ENVELOPE ADDRESSING MACHINE.

One of the most important requisites of business correspondence is that the envelopes should be addressed in a manner not only providing every possible safeguard against misdirection, but also against being missent by the rapidly working postal clerks who have not time to carefully decipher obscure superscriptions, but must throw each letter to its respective pouch by the impression formed on the first glance.

The R. H. Smith Mfg. Co., of Springfield, Mass., who make a specialty of everything in the rubber stamp

ENVELOPE ADDRESSING MACHINE.

line, have recently put on the market a new device, as shown in above engraving. It is called Smith's Patent Lever Self-inker No. 3, and is, in fact, a miniature printing press of simple but effective construction, especially designed for printing the addresses on envelopes, postal cards, and shipping tags, which it does rapidly and in a most perfect manner, using their well known metal-bodied rubber-faced type, a font of which is furnished with each press, and the office boy can in his leisure moments set up the addresses and print a complement of envelopes for each of the firm's regular correspondents, returning them to the envelope boxes in which they came, simply taking an imprint on a slip of paper and folding in with imprint exposed to index them, leaving in convenient form to use from and enabling the boy to see and replenish any kinds running low.

CARLYLE described his indigestion "like a rat gnawing at the pit of his stomach," and said his best physician was a horse. Some one has jocosely remarked the outside of a horse was the best thing for the inside of a man. Calvin was a sufferer from indigestion, so was Emerson, so was Cowper, so was Darwin, so indeed were many of the great men of modern times. An old physician used to say: "Tell me how a man digests, and I will tell you how he thinks."

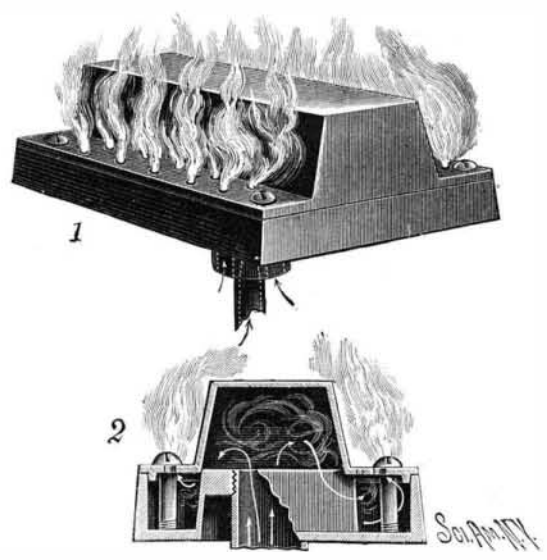
A GAS BURNER FOR HEATING PURPOSES.

The illustration herewith represents a gas burner which has been patented by Mr. Phillip Lesser, of Ridgway, Pa., Fig. 1 giving a general view of its appearance, and Fig. 2 showing a broken sectional view. The base casting is made with a central elevated platform and a narrow channel or chamber surrounding the whole interior of the burner. Upon the upper edges of the outer walls of the base casting is bolted a cap plate, the bolts being passed through longitudinal flanges covering the exterior channel of the base, while the central portion of the cap plate consists of a longitudinal elevated chamber, the side flanges having numerous perforations for the escape and burning of the gas at the sides of the central elevated chamber. The gas is admitted to this central chamber above the top of the elevated portion of the base through an opening in which a gas pipe may be fitted, the gas becoming then heated, and expanded and mixed with air, when it passes downward and enters the surrounding channels formed in the base, as shown by the arrows, and in this heated and expanded state issues from the burner perforations, producing intense heat.

THE VYRNWY LAKE OF THE LIVERPOOL WATER WORKS.

One of the grandest engineering works of modern times, undertaken by the Corporation of Liverpool to supply that city and its suburbs with abundance of the purest water from a sequestered valley high up among the mountains of North Wales, is now approaching its successful consummation. It is the more interesting, because it deals with the primeval features of Nature by a process of artificial restoration, creating once more a lake, which will be the largest in Wales, and not the least beautiful, where Nature, by her own engineering, toward the close of the Great Ice Age, scooped a vast basin in the Silurian rock and made a lake, which afterward, by the rapid disintegration of the rocks, under more severe extremes of temperature than are now experienced, became silted up, and gave place to an alluvial plain cultivated and inhabited by a few villagers. It is now again converted into a greater lake, to be used as a reservoir of water for the supply of a million people dwelling seventy miles away. The population supplied by the Liverpool water works is already 806,000, and will much exceed 1,000,000 soon after the Vyrnwy is made available. Across the intervening country of mountain, woodland, and lowland pastures, the Vyrnwy aqueduct is now completed. "It will be," says Mr. G. F. Deacon, the engineer-in-chief of the works, in his report on the subject to the Corporation of Liverpool, "the longest yet constructed. To the distributing reservoirs at Prescot its length exceeds 68, and to the Town Hall at Liverpool 77 miles—32 miles longer than the famous Claudian aqueduct, and 15 miles longer than the course of the Anio Novus, which, for the last six miles toward Rome, was carried by the same arches as the Aqua Claudia."

