NOTES FROM GERMANY, FRANCE, BELGIUM, &c.

(From our own Correspondent.)

Rheinland-Westphalia.

THE iron market over here is without improvement, and the slight increase in demand and employment which makers could report in a few instances some weeks ago has given place to general quietness, partly because the negotiations that have been carried on for the forming of syndicates have not had any result yet. Some mills being most anxious to secure employment before the summer holidays begin have agreed to accept orders at reduced rates. For syndicate products quotations have not altered, and the rise in export bounties is intended to give a little more strength to the market. A weakening tone is noticeable in exports, and the contracts on offer have to be taken at unprofitable prices very often. The inland trade in bars continues quiet, the average quotation being M.93 p.t., free Oberhausen. In heavy plates also only a moderate business is being done at M.93 to M. 95 p.t., while for boiler plates the average quotation is M.110 p.t., with 1½ per cent. discount. The market for pipes is comparatively lifeless, and though prices are very low already, purchasers have no difficulty in obtaining concessions, because the mills are hard up for work. The hardware and tool department continues only quietly engaged. At a meeting of the Siegerland Iron Ore Syndicate on June 30th production in May was stated to have been 193,592 t., while deliveries were 190,701 t. For June deliveries are expected to show a decrease.

The Iron Industry in Silesia.

For pig iron as well as for the various articles of manufactured iron a moderately good demand has been experienced in the course of the past week. Dealers, especially, are buying more freely, and merchant bars have been sold at M.95 to M.96 p.t., as compared with M.93 p.t. last month.

Coal in Germany.

Gas coal and engine fuel meet with strong request in Rheinland-Westphalia, and good accounts are coming in from Silesia, exports to Russia and to Austria-Hungary having improved since last month. Coke remains in good call.

Austria-Hungary.

Business here and there has been improving during the past week. Home demand, on the whole, is more healthy than that on foreign account, and if rates have not shown an improvement they certainly are firmer than they were last month, and optimists consider this a sure symptom of approaching improvement. A moderately good business is being transacted in pit coal, and brown coal has remained in strong request.

Quiet Tone in Belgium.

The iron market is in about the same condition as previous to the slight improvement that could be noticed some weeks ago, only there is more work now at the various establishments. With regard to prices, producers show a good deal of firmness, at least in manufactured iron. Pig iron remains quiet, and quotations have been, perhaps, a trifle less firm than in last month. It is gratifying to state that a regular and satisfactory demand is coming in for girders. Extensive orders have also been secured in rails, and more work is holding out. In semi-finished steel, on the other hand, the weak tone appears to be increasing, the basis quotation being 69s. p.t. f.o.b. Antwerp for rolled bars. German competition continues keen and successful. Basic bars f.o.b. Antwerp are quoted £4 to £4 1s. p.t. for immediate delivery, and iron bars have decreased to £4 7s. p.t. Some fair forward orders have lately come in, and this fact has given a little more confidence to the market. The inland price for basic bars is 110f. to 112.50f. p.t.; iron bars, 120f. to 125f. p.t. Plates are in an unfavourable condition generally. Medium sorts are in tolerably good request, but heavy plates, as well as sheets, are neglected. Current quotations are :—£4 14s. p.t. for heavy plates, £4 16s. p.t. for ¼in. sorts, £4 18s. p.t. for $\frac{3}{8}$in. qualities, and £5 p.t. for $\frac{1}{16}$in. sorts. German competition is especially keen in hoops, and rates have accordingly gone down to £4 14s. p.t. for export, while for inland consumption 150f. p.t. is quoted. Exports in finished articles of iron and steel have been animated, and they show a marked improvement as compared with last year. There is a steady demand for fuel of every description, the tendency of prices being firm.

AMERICAN NOTES.

(From our own Correspondent.)

NEW YORK, July 1st.

