THE KRUPP ELECTRIC LAMP.

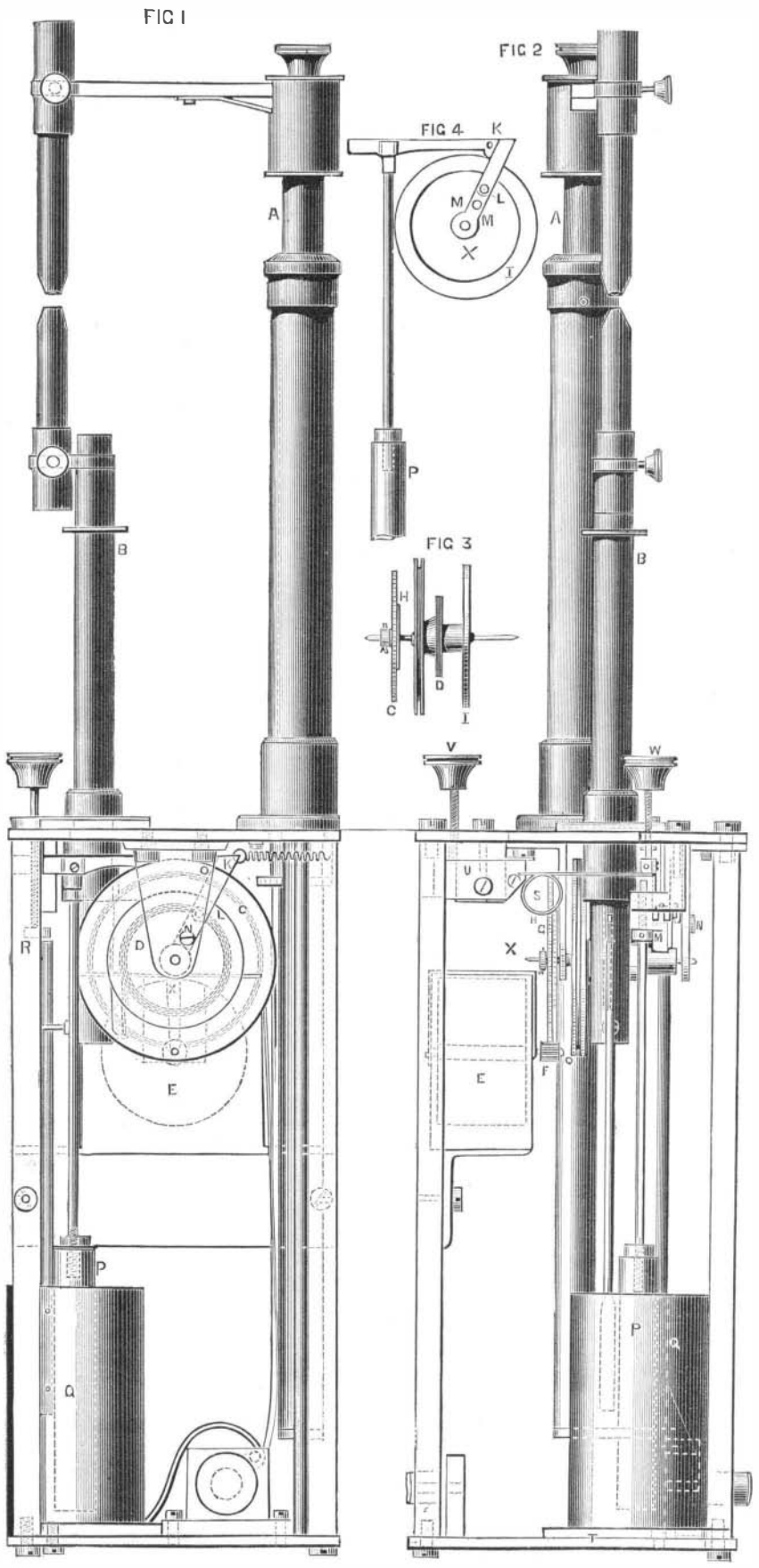
Herr von Krupp, of Essen, has recently patented an invention for "Improvements in Electric Light Apparatus." The main object of the invention is to regulate automatically the position of the carbons of an electric lamp "in a simpler manner than heretofore, without abandoning the generally acknowledged conditions on which the precision of motion of the single parts depends." The invention includes the application of a brake appliance for the automa tic regulation of the distance between the two carbon points. A fan or fly revolves in quicksilver, or other liquid, for the purpose of regulating the motion of the carbon holder, this part of the apparatus being designed as a substitute for clock-work. A magnetic coil with iron casing and iron bottom is employed in connection with the motion of the brake appliance.

