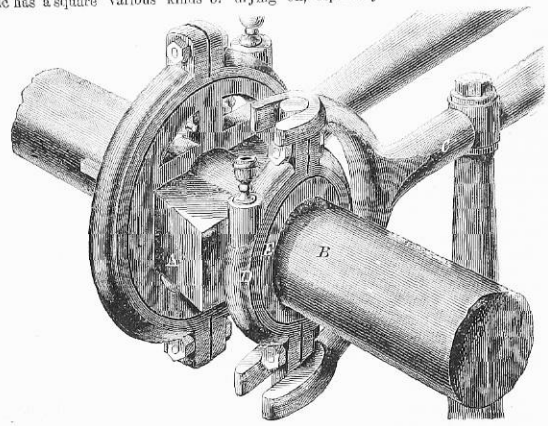
Improved Eccentric.

This is a most ingenious method for reversing and cutting off steam with one eccentric. By it the steam can be cut off at any point of the stroke with a common slide valve and without altering or affecting the lead on the steam or exhaust in any way.

In detail this invention consists of two wedges, A, fitted to the shaft, B. The eccentric has a square slot in it which these wedges completely fill, and they act the same as wedges would work driven by a hand hammer, for by slacking one wedge off, and driving the other in, the throw of the eccentric is changed at will. These wedges are worked in this way by the lever, C, which is attached to the straps, D, embracing a coupling, E, formed on the end of the wedges, so that as these and the coupling revolve together the lever is enabled to shift them without being disturbed itself.

The wedges have a feather or key on the shaft which holds them from slipping. This method of operating an eccentric is applicable to all classes of engines. Any lead required can be got by setting the wheel out of the center parallel with the slot. It is a neat contrivance for the purpose.

It was patented by D. F. Walker, through the Scientific American Patent Agency on March 7, 1865. For further information address him at Clearwater, Minn.

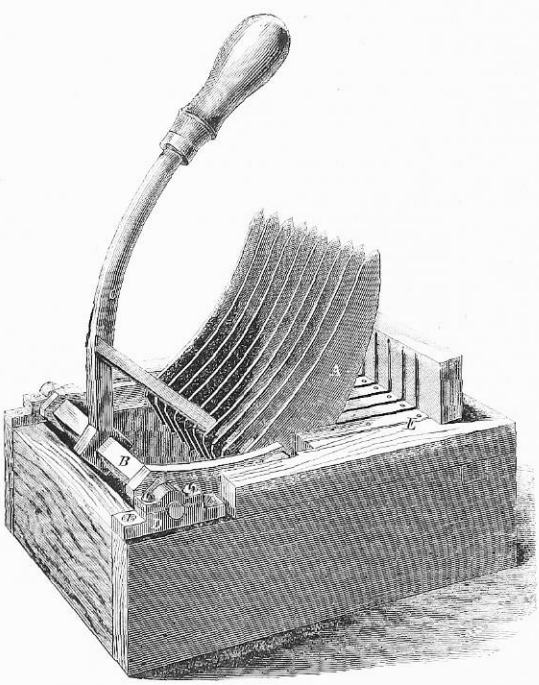


WALKER'S ECCENTRIC.

Improved Bread Slicer.

Stimulated by inquiries for a good bread slicer, inventors have produced several varieties of them, constructed on different principles but tending to the same end—rapid and certain delivery of slices of bread smoothly cut and of equal thickness. It is obvious that a simple machine for this purpose would be very useful in restaurants, hospitals, boarding houses, etc., where large numbers of loaves are cut up in a few minutes.

The engraving published herewith exhibits a very simple device for the purpose above stated. It is nothing more than a set of knives, A, of any required number, fastened to a shaft, B, said shaft being operated by a lever, C. The shaft turns in its bearings, D, and the knives work through slots in the board; it is obvious that by giving motion to the handle the knives will pass through a loaf placed under them. The cut made is a drawing cut which tends to sever the slice smoothly and without crumbling. A patent is ordered to issue on the machine through the Scientific American Patent Agency. For further information address the inventor, S. D. Simmons, San Francisco, Cal.