THE car builders have been making up for lost time in their June totals, which show orders for 18,100 cars, with additional orders for 5000 placed yesterday. Last week's car orders amounted to 4550, 37 locomotives, and 45 coaches. The rail mills booked orders for 58,000 tons, including export orders. Car wheel makers ordered 12,500 cast car wheels. General structural orders 24,775, besides 3640 tons by railroads. An order for 20,000 tons of 10in. pipe for 160-mile line in Persia has gone to the mills. Large domestic requirements are pending for pipe. The week's business in pig iron calls for about 100,000 tons, a little under the previous week. Demand will soon increase, as prices are regarded as exceptionally low. The larger foundry plants are figuring on heavy purchases, but so far only about 50 per cent. of furnace capacity is at work. Quite a number of consumers are trying to arrange for future coke deliveries. Furnace coke is 2 dols., and 27,000 tons have just been contracted for at that figure, though it has recently been shaded. A general movement to secure coke will set in as soon as foundry, furnace, and other interests are sure the corner has been turned. American pipe interests are bidding close for the remaining 290 miles of pipe for Persia. They expect to secure the greater portion of it. The Steel Corporation took the first order. The upward march of business has not set in, but the feeling is general that the next two months will be much better than the past two. The strong feature of the market lies in the fact that buyers have a great deal of business to place. The copper market continues quiet. Domestic buyers are using but little more than half their usual supply. Price fell ¼ during the week. Exports for month 29,028 tons. Domestic buyers anticipate further shading.

PERSONAL AND BUSINESS ANNOUNCEMENTS.

MR. H. BATH SPENCER, A.M. Inst. C.E., M.I. Mech. E., asks us to state that he has commenced business at Winchester House, Birmingham, as an inspecting engineer and buying agent for export. Telegrams, "Bathspen, Birmingham," and telephone, Central 2070.

ROYAL INSTITUTION.—A general meeting of the members of the Royal Institution was held on Monday afternoon, the 6th inst., Sir James Crichton-Browne, treasurer and vice-president, in the chair. Mrs. Walter Beevor, Mr. G. G. Blake, Mrs. W. H. Crocker, Mr. and Mrs. K. P. Hawksley, the Hon. Geoffry L. Parsons, Mr. E. Sanger Shepherd, and Miss H. C. Schott were elected members.

BRITISH PATENT SPECIFICATIONS.

When an invention is communicated from abroad the name and address of the Communicator are printed in italics.

When an abridgment is not illustrated the Specification is without drawings.

Copies of Specifications may be obtained at the Patent-office Sale Branch, 25, Southampton-buildings, Chancery-lane, W.C., at 8d. each.

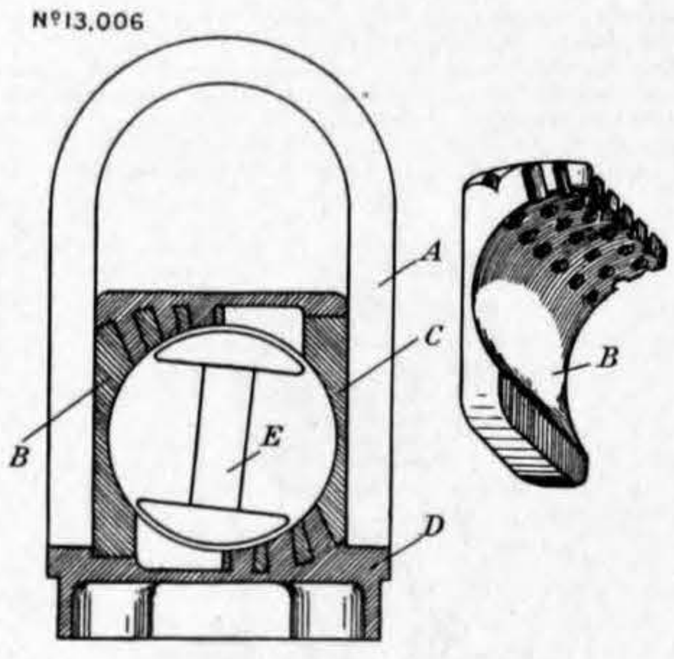
The date first given is the date of application; the second date at the end of the abridgment is the date of the advertisement of the acceptance of the complete Specification.

Any person may, on any of the grounds mentioned in the Act, within two months of the date given at the end of the abridgment, give notice at the Patent-office of opposition to the grant of any Patent.

INTERNAL COMBUSTION ENGINES.

