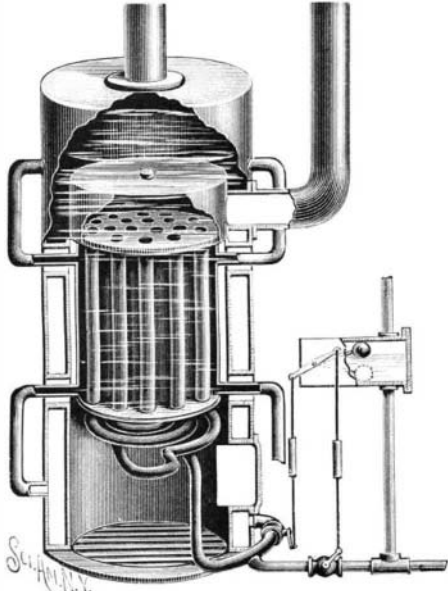


AN IMPROVED BOILER FOR HEATING PURPOSES.

This boiler combines to a certain extent the features of a tubular and a coil boiler, giving a very large heating surface, and is designed to promote rapid circulation while being operated with great economy of fuel. It has been patented by Mr. Albert Jaeger, of No. 105 Bleecker Street, Jersey City Heights, Jersey City, N. J. When the boiler is used to make steam, the compartment at the top forms the steam space. There are vertical flues through the central water space, and this portion of the boiler is encircled by a flue just below the smoke box, there being a fusible plug in the top of the latter, designed to melt when the water gets too low, and cause the putting out of the fire. The lower and upper portions of the shell have pipe connections with the tubular section, and a pipe from the lower part of the shell leads to a coil in the top of the



JAEGER'S STEAM OR HOT WATER BOILER.

firebox, the coil connecting by a vertical pipe with the top portion of the heater. The return pipe at the bottom is connected with a vertical pipe leading to a tank, and the latter is connected with the main steam pipe, to enable the steam from the boiler to balance the water pressure of the return flow. The tank is set at the desired height, and back of the boiler connection is a valve, there being another valve in one of the lower circulating pipes of the heater, each of these valves being connected by a rod with a tilting lever on a shaft extending through the tank, so that when one valve is open the other is closed. The arrangement is such that an active circulation is kept up, water enough being constantly drawn into the coil to prevent it from being burned, while there is at no part of the boiler a great bulk of water, the water being so distributed as to be exposed to a great heating surface.

A COMBINED CAMERA AND GRAPHSCOPE.

The accompanying illustration represents a recently brought out little device, called the "Kombi," adapted for use as a picture exhibitor as well as a camera. It is 1½ inches square and 2 inches long, our engraving



showing the detachable rear part opened to exhibit the roll holder and with the time exposure cap and rear cap removed. The negatives are taken on a strip of sensitized film, each strip capable of receiving



A COMBINED CAMERA AND GRAPHSCOPE.

twenty-five negatives. When a strip of film is filled, the negatives may be printed on a transparent strip and placed in the roll holder, where the strip of sensitized film had previously been, and the device is then ready for use as a graphoscope, or picture exhibitor, the pictures upon the transparent strip, when viewed through the lens, being magnified and coming out more clear and perfect. The pictures taken may be 1½ inches square or 1¼ inches in diameter, the small views showing reproductions of two picture portraits taken in this way, landscape and other pictures being similarly taken. The instrument is arranged either for instantaneous or time exposures. It is made of seamless metal, with a finely oxidized silver finish, and weighs when loaded for twenty-five exposures only about four ounces. It is neat, compact, simple and very inexpensive for the work it may be made to do. It is manufactured by Mr. Alfred C. Kemper, Nos. 208 and 210 Lake Street, Chicago.

Sense of Smell in the Seal.

"Among the many singular traits of character possessed by seals," said Oliver L. Mason, a retired sea captain, to a reporter of the *St. Louis Globe-Democrat*, "none are more striking than the devotion of the male to its offspring, contrasted with the apathetic attention paid by the mother. The latter will at the least alarm bolt away into the sea and leave her babies behind her, but the bulls mount guard over the swarming herds of young, and nothing can exceed their devotion and courage when called upon as protectors. The sense of smell possessed by the seals is very strong, and will invariably wake them out of a sound sleep, even if you come upon them ever so quietly to the windward, and you will alarm them in this way much more thoroughly, though you be half a mile distant, than if you came up carelessly from the leeward and even walked in among them, they seeming to feel that you are not different from one of their own species until they smell you. The chief attraction in these animals is their large, handsome eyes, which indicate great intelligence. They are a deep bluish black, with a soft glistening appearance, and the pupil, like the cat's, is capable of great dilation and contraction."

The Kitchens of Parisian Restaurants.

Parisians, as well as foreigners, who take their meals in the sumptuous and more or less gilded restaurants of Paris seldom give a thought either to the places in which are prepared the dishes served or to the professional maladies of most of those who prepare these dishes. A study of the kitchens and cooks of Paris is interesting, because there are more than 3,500 of the latter, because they constitute a corporation and are divided into mutual aid societies. Of very limited dimensions, the kitchens of the great restaurants of Paris are, as a general thing, situated below the sewers, without air, without light, except what can be got from glass lights or openings in the pavement. The gas is burning there constantly, and causes a heat which, added to that of the fires, makes these cellars a veritable place of torture, in which thousands of workmen, dripping with sweat, pass the greater part of the day in preparing the dishes which are afterward served to us. Examination shows that there are no places where more maladies exist than in Parisian kitchens.

