

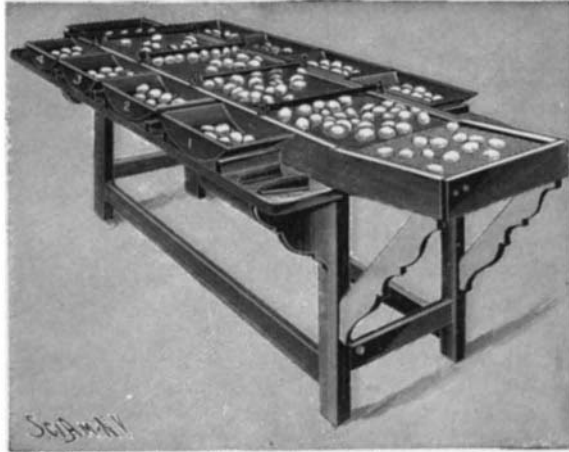
THE EXAMINATION AND SORTING OF EGGS.

The egg is to the kitchen what verbs are to speech. It is the necessary adjunct of the majority of sauces, of all thin stews, and of a large number of side dishes. It is, in addition, a nutritious food that passes through the digestive tracts without fatiguing them, and that becomes assimilated in our organism without leaving any residue therein. It contains within itself all the elements of our meals and constitutes a true bill of fare in miniature, in which bread and cakes are represented by the glucose and extractive matters, in which the albumen takes the place of a roast, in which butter abounds in the form of fatty matter, in which the chlorides, lime, magnesia and iron are not wanting, and in which occur in small quantities the lecithine and phosphates that concur in the development of the bones. It is, upon the whole, a complete aliment which, like milk—and, in many respects, like the grape—affords, without resistance to digestive action, the materials that enter into the composition of the blood.

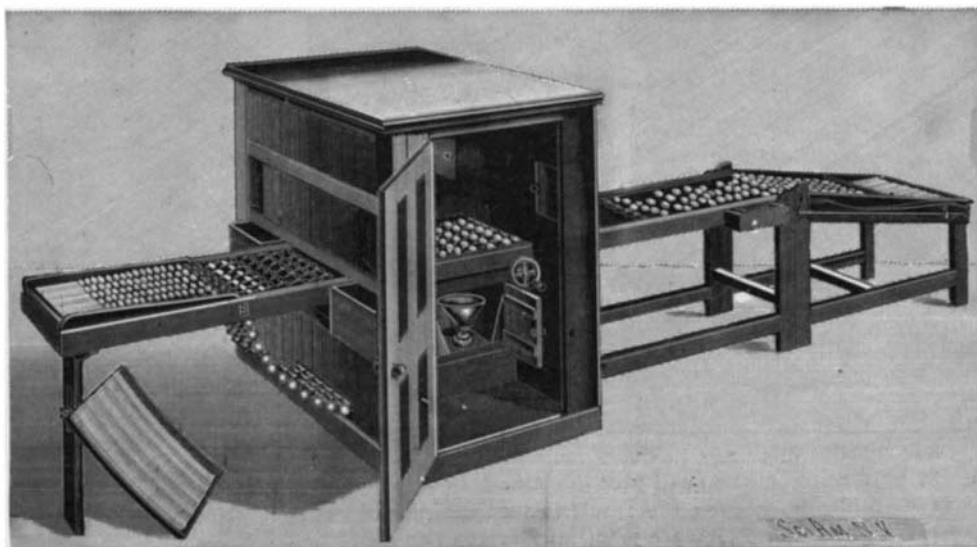
The newly-laid egg is entirely filled with yolk and white enveloped by a fragile shell. It is at this moment that it possesses its highest alimentary qualities. These it would be capable of preserving indefinitely, if the tightness of the shell equaled that of a metallic box. But, unfortunately, such is not the case. The calcareous shell is provided with pores, through which is soon established a cross circulation of water and microbes. The water leaves the albumen and passes to the exterior in the form of vapor, while legions of bacteria enter and fill the air chamber formed by evaporation. This latter causes the egg daily to lose, on an average, half a grain of its weight. We can assure ourselves of this by immersing it in a quart of water containing four ounces of salt. On the first day, it will descend to the bottom; on the second it will not sink to so great a depth; on the third, it will remain near the surface; and, beginning with the fifth, it will project above the surface so much the more in proportion as it is older. Such behavior of the egg in salt water may, up to a certain point, be used as a means of control. The loss of weight would not be of so much importance if it did not keep pace with the entrance of microbes.