SIMMONS'S BREAD SLICER

International Iron-clad Show.

The iron-clads belonging to France and England are about to make an amicable tour together for the purpose of exhibiting their sailing qualities and general adaptation to the ends required of them. They are to cruise in the waters adjacent to the British Islands and to France, and will no doubt deport themselves in all ways possible—in storms and calms, in smooth seas and rough—to the end that satisfactory reports may be made to the powers that be of their performances.

To the disinterested and impartial observer on this side the ocean it would not appear that much reliable information could be obtained in this way, and that so far as judging of the offensive or defensive qualities of iron-clad ships, the cruise will be quite useless. We shall hear of extraordinary speed, no doubt, and weatherly qualities, but what avail are these when heavy shot can be sent through one side and out at the other?

Paraffine for Waterproofing.

The materials which in modern times were first employed for water-proofing were beeswax and the various kinds of drying oil, especially linseed oil, which were rendered more siccative by boiling or some other of the processes usually employed for that purpose.

About forty years ago caoutchouc was first successfully used, for rendering fabrics and other materials waterproof, by the late Mr. Chas. Macintosh; and after an interval of about twenty years, gutta percha was first imported into this country, and immediately applied for similar purposes.

In 1832 paraffine was discovered by Reichenbach in the course of his admirable researches on wood and coal tars. He, however, only succeeded in obtaining it in very small quantity, so that for a long time it was only known as a chemical curiosity. It is to Mr. James Young that we are indebted for the production of this material on an industrial scale, by his process which he patented nearly fifteen years ago. About three years since a patent was taken out by Dr. Stenhouse for employing paraffine as a means of rendering leather waterproof, as well as the various textile and felted fabrics; and in August last an additional patent was granted Dr. Stenhouse for an extension of and improvement on the previous one, which consisted chiefly in combining the paraffine with various proportions of drying oil, it having been found that paraffine alone, especially when applied to fabrics, became to a considerable extent detached from the fibre of the cloth after a short time, owing to its great tendency to crystalize. The presence, however, of even a small quantity of drying oil causes the paraffine to adhere much more firmly to the texture of the cloth, from the oil gradually becoming converted into a tenacious resin by absorption of oxygen.

In the application of paraffine for waterproofing purposes, it is first melted together with the requisite quantity of drying oil and cast into blocks. This composition can then be applied to fabrics by rubbing them over with a block of it, either cold or gently warmed, or the mixture may be melted and laid on with a brush, the complete impregnation being effected by subsequently passing it between hot rollers. When this paraffine mixture has been applied to cloth, such as that employed for blinds or tents, it renders it very repellent to water, although still pervious to air.

Cloth paraffined in this manner forms an excellent basis for such articles as capes, tarpaulins, etc., which require to be rendered quite impervious by subsequently coating them with drying oil, the paraffine in a great measure preventing the well known injurious influence of drying oil on the fibre of the cloth. The paraffine mixture can also be very advantageously applied to the various kinds of leather. One of the most convenient ways of effecting this is to coat the skins or manufactured articles, such as boots, shoes, pump-buckets, harness, etc., with the metal composition, and then to gently heat the articles until it is entirely absorbed. When leather is impregnated with the mixture, it is not only rendered perfectly waterproof, but also stronger and more durable. The beneficial effects of this process are peculiarly observable in the case of boots and shoes, which it renders very firm without destroying their elasticity. It therefore not only makes them exceedingly durable, but possesses an advantage over ordinary dubbing in not interfering with the polish of these articles, which, on the whole, it rather improves.

The superiority of paraffine over most other materials for some kinds of waterproofing consists in its comparative cheapness, in being easily applied, and in not materially altering the color of fabrics, which, in the case of light shades and white cloth, is of very considerable importance.

It will be evident from the statements which have just been made, that the employment of paraffine for waterproofing purposes is likely to become very exensive.—*Practical Mechanics' Journal.*

The Paris Society for the Encouragement of National Industry has offered a prize of $300 for an ink which will not corrode steel pens.

A Large Total.—The expenditures of the Government during the past year amount to the enormous sum of $1,200,000,000, or over $3,500,000 per day.

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