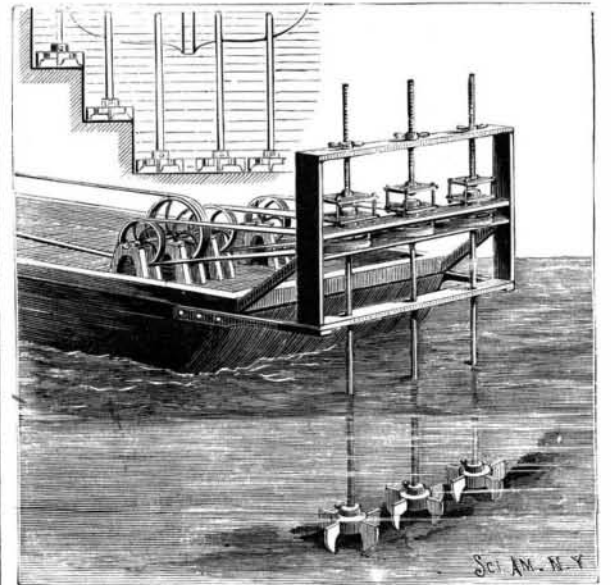
Two respectable physicians who attend to the medical service of the Mutual Aid Society of the Corporation of Cooks of Paris ought to know something about the matter, and, in order not to be taxed with exaggeration on this subject, we cannot do better than give the testimony of these medical men. The cooks of Paris, say these gentlemen, and not only those of Paris, but also those of large cities—for the hygienic conditions under which these cooks work are everywhere the same—generally suffer from alcoholism, anemia, rheumatism, liver complaint, pulmonary tuberculosis; besides nearly all of them have varicose veins, hernia, ulcers, and affections of the skin. These infirmities are so frequent that it has been necessary to change the rules for admission to the society, those having the maladies named having been formally refused admission. The need of being constantly on their feet, as well as the heat of the fires, softens the tissues and dilates the veins. In order to endure what they have to undergo and to quench the thirst which consumes them, the cooks are obliged to drink, and, as barley water or water mixed with wine or coffee does not strengthen them sufficiently, and as, moreover, the stomach is disordered by emanations from the gas and coal, they take alcoholic drinks, vermouth, absinthe and an endless series of bitters. Once started on this road, the cooks become either alcoholic or dyspeptic; the liver is attacked, vomiting and chronic diarrhoea are frequent. The sudden variations

of temperature to which these men of from twenty-five to thirty years are exposed on quitting the range to go outdoors or to the refrigerators predisposes them to rheumatism and phthisis. Finally we allude to the burns, the whitlows, the chaps and ulcerations of the hands, which are customary with dish washers and pot cleaners, to point out that such affections are very difficult to cure.

The lesson to be drawn from these undeniable facts seems to us very clear, and it is a lesson which every one who eats at restaurants would do well, if only for his own sake, to heed. With airy kitchens, well ventilated, well lighted, not situated in unwholesome underground places, it would not perhaps be possible to do away with all the professional maladies which attack this interesting class of working people; but you would avoid at least a portion of these maladies, those which are contagious for the customers of the restaurants—tuberculosis and eczema. The personal interest of consumers, who as a usual thing see nought but the gilded dining room, the comfort which the keepers of them, dressed in the canonical black suit, provide, ought to make it worth while to take some trouble to aid in changing the deplorable hygienic conditions under which the dishes served are prepared.—*Journal des Economistes*.

AN EXCAVATOR FOR USE IN HARBORS, RIVERS, ETC.

For deepening and improving waterways and channels, removing sandbars, etc., where there is a considerable action of the tide, or where the currents are ap-



ANDERTON'S EXCAVATOR.

preciable, Mr. George P. Anderton, of Concession, La., has invented and patented the excavator shown in the illustration, the small view showing the cutters arranged for forming a slope. In a suitable framework projecting from the bow of a dredging scow are arranged vertical shafts, each carrying a cutter at its lower end, and on each shaft a pulley is keyed in a keyway, to permit of raising and lowering the shaft without disconnecting it from the pulley, all the pulleys being connected with pulleys on a main driving shaft actuated from an engine on the vessel. To raise and lower the shafts, the upper end of each shaft is engaged by a plate connected by bolts with a second plate, and the latter plate is engaged by a screw rod extending up through a top plate of the framework, there being on the upper end of this screw rod a handled nut, by turning which either shaft will be raised or lowered. The revolving cutters cut up the material and churn and stir it so that it will be carried away by the current or tide as the vessel moves forward, any desired number of cutters being employed, and the frame being arranged accordingly.

Fire at an Italian Match Factory.

A serious fire occurred recently at the Tedeschi match factory in Naples. It was caused by two of the employes, who had a dispute which ended by their pelting each other with boxes of matches. The matches became ignited and set the whole building on fire. A panic prevailed among the workpeople, who were mostly women, and a large number threw themselves from the lower windows. Several were injured. The fire was not got under control until after five hours exertion on the part of the brigade, whose efforts were ably seconded by the troops summoned to the scene.

Wild Camels in Arizona.

A. W. R., of Genoa, Nevada, thinks the wild camels of Arizona are descendants of a herd of camels brought to Nevada between 1864 and 1870 for packing salt over a dry and desert route to the quartz mills at and near Virginia City. They were used in that way for a time, but proved unprofitable. They proved a nuisance and were turned loose, and a law was passed prohibiting them from running at large on or about the highways. They were taken to Arizona, where it is supposed they remained.