

THE SPIRAL-GLOBE LAMP.

The employment of incandescent lamps having bulbs of plain glass leaves much to be desired from a hygienic point of view, because the intensity of the dazzling light radiated by the filament is certain to injure the eyesight. Hence shades are often employed to intercept the rays of light, or ground glass bulbs to conceal the filament. But these remedies both involve an increase in the cost of current since a large percentage of the light is absorbed. It is necessary, in order to obtain the same illuminating effect, to have lamps of higher candle power with consequent increase in consumption of current. It is the object of the inventor of the lamp which is herewith illustrated to remedy the defect and to enable the consumer to use a plain glass lamp without liability of injuring the eyesight, and to utilize all the current instead of partially obscuring or absorbing the light in order to render the lamp serviceable.

The new lamp consists of a plain glass bulb surrounded by an envelop composed of a spirally-wound rod of plain glass inclosed within an outer protective plain glass globe. The effect of this combination is twofold; for although the main object, as above stated, is to conceal the filament without loss of light, the result is, as a matter of fact, to increase the effective illumination of the lamp, the spirally-wound glass rod constituting a double convex lens throughout its entire length and serving so to refract and diffuse the rays as not only entirely to prevent the outline of the filament from being perceived by the eye, but also actually to increase the photometric value of the lamp in the direction in which it is most desirable that the light should be rendered available.

These lamps, which have a most pleasing and beautiful effect, are now being manufactured in England by the Spiral Globe Limited, of 28 Bush Lane, Cannon Street, London, E. C., and on the Continent by Johann Kremenezky, of Vienna; while companies are in process of formation to manufacture the lamps under license of the Spiral Globe Limited in other European countries.

AN AUTOMATIC OVAL WOOD DISH MACHINE.

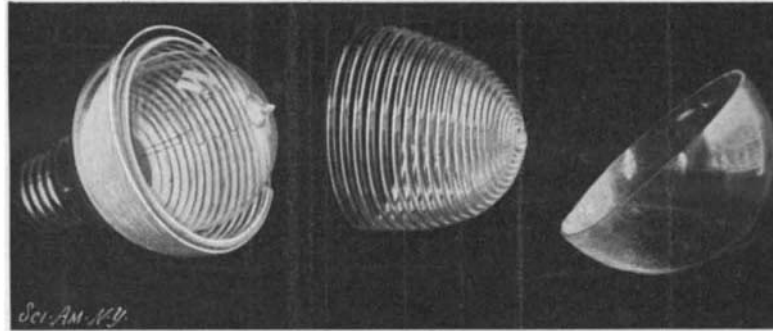
Oval wood dishes are exceptionally good and inexpensive receptacles for butter, lard, cheese, berries, and the like, and are for that reason very widely used by grocerymen. A machine has recently been placed upon the market by the Defiance Machine Works, of Defiance, Ohio, which is designed to make these dishes as quickly and neatly as only a good automatic machine can make them.

The machine is supported by a massive frame cored in the center and provided with a broad floor-base. The knives employed consist of a revolving cutter which cuts the dish by a single continuous cut; and two facing knives for shaving off the surface of the block between each cut of the dish-knife and making the dishes of uniform size, with straight edges.

The carriage by which the wood block is held is gibbed to the main frame and fitted with a powerful chuck which grips the block. The chuck is opened and closed by a hand-wheel and screw to receive blocks of different sizes. A screw extending through the frame is connected with a quick opening and closing nut to engage and disengage the feed. When the

nut is opened, the carriage can be moved horizontally in either direction by rack and pinion, which is used to save time in moving the carriage forward when commencing the cut or moving the carriage back after the last dish has been cut ready for the next block.

The screw-feed is driven by cut gears and is automatic. After the block has been placed in the chuck the carriage is fed forward by hand-wheel to the point where the cutting is to begin; and the nut is then engaged with the screw by a convenient hand-lever. When the block is fed forward, each revolution of the cutter produces a dish, until the entire block is consumed. When the last dish is cut, the nut is automatically

**THE SPIRAL-GLOBE LAMP DISMEMBERED.**

opened and the feed arrested, so that the carriage can be moved back ready for the next block. The feed can be adjusted for dishes of different thickness and can be stopped at any point while the machine is in motion, simply by lifting the feed-pawl.

The capacity of the machine is 75,000 dishes per day of ten hours. The material used is generally maple; but any odorless wood can be used of sufficient strength.

The Study of Rivers.

