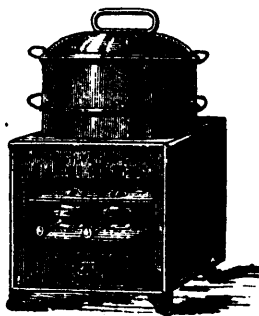
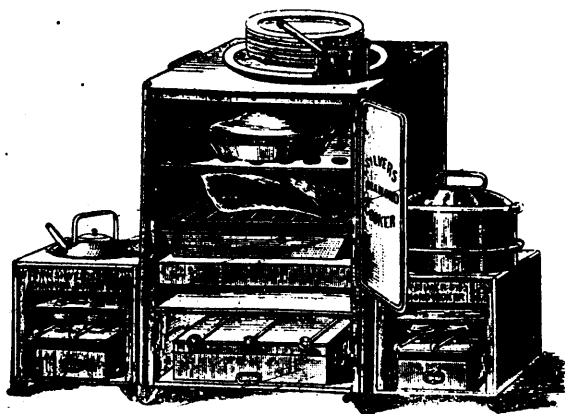


**SILVER'S DIAMOND LIGHT COOKER.**

At this season of the year it is a great comfort and convenience to be able to dispense with large coal fires for cooking, with their concomitants of dust and smoke, constant supervision, and great cost. And yet there are many people who are not aware that this can actually be accomplished at less than half the cost and trouble, by the use of petroleum or common mineral oil, with "Silver's Diamond Light Cooker," manufactured by the Chimneyless Lamp Company, Birmingham. The annexed small illustration shows "Silver's Diamond Boiler," with kettle, a miniature breakfast stove, capable of boiling water, making coffee or tea, cooking chop or rasher, toasting bread, boiling eggs, &c., in a few minutes. This portable apparatus forms an indispensable adjunct to the domestic kit of any man who has to rise betimes and hurry away to catch the early morning train. This stove is made in several sizes, and with boiler and vegetable cooker, to boil water, steam potatoes, &c., and stew or fry. "Silver Diamond Cooker," No. 4, is of larger size, complete with meat dish and grid, kettle,



two steamers, and pan to stew or fry, suitable for cooking dinner or supper for a family. The oven is double cased and is completely separated from the burners, so that all idea of the oil imparting any objectionable flavour to the viands is effectually got rid of. By the arrangement of Silver's patent burners, the uniformity of the heat, and the mode of ventilation render attention to a joint in cooking quite unnecessary. "The Diamond Light Cooker" will roast joints, fowls, &c., equally as well as a coal fire, and bake bread or pastry most perfectly. One great merit of these cookers is that they are ready for cooking as soon as the burners are lighted, and in addition to that they have the advantage of being cheap, clean, and without smoke, smell, or nuisance. These stoves are all black leaded, thus getting rid of the objectionable black varnish so commonly used on articles of this kind. This pattern stove is very suitable for export as it packs in a very small compass, while it is not only valuable as a cooker in summer, but may be utilized as a heating stove in winter. We recently saw a number of these cookers got up to special order by the Chimneyless Lamp Company for shipment to Smyrna, and the high finish of the stoves, no less than their suitability for use in that climate, seemed all that could be desired.

**THE TOPOPHONE.**

The aim of the topophone, which was invented and patented by Professor A. M. Mayer, last winter, is to enable the user to determine quickly and surely the exact direction and position of any source of sound. Our figure shows a portable style of the instrument; for use on ship-board it would probably form one of the fixtures of the pilot-house or the "bridge," or both. In most cases arising in sailing through fogs, it would be enough for the captain or pilot to be sure of the exact direction of a fog-horn, whistling buoy, or steam whistle; and for this a single aural observation suffices. Every one has twirled a tuning fork before the ear, and listened to the alternate swelling and sinking of the sound, as the sound-waves from one line re-inforce or counteract those from the other line. The topophone is based upon the same fact, namely, the power of any sound to augment or destroy another of the same pitch, when ranged so that the sound-waves of each act in unison with or in opposition to those of the other.



Briefly described, the topophone consists of two resonators (or any other sound-receivers) attached to a connecting bar or shoulder rest. The sound receivers are joint by flexible tubes, which unite for part of their length, and from which ear tubes proceed. One tube, it will be observed, carries a telescopic device by which its length can be varied. When the two resonators face the direction whence a sound comes, so as to receive simultaneously the same sonorous impulse, and are joined by tubes of equal length, the sound-waves received from them will necessarily re-enforce each other, and the sound will be augmented. If, on the contrary, the resonators being in the same position as regards the source of sound, the resonator tubes differ in length by half the wave-length of the sound, the impulse from the one neutralises that from the other, and the sound is obliterated.

Accordingly, in determining the direction of the source of any sound with this instrument, the observer guided by the varying intensity of the sound transmitted by the resonators, turns until their openings touch the same sound-waves simultaneously, which position he recognises either by the great augmentation of the sound (when the tube lengths are equal), or by the cessation of sound, when the tubes vary so that the interference of the sound-waves is perfect. In either case the determination of the direction of the source of the sound is almost instantaneous, and the two methods may be successfully employed as checks upon each other's report. It is obvious that with such a help the pilot in a fog need never be long in doubt as to the direction of a warning signal; and if need be, he can without much delay, by successive observations and a little calculation, determine approximately at least, the distance of the sounding body.

**IMITATION INLAYING.**—For an oak panel with a design inlaid with walnut, grain the panel wholly in oil. This is not a bad ground for walnut. When the oak is dry grain the whole of the panel walnut in distemper. Have a paper with the design drawn thereon, and rub the back with whiting; place it on the panel, and with a pointed stick trace the design. Next, with a brush and quick varnish, trace the whole of it. When the varnish is dry, with a sponge and water remove the distemper, where the varnish has not touched. This, if well executed, presents a good imitation of inlaid wood. Marbles are executed in a similar manner.