Now, it is precisely the injurious action of the latter that restricts our consumption of so valuable a food material. Many people, not very sure of the age of the eggs exposed for sale by grocers, prefer to do without them rather than run the risk of being deceived in their purchase. The egg trade, as it is carried on to-day, especially in France, leaves much to be desired. The production of eggs, too, is, as a general thing, the result of chance. Upon farms, hens lay just about as they please, and the person who derives the greatest advantage therefrom is not the farmer, but the egg collector—an individual who leads a nomad life and who makes a business of profiting by the labor of others. In his daily travels among the farms, he collects the eggs in small quantities and then unites the products of his peregrinations and ships them to the agent of a central market. Many of these markets, in turn, make shipments to Paris. In the Central Halles of Paris the newly received eggs are at once examined by transparency. This operation is performed by a corporation of ninety-two examiners, with a foreman and several assistants. The function of these men, who are placed under oath, consists in examining the eggs in the cellars of the Halles, one by one, through the transparent light of a lamp, in order to separate the

bad from the good ones. For counting and examining 1,000 eggs they receive 17 cents. It will be seen that the route followed by the egg from the farm to the market is not very direct. And yet, how much money would be made and how great services would be rendered, should small and large producers group their merchandise and send it directly and regularly to the large centers.



APPARATUS FOR CLASSIFYING EGGS.



APPARATUS FOR EXAMINING EGGS.

The benefits of co-operation applied to the egg trade appear in a striking manner in the results obtained in Denmark. The Danish producers have founded everywhere throughout the country co-operative associations that propose to furnish fresh eggs, of good quality, for exportation. The majority of the producers are enrolled therein. Regulations of remarkable ingenuity assure the regularity of the operation of such associations. For example, in order to ascertain by what member a bad egg has been delivered, it is required that the shell of every egg shall bear the name of the producer marked with a rubber stamp. Large numbers of depots are established near the railways, and to these every producer is obliged to bring his eggs at least three times a week. The deliveries at each depot are controlled by a special employe, who has the right to refuse eggs that are

several days old. The others are classified according to their size. This double operation of examination and classification is effected automatically by means of a very ingenious apparatus, which consists of a dark chamber for the examination by transparency, and a long table provided with bars for the classification.

An endless, jointed, metallic belt carries the eggs in the first place into the dark chamber, where they are examined by means of a lamp, and then to the table, where they are classified. With this apparatus five girls can classify and pack 12 cases of 100 eggs in 13 minutes. The English have improved this machine by separating the examination from the classification. The first is effected in the box shown in the figure. The eggs, placed in a slightly inclined receptacle, enter cups jointed to the endless belt. This latter, in carrying them into the boxes, gives them a rotary motion. The belt is actuated by a small handwheel placed to the right of the examiner. To the left of the latter there is a drawer designed for the reception of the defective eggs. Owing to such an arrangement, the eggs are examined very rapidly.

The operator, instead of examining the eggs one by one through the light, has merely to cast a glance at the rows that are passing over a lamp, in order to eliminate the bad ones and leave the others. The belt, continuing its motion, leaves the box with the examined eggs, and discharges the latter on the other side of a long inclined table.