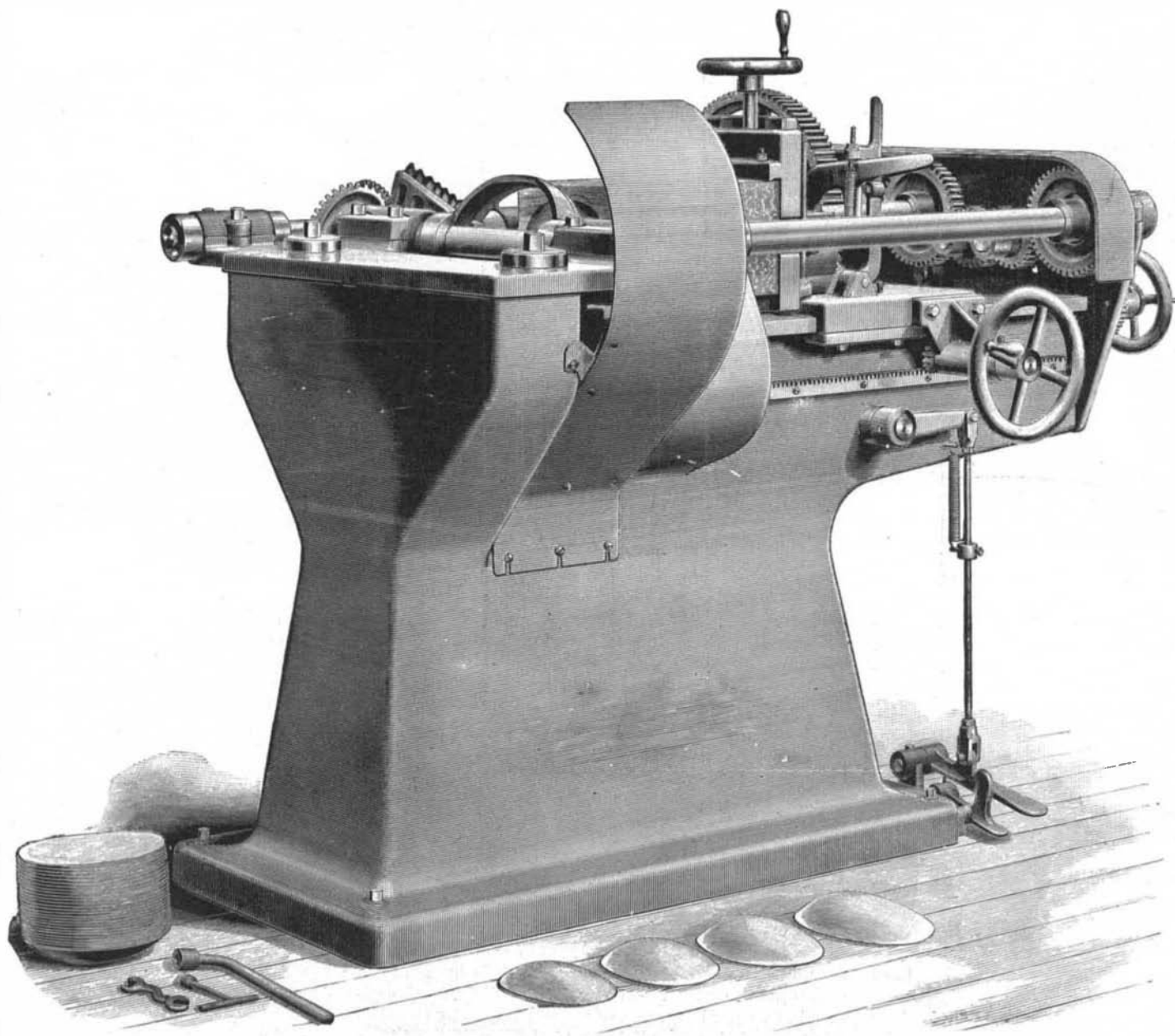
Great attention is now being given in Germany to the problems caused by the flow of rivers, and an extensive experimental station called the "Flussbau Laboratorium" has been set up at Dresden in connection with the great technical school of that city. It is under government control, and was founded with the idea of bringing scientific methods to bear upon the flow of rivers. A large room is set aside in the basement of the Dresden Technical School, and here, elevated some 4 feet above the floor, is an iron trough or tank 7 feet wide and 2 feet deep, reaching the full length of the room. At the upper end of this trough a large tank is

placed with appliances for permitting the water which it contains to flow into the trough in any required volume, so as to exactly imitate the even flow of a river. The trough is filled with sand, and the course of the river is laid out at angles down the trough through the sand, and various experiments are tried. The banks are protected by small bags of shot. The water flows at a certain speed, and the places where the bottom is washed out can be easily studied. The sand, which is carried mechanically by the water, is run over ribs, behind which the sand is deposited. The water is then pumped back into the tank.

Sand of various colors is used for showing the exact position of the deposit of the sand wash in the rivers. This affords an easy means of determining the rate of erosion and deposit. The effects of freshets, or the sluggish flow of dry autumn, can be imitated at will. New channels can be produced artificially by a sudden flushing of water. Dams, breakwaters, piers, docks, bridges, etc., can be built and the effect noted when the water is turned on. The sand washed out of the trough can be caught by the tin ribs, gathered up and measured; the quantity of water being known, it is a simple matter to determine the amount of sand carried per cubic foot. The tank can then be cleared of sand and gravel and stone substituted, thus giving another class of phenomena. With the aid of maps and contours, various sections of more important German rivers can be laid out. Prof. Engels, the director, duplicates every curve, builds every crib and breakwater, and then turns on the water at the ordinary rate of flow of the river under investigation.

According to The New York Sun, a miniature stretch of the Elbe has just been completed, and the cribs are all accurately placed and their banks are held in place with bags of shot. After the water was turned on, Prof. Engels showed how bars were built up and when the channels were deepening, where hollows were being filled in, etc. He was then able to determine where a new crib might serve to preserve a deep channel and at the same time cause the river to deposit its sand in shallows, and where the river might well be filled up and add to the usefulness of shore property. In each case where a change was thought to be desirable, experiments with piers and cribs were made to see if they were effective. By this means all of the rivers of Germany can be studied in turn on a small scale at practically no expense, and saving the cost entailed by a great engineering work which proves useless. The special aim of the experiments is to regulate

the rivers in such a way that they will keep their own channel clear and deep enough without dredging. It is believed that there is a great future for the work and it is thought that the time will come when all rivers will be regulated by the advice of river experts who have studied in this or similar laboratories.

**A MACHINE FOR FORMING OVAL WOODEN DISHES AUTOMATICALLY.**

TEN new style motor cars are to be placed on the Fifth Avenue elevated branch of the Brooklyn Rapid Transit Company's system as soon as they are equipped with the electric motors. One received a trial recently, which seemed to be satisfactory. It is built on lines similar to the cross-seat cars now run on the East New York line, except that each seat holds only one passenger. Aisle room is saved by placing the seats about a foot behind each other at a slight angle.