be used for loading wood or coal upon locomotive tenders, and for other similar purposes, has been patented by Mr. Stephen Johnson, of Huntsville, Texas.

An improved steam rock drill, in which the valve is shifted by the piston before it has completed its stroke, so that the piston will be cushioned, has been patented by Mr. Thomas J. Murphy, of New York city.

An improved weather strip, patented by Mr. Lawrence Scully, of Meridian, Miss., consists in a strip of rubber fitted to a groove in the bottom of the door, so that both of the edges of the strip project below the door and act as fenders against wind and rain.

Mr. William J. Orr, of Rock Hill, S. C., has patented an improved dust-excluding and car-ventilating window, which consists of a series of vertical parallel pivoted transparent slats between which the air passes freely, and which may be so adjusted that when the train is in motion a draught will remove the air from the car.

An improvement in the class of burners used for burning gasoline, naphtha, etc., has been patented by Mr. William H. Russell, of Sedalia, Mo. It consists in a burner tube having a cup near its upper end, a base piece at its lower end, and a hollow wire wound around the upper end of the burner and concealed in the cup with its ends extending to the base piece, one communicating with the supply pipe and the other with a chamber leading to the burner.

An improvement in passenger registers for cars, omnibuses, etc., has been patented by Mr. S. B. Crane, of Davenport, Iowa. The seat or foot rest is made movable so that when a passenger sits the device closes an electrical circuit which is connected with a recording device.

An improved spark arrester patented by Mr. Allan Talbot, of Richmond, Va., is intended for arresting sparks as they issue from the furnaces of steam boilers, and preventing them from passing into the open air. It consists in a number of inverted hollow truncated cones placed at the bottom and top of the smoke stack.

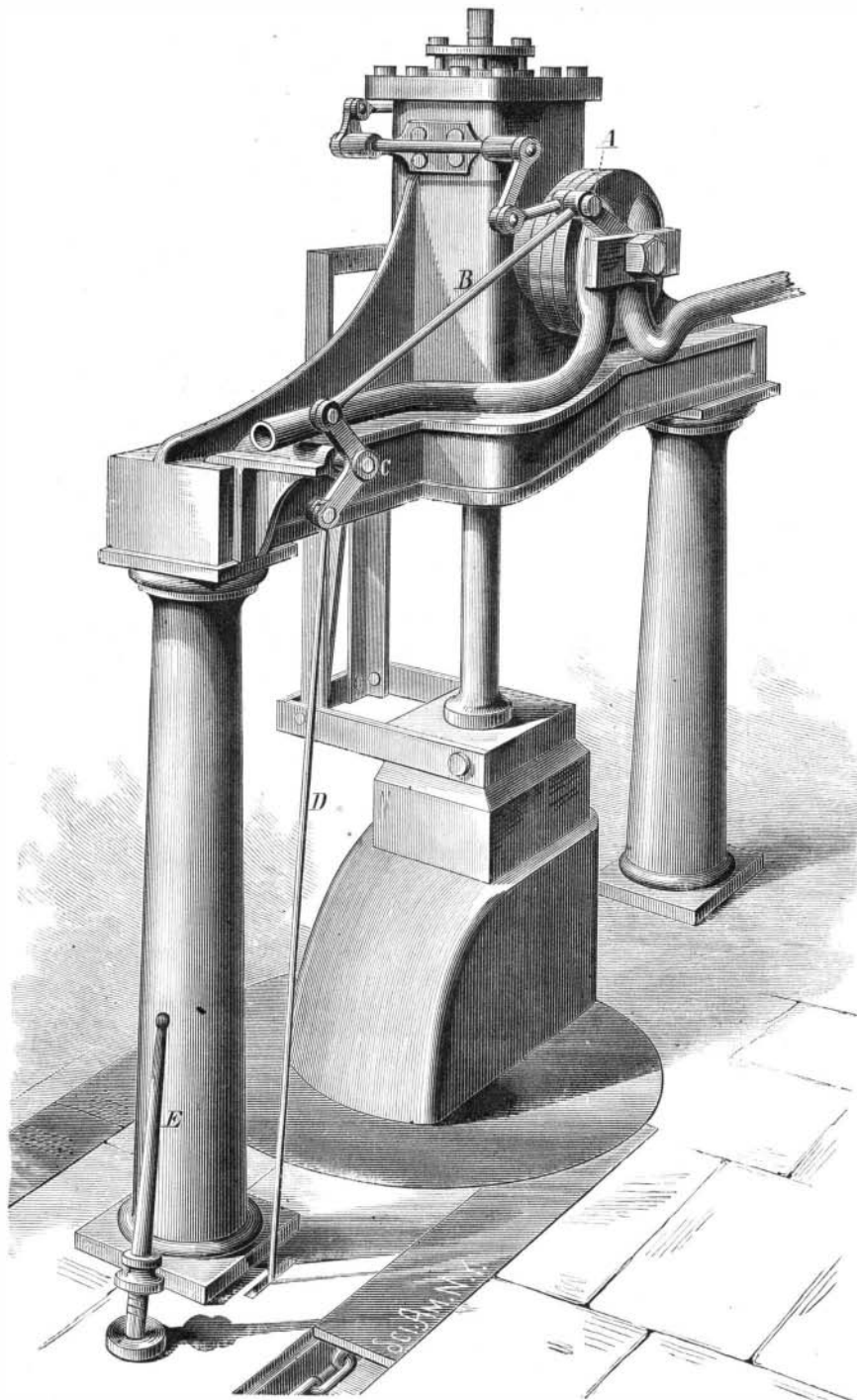
Mr. Martin Rabenau, of Baltimore, Md., has patented an improved apparatus for treating leaf tobacco for developing its flavor, increasing its burning qualities, and darkening its color.

Mr. Thomas H. Locher, of Alburtis, Pa., has patented a chair having a frame made entirely of band iron. The object of the invention is to produce a chair having the greatest strength and rigidity with the employment of a small amount of material.

An improved heat regulator for incubation has been patented by Mr. Frederick Meyer, of Doylestown, Pa. It consists in a lever carrying a tube with reservoirs at each end containing ether and mercury; when the heat expands the ether the mercury is forced to one end of the lever, causing it to tilt and operate the damper.

An improved pole attachment for vehicles has been patented by Mr. James L. Dykes, of Demopolis, Ala. The object of this invention is to furnish combined thills and tongue which may be readily adjusted as thills or tongue.

Mr. George W. Williams, of San Diego, Cal., has patented a simple and efficient trap for catching animals. It consists of a toothed ring secured to one end of a bent spring, the other end of the spring being provided with teeth and held down by a tripping device.

**WADSWORTH'S STEAM HAMMER.**