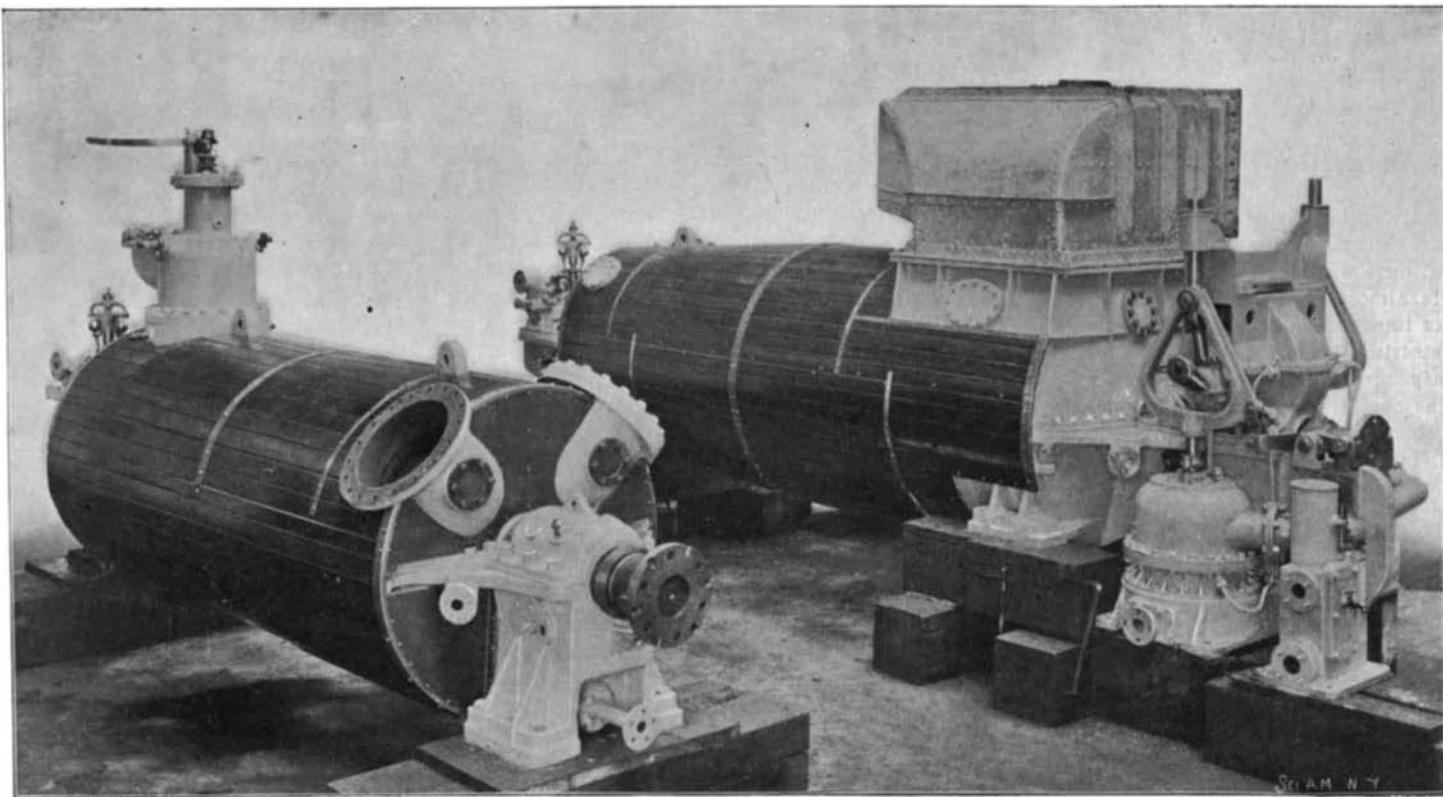
The classifying apparatus is very simple. It consists of an inclined table, one of the extremities of which has a certain length of its surface covered with felt. It is here that the eggs are deposited, to be afterward slid over the glass surface of the table. The latter is provided here and there with parallel bars that arrest the different sized eggs upon their passage. The girls who slide the eggs over the table remove those that lodge between the bars and place them in special receptacles that flank each of these spaces. The manufacturers of the new apparatus claim that four girls can classify and pack with it 1,440 eggs in 10 minutes.

The Danish depositories provided with such apparatus are capable of rapidly and surely inspecting the eggs that are brought to them by producers and of shipping only fresh and perfect ones to London. They are, moreover, held responsible to the consumer and are heavily fined in case of shipment of defective eggs. The English highly appreciate the results of a so well-appointed organization. The Danish shipments to London are daily increasing, especially to the Aerated Bread Company, which has more than four hundred creamery establishments in the English capital.—For the above particulars and the engravings, we are indebted to La Nature.

THE TURBINE ENGINES OF THE "KING EDWARD."

The success of the turbine-propelled passenger steamer "King Edward," which on its trial trip achieved a speed

of 20.5 knots an hour marks another step in the development of this most efficient form of steam motor. Although the practicability of driving a passenger ship successfully and economically by the steam turbine was a foregone conclusion in the minds of those who have any knowledge of naval architecture and steam engineering, it cannot be denied that the success of the "King Edward" will have an important effect in the great world



THE HIGH PRESSURE, AND ONE OF THE LOW PRESSURE TURBO-MOTORS OF THE "KING EDWARD."