Fig. 1, in the engraving, which we take from *Engineering*, is a side elevation, and Fig. 2 a front elevation of the lamp, in which A is the holder for the upper positive carbon, and B the holder for the lower negative carbon. The upper holder, A, is suspended from the disk or pulley, C, by means of a jointed chain or wire, the lower holder, B, being similarly attached to a disk or pulley, D, the latter disk being just half the size of the former. The chains or wires are so passed round the pulleys that when the holder, A, descends a certain distance by its weight, the other holder, B, ascends to half the distance. Accordingly the electric arc formed between the carbon points occupies a fixed position. As the weight of the upper holder, A, must not be too small, because its motion would then be easily influenced by dust and dirt, it is necessary to have an appliance for retarding and regulating its course or travel. For this purpose a fly or fan, E, is applied, which revolves in mercury or other liquid. On the spindle of this fly there is a pinion, F, which gears with a tooth wheel, G, on the spindle, X, of the chain pulleys, C and D. In order that the fly, E, by the insertion of a fresh carbon should not have to revolve backward, the toothed wheel, G, is fitted with a pawl wheel, H.

The setting and regulating of the proper distance between the carbon points is effected in the following manner: On the same spindle, X, as the pulleys, C and D, and tooth wheel, G, there is a disk, I, as shown in the separate view, Fig. 3. Fig. 4 is a separate view of a brake of a peculiar form acting on this disk, I. The brake consists of two parts, K and M, which are jointed together at L. The lower part, M, can turn on the spindle, X, and has a hole, M^1, in which is inserted a small peg, N, Figs. 1 and 2. The peg, N, has much play in the hole, and the backward motion of the brake is limited thereby. O is a brake block on the upper part, K, of the brake; P is the keeper for an electro-magnetic coil, Q. This keeper is by a brass rod suspended from the other end of the part, K.

When the lamp is in action the keeper, P, is drawn into the coil, Q, whereby the brake block, O is pressed against the disk, I, turning the latter in its further movement downward, that is, so far as the set screw, R, Fig. 1, will allow. Thus, the upper carbon point will be raised, and the lower carbon point lowered, and the electric arc then makes its appearance. The carbon points now gradually consume away, the current becomes weaker, and its effect on the electro-magnet, Q, is lessened. The brake, K, supported by the spring, S—the action of which can be suitably regulated in proportion to the strength of the current by means of the lever, U, and set screw, V—and by the weight of the carbon holder, moves slowly back. The brake disk, I, is thereby enabled to turn forward, and the carbon points can approach each other. When this movement has proceeded as far as the brake disk, I, moved back before, then the lower part of the brake comes to bear against the peg, N. By the further weakening of the current, the brake will now turn in its joint at L, the brake block, O, releases the disk, I, and the carbon points move toward each other, whereby the current is strengthened and the brake is again applied to the disk, I, either simply to hold it when the carbon points are in their right position, or to pull it back when the carbon points are too close together. When inserting new carbons, the brake is fixed by the set screw, W, and the work is arrested thereby. The electro-magnetic coil, Q, rests on the bed plate, T, of the lamp, and is surrounded by an iron casing, whereby its power of attraction for the keeper is increased.

The fixed position of the arc provides for keeping the light in the center of a concave reflector. Where this is not required, the lamp may be simplified by leaving out the moving parts for the lower carbon holder, making it fixed instead of movable. The lamp thus devised has been employed by Herr von Krupp in portions of his great factory at Essen, in Germany, and the results have been so satisfactory that the light is being extended to other parts of the establishment.



