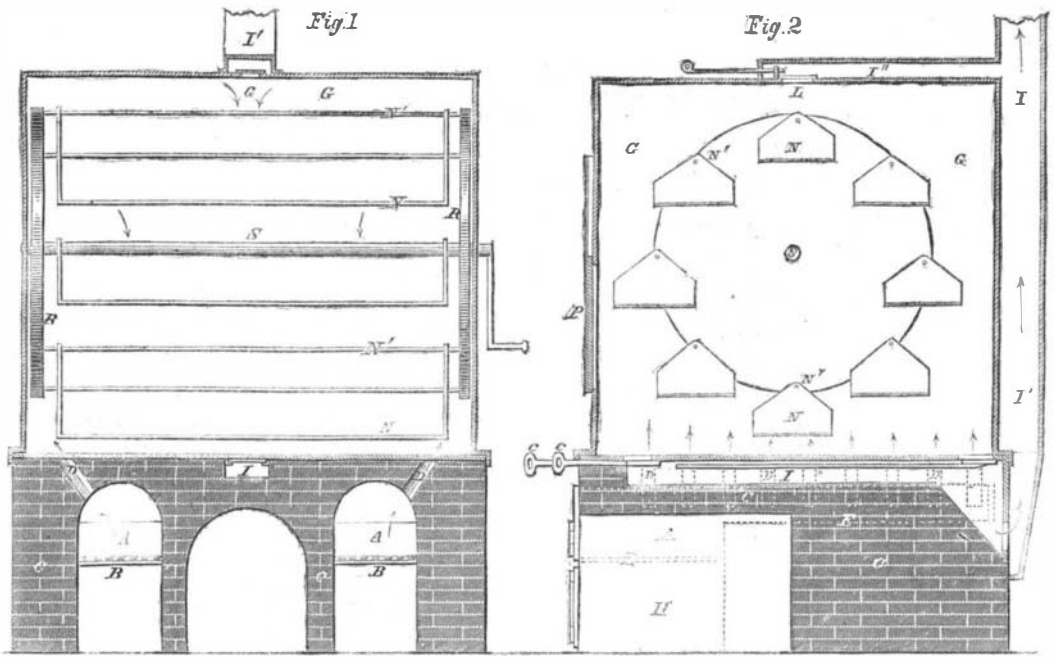
MACKENZIE'S IMPROVEMENT IN BAKING OVENS.

Not long since, all bakers' ovens were heated with wood, but with such fuel constant baking was impossible, because a new fire had to be made for every new batch of bread to be baked. Such ovens having an interior fire cannot be heated with Liverpool or cannel coal, owing to so much smoke being created in the combustion, but with anthracite we have an admirable smokeless fuel, which will permit of constant firing and baking; and the invention illustrated by the accompanying engravings relates to heating bakers' ovens in which such coal is employed. Fig. 1 represents a vertical transverse section of the oven taken through the fire-places, ash boxes and flues, and it shows the direction taken by the heated currents on leaving the fire-places. Fig. 2 is a vertical longitudinal section taken through the oven, in which the central hot-air flue is shown communicating with the main escape pipe, which has valves or dampers in the front and rear. The dotted lines represent an outline of the grate, fire-bridge and hot-air escape passages.



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A represents the furnace or fire-place, one or two of which may be employed according to circumstances; B, are the grate bars, C, the brickwork. The dotted lines, Fig. 2, show how far back this furnace and grate extends. E is a back bed of brickwork; D D, are a series of short flues which lead off from the furnace and the space over the fire-bed, E. They communicate with the oven, G, above the masonary. These flues are the only means of escape for the heat from the furnace, except that which is given out by the radiation from the brickwork above the arch. The heat is conducted off very rapidly by these flues from the furnace, and they diffuse it equally through the oven. H, is a coal bunker between the two furnaces; I, is a horizontal flue extending from the front to the rear of the oven. It communicates with a vertical flue, I′, which extends up in the rear of the oven as shown in Fig. 2. The lower horizontal flue, I, communicates with the oven through holes in the front, in the rear it is closed by valves, K K, which can be operated from the front by means of the damper rods, *c c*. At the end of the flue, I, where the products of combustion escape into I′, it is enlarged into a chamber and bent downward into the form of an inverted cone. The point of communication with the flue, I′, is at the lower part of this chamber. This construction and combination of these two flues produce a very free and a more equable draft than if the lower flue extended horizontally and was of uniform size to the escape flue. The draft through both damper openings, K, is thus rendered uniform, the baking operation is improved and a saving of fuel is effected. L, is a valvular opening at the center of the top, it communicates with the main flue, I′, by the one, I″. C′ is a plate of metal covering the brickwork.