13,006. June 4th, 1913.—IMPROVEMENTS IN AND RELATING TO MAGNETO-ELECTRIC IGNITION APPARATUS, Unterberg and Helmle, of Durlach, Baden, Germany.

In order to secure a broad peak of E.M.F. or a plurality of relatively small peaks in place of a single large and pointed one, it has been proposed to provide fork-like projecting teeth on the edges of the magnetically active iron parts of magneto-electric ignition apparatus. As an alternative to such tooth-like projections it is also possible to tooth the pole shoe by longitudinal slots. According to this invention, one projecting edge of each of the two pole shoes or each of two diametrically opposite edges of the armature is perforated by a number of closely set

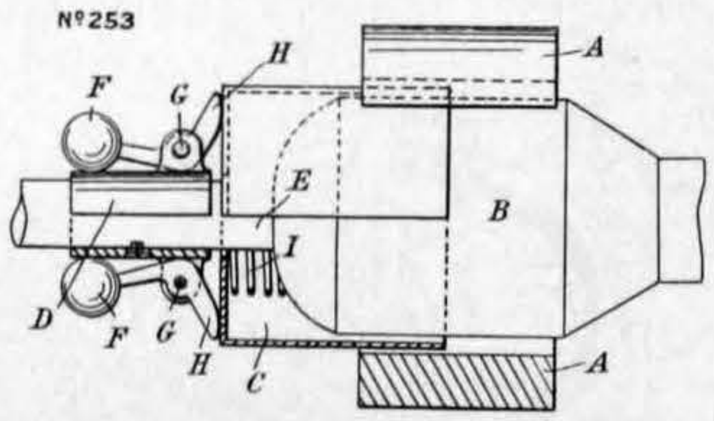


drilled holes, which make the edge a grid. These holes have further the effect of producing, as it were, circumferential and axial steps in the iron available to the magnetic flux; or if the holes are suitably arranged they may leave between them uninterrupted strips of metal, either longitudinal or transverse or both. A is the bar magnet and B and C the two pole shoes, which are so united by the non-magnetic casing D that the armature E can rotate between the pole shoes. According to the right-hand drawing, the upper projecting edge is perforated grid fashion. The perforations are produced by drilled holes, which in the example are so arranged as to produce longitudinal ribs. The angle of inclination of the mid line of these drilled holes increases towards the outside, so that the bridge portions have a wedge-like cross section, as is clearly to be seen from the left-hand illustration.—*June 17th*, 1914.

DYNAMOS AND MOTORS.

253. January 5th, 1914.—IMPROVEMENTS IN AND RELATING TO DYNAMO-ELECTRIC MACHINES, Randolph Harry Lane, of 12, Mount-road, Wimbledon, Surrey.

Referring to the drawing, A indicates the pole pieces of the field magnets and B the armature, C a sleeve or cover partially enveloping the armature B and rotating at the same speed and slidably mounted so as to be capable of movement between the armature and magnets. The sleeve is made of brass or other non-magnetic metal or material, and is suitably mounted to

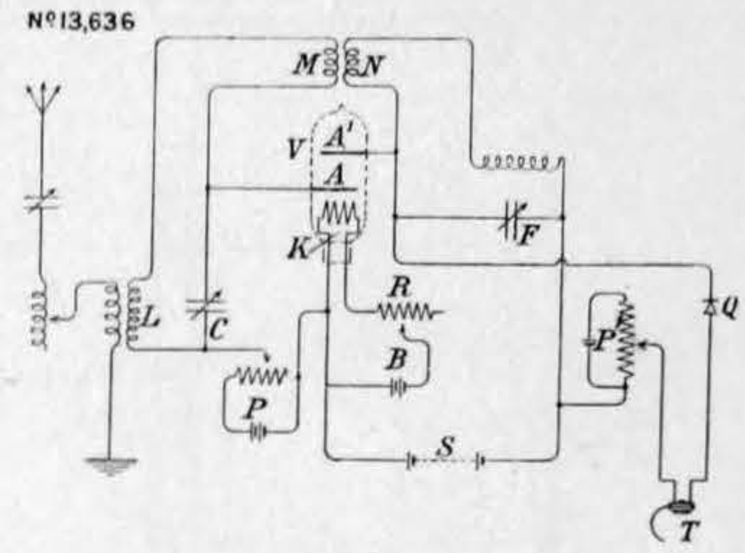


be capable of the sliding movement referred to. A collar or sleeve D is fixedly attached to the armature shaft E, and carries a centrifugal governor comprising weighted pieces F, pivots G and finger pieces H, which latter bear against the outer face of the sleeve or cover C. The sleeve or cover C is normally pressed by a spring I interposed between the inner face of the sleeve A and the armature B. In action, the sleeve C is moved inwards against the action of the spring I to reduce the magnetic field through the governor finger pieces H in direct ratio to the increased revolution speed of the armature.—*June 17th*, 1914.