The sources of the Vyrnwy are six main streams and many smaller rivulets, rising in mountain moorlands from about 2,200 feet to 1,300 feet above the sea level,

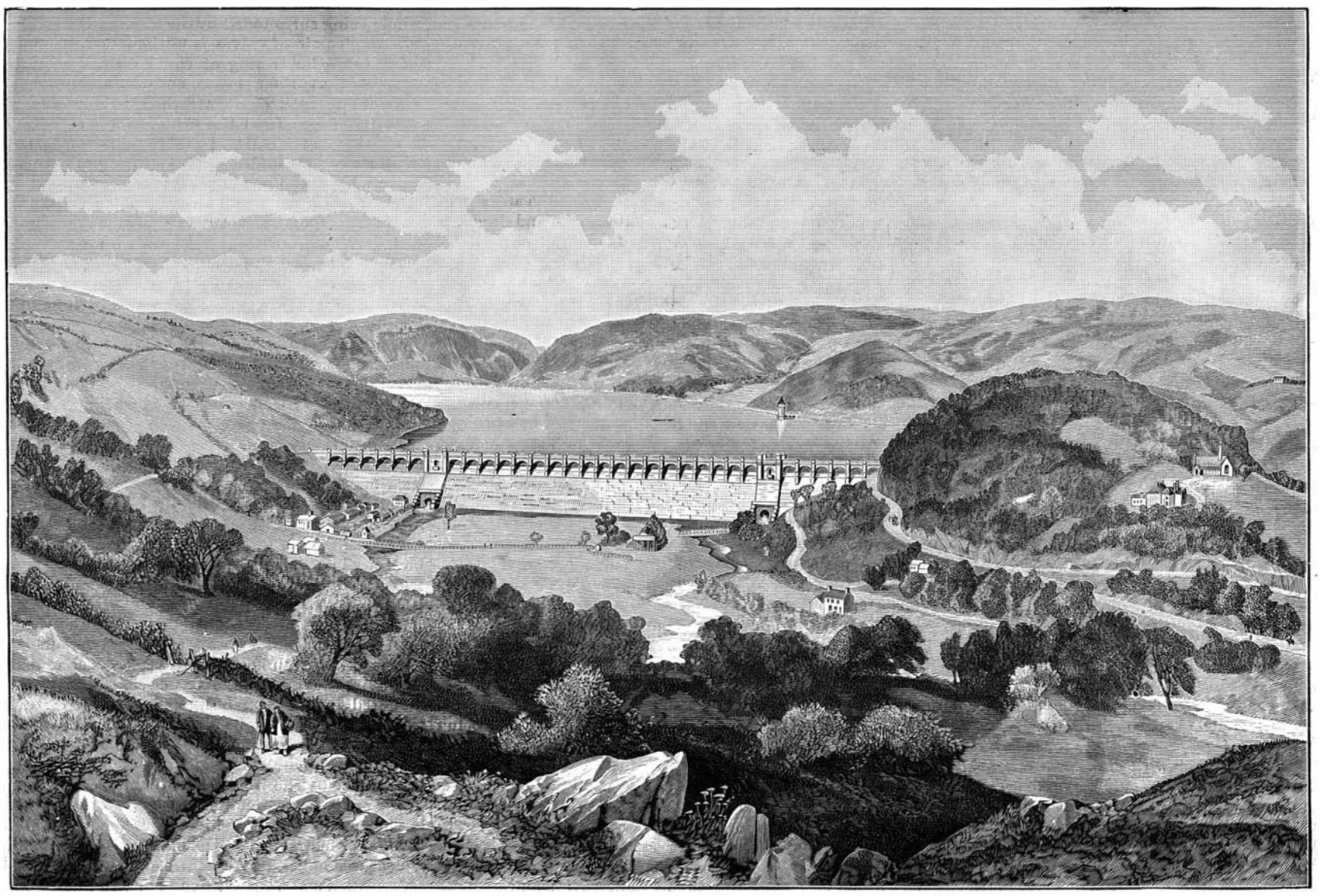


LESSER'S GAS BURNER FOR HEATING PURPOSES.

and pouring directly into the natural rock basin which has been alluded to. This upland recess, with lofty mountains at its head and hills along both sides, extends nearly five miles in length, and its level bottom is about half a mile wide. It was undoubtedly the bed of a lake, cut out by a glacier, like most of the lakes of Switzerland and of Scotland. The natural bar of harder rock at the lower end of this valley, here a narrow gorge, the lower lip of the ancient lake basin, remains considerably higher than the rock stratum below the alluvial and peat deposit in the valley behind it. Mr. Deacon has been able to use the bar of rock as the foundation of his immense dam of solid masonry closing the lower end of the Welsh valley.

The construction of this dam, which is, we believe, unequaled in some features by any other work of its kind in the world, is worthy of special description. Mr. G. F. Deacon, who succeeded the late Mr. Thomas Duncan as water works engineer to the Liverpool Corporation in 1871, recommended the formation, by damming across the valley, of a lake nearly 5 miles long, draining an aggregate area of 23,200 acres. The level of the lake would be about 817 feet above sea level, and he proposed a course for an aqueduct to Liverpool.

On July 14, 1881, in the presence of an influential company, Earl Powis laid the foundation stone of the



THE GREAT DAM OF VYRNWY LAKE—LIVERPOOL WATER WORKS.