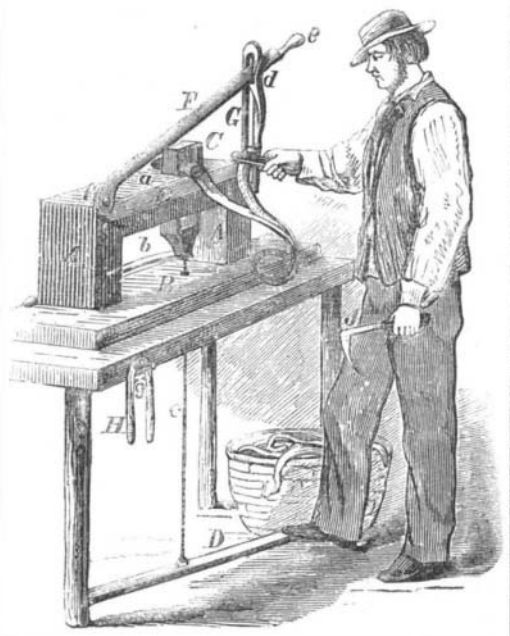
A suitable number of gravitating iron pans, N, are arranged in the oven, being hung on pins, N′. These pans extend across from the circular revolving plates, R R, as shown in Fig. 2. They form a revolving frame on the shaft, S, in the oven, and the pans always swing round with their bottoms downward. The frame is rotated from the outside by the crank handle. The bread is placed in the pans, N, and taken out through the door, P. In this manner all the bread is baked at a uniform heat, as one pan cannot receive more heat than another.

When the fires are well lighted, the front damper or the rear one in the lower flue (or both) may be opened or partially so; when the top one, L, is closed, a downward draft then takes place, the heated air escapes from the flues D, rises to the top of the oven on the sides, then descends in the center to the central flue space and escapes up the main flue. The heated air is thus made to circulate and rotate in the oven so as to diffuse the heat uniformly and rapidly through every part of it, instead of using the heat of radiation as in other coal fire ovens. Direct heat from the furnace is obtained with an economy of fuel, and all the baking is effected with great precision, as the draft—and consequently the heat—is under perfect control.

A patent was granted for this improvement in ovens to Duncan Mackenzie, of Brooklyn, N. Y., through the Scientific American Patent Agency, on the first day of May, 1860, and further information may by obtained by letter addressed to him at 180 Livingston-street, or to Butler, Hosford & Co., of No. 30 Broadway, this city.

PATENT MODE OF SKINNING EELS.

It is an old saying that after live eels have undergone the process of being skinned a number of times, they become so accustomed to it as to be totally indifferent to the operation. But, unfortunately, experience shows that they have not yet arrived at this desirable state of submission, and it is therefore, as every fisherman knows,



necessary to use some means to induce these "slippery customers" to remain quiet while being divested of their external covering. Heretofore, this result has been attained by throwing them violently on the ground, or by bringing their heads in forcible contact with some convenient hard object, and then taking off their skin, by hand, before they recover from the effects of the concussion. But the enlightened genius of this age has produced a machine whereby this process is performed in a manner much more preferable (to the *operator*, not to the eels) than the one just mentioned. A perspective view of this novel invention is shown in the annexed engraving.

The frame of the machine consists of two uprights, A A, attached to a suitable base, B, and connected at their upper ends by a cross-tie or traverse bar, *a*, through which passes a vertical metallic frame, C, sliding freely up and down. In the upper part of this frame two spurs are secured, projecting downward from its upper cross-piece, as shown in the figure. The frame, C, is connected by a cord, *c*, with a treadle, D, underneath the table on which the machine rests. To the frame, C, is also attached the spring, *b*, which has a tendency to elevate it, so as to keep the spurs above the traverse bar, *a*. The leger blade, E, is attached to the traverse bar *a* extending its whole length. The knife, F, is pivoted to one end of the bar, as shown at *f*, and is provided at the opposite end with a handle, *e*. The knife, F, works in a guide, G, attached to the frame, and is held in an elevated position, when not in use, by a spring catch, *d*. The guide, G, is so arranged that the cutting edge of the knife, F, does not pass closely over the edge of the leger blade, but that a small space is allowed tween them.

The operation as follows:—The operator grasps the griper, H—which consists of two jaws, connected at one end by a joint, the inside of each jaw being provided with a spur, as shown at *g*—and by means of it the eel is seized near the head, which is placed on the traverse bar, *a*, and within the frame, C, and by depressing the treadle, the spurs pass through the head of the eel, thus firmly securing it. The operator then opens the whole length of the eel by means of the ripping knife, J. The knife, F, then being depressed, separates the head from the body, with the exception of the skin, which is slipped over by the knife. This effect is owing to the space allowed between the knife, F, and leger blade, E. The operator then seizes the eel with the griper, H, as shown in the engraving, and separates it from the skin which, together with the head, is held fast by the spurs in the frame, C. The treadle is then released and the head and body removed from the machine, when it is in readiness for another eel to be operated upon in the same way.

This device has been practically tested and is found to perform the work in a manner much more expeditious and preferable than when done in the ordinary way; the flesh not being bruised and discolored as is usually the case.

This exceedingly novel and useful arrangement was patented, through the Scientific American Patent Agency, June 29, 1858, to Adam Emeigh, of Jerusalem, L. I.

DEODORIZING THE THAMES.—In 1859, during three months very dry weather, old Father Thames—that once classic stream famous in historic verses of English poets of the last century—became a huge sewer, sending forth foeted odors over all the British metropolis. A report recently presented on the subject contains the statement that £17,700 (about $88,000) worth of deodorizing material was thrown into the Thames during the months of June, July and August. The deodorizing agents employed were chiefly chloride of lime, of which 478 tuns were used, and of chalk lime, 4,280 tuns were used. These were chiefly thrown into the sewers, and while the temperature of the river remained high—from 69 to 74°, the river remained proof against all efforts of deodorization. Great preparations have been made this year to provide a sufficient supply of the perchloride of iron to modify the pungent powers of Father Thames' snuff-box.