KRUPP'S ELECTRIC LAMP.

Oil Wells and their Products.

Recent statistics show that there are now 10,882 wells producing oil in the State of Pennsylvania, and they pour out altogether about 50,000 barrels of oil daily. The product this spring has been 25 per cent greater than last year and about three times as great as the yield three years ago. One thousand eight hundred and eleven new wells were opened during the past year, and there appears to be no danger of exhaustion of the supply. This vast product adds immensely to the country's industries, and the transportation of it affords large revenues to the carriers.

Infusion of Horsechestnut in Rheumatism.

Dr. W. S. Drake reports in the St. Louis *Medical and Surgical Journal* that he had an inveterate case of chronic rheumatism cured by the patient bathing in an infusion of horse-chestnut. This patient had not walked for nearly two years, and had gone through the whole list of rheumatic remedies. While treating a horse with the infusion of horsechestnut he found the swelling to rapidly disappear from his hands. He then applied the remedy to other joints, and received the same benefit. This is certainly an improvement on the practice of carrying a horsechestnut in one's pocket as a prophylactic of the same complaint.

Ancient Memphis.

A traveler in the East gives the following interesting account of his visit to the remains of ancient Memphis, founded by the first known Egyptian king—Menes. "But what did we see of this wonderful city? Only a succession of mounds," says the writer; "a few pieces of ancient statues; and far down below the present level, with its face in the water, a magnificent figure of a woman in Egyptian dress, with noble features and finely-modeled form, almost perfect, although probably 4,000 years old. As a matter of course, we lingered and looked as long as we thought sentiment required, then pushed on to the remarkable ruins of the cemetery, which was connected with this city, or I should say, magnificent city of the dead—to the very confines of which Memphis extended. It is now but a little more than a vast mountain of sand, being just on the precincts of the African desert. There are so many tombs everywhere peeping out, and so large a number of pyramids—eighty-one in all, scattered about—that the interest is keenly excited at once; and at every step some new developments take place. When we remember that old Memphis was seventeen miles in circuit, and was occupied with villas, gardens, and sacred groves, we can realize more than in any other way the wondrousness of the scene which remains to us to-day. After passing the largest pyramid, considered the oldest monument of antiquity in the world, we descended rapidly to the one little house of refuge standing in the midst of the sand, dismounted and lunched—thus securing a good resting season, and after about an hour, started out with our guides to the two special points of interest here, the Mausoleum of the Sacred Bull, and the tomb of the Priest Tih, the latter built about 3050 B. C. These were uncovered in 1860 by the Egyptian authorities, who, first noticing mounds in the sand bearing the appearance of heads, appointed a commission, and, after a labor of sixteen months, an avenue of sphinxes, 600 feet long, was laid open, the pedestals or statues being perfect in all cases. This was paved and led to the Mausoleum of the Sacred Bull, where these objects of worship had been entombed for several dynasties. There were found three separate chambers of temples, the latest where dates were found—650 B.C.—being the only one now open. One cannot help feeling an interest in every detail of such a place. There are the long avenues, broad and high, hewn in the solid rock, while all along the sides are deep recesses where are now standing the sarcophagi of the bulls. Twenty-five perfect ones stand in one archive, each weighing forty tons, and many of them fully engraved with figures, representing life, death, and immortality. But it is no more wonderful to see them where they are than to understand how they were put there. One which was presented to the French had been abandoned when moved some little distance, as too heavy to be taken away. They are thirteen feet long, eleven feet high, and seven feet deep, and, although many of the covers have been removed, nothing was found in any of them. Above the sarcophagi are inscriptions relating to their burial, and in whose reign they died. Many tablets were found upon the walls, which were placed there as offerings to the god; these, however, were all allowed to be taken to Paris."

A Tribute to Cyrus H. McCormick.

The Academy of Sciences of the French Institute have elected Mr. Cyrus H. McCormick as correspondent of the Academy in the Department of Rural Economy. This is a recognition of his services in the invention and manufacture of harvesting machinery, and his official connection with the recent Exhibition at Paris.