TELEGRAPHS AND TELEPHONES.

13,636. June 12th, 1913.—IMPROVEMENTS IN RECEIVERS FOR USE IN WIRELESS TELEGRAPHY AND TELEPHONY, Marconi's Wireless Telegraph Company, Limited, and Charles Samuel Franklin, both of Marconi House, Strand, London, W.C.

It has been shown that an exhausted tube which contains a heated cathode consisting of a strip of metal covered with an oxide and two anodes, one of which is in the form of a plate with holes and which screens the cathode from the other anode, can be used in a wireless receiver for magnifying both the received oscillations and the telephone currents. Referring to the drawing, V is an exhausted tube containing a cathode K, which is a metal strip covered with an oxide, and is heated by a battery B through a resistance R. A A^1 are the two anodes, A being a screw which is pierced by a large number of holes, and is arranged so that any current passing between A^1 and K must pass through the holes. A is connected to the circuit in which occur the oscillations to be magnified, and which is coupled to or forms part of the aerial circuit. This circuit contains inductances L and M and a condenser C which are adjustable. The other side of the condenser is connected through a potentiometer P to the cathode K. The anode A^1 is connected to a circuit con-

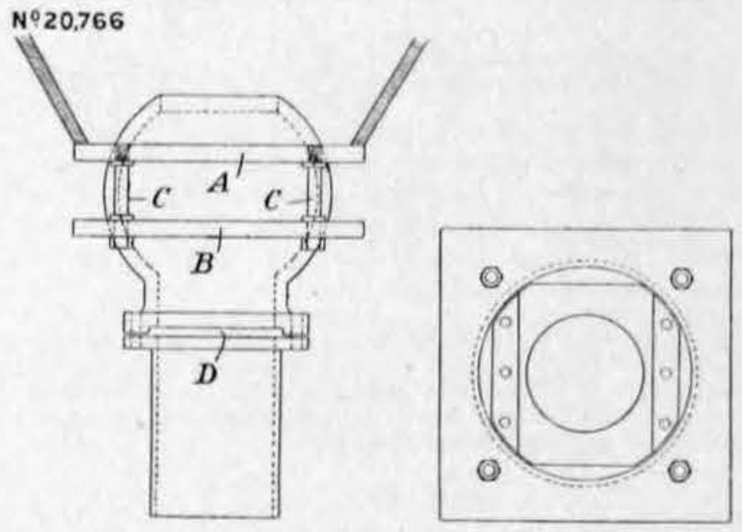


taining inductances N and O and a condenser F which are adjustable, and the other side of the condenser is connected through a battery S—the E.M.F. of which may be about 200 volts—to the cathode K. Across the condenser F is connected a rectifier Q, potentiometer P^1, and a telephone or detector T for detecting the oscillations in the circuit N O F. Magnified oscillations occur in the circuit N O F, and when there is no coupling between M and N, and all the circuits are tuned, the valve produces in this circuit oscillations which are similar in frequency and damping to the oscillations in the circuit L M C, but of much greater intensity. By coupling the circuits together by means of the coils M and N, the magnified oscillations in circuit N O F may be made to sustain the oscillations in the circuit M L C, and the system then produces continuous oscillation; if, however, the coupling is adjusted so that the system just refuses to oscillate, it will be found that the system acts like a circuit of very low resistance and shows very sharp tuning.—*June 17th*, 1914.

CRANES AND CONVEYORS.

20,766. September 15th, 1913.—PNEUMATIC GRAIN ELEVATOR SUCTION PIPES, S. A. Bird, Newton, Sharpness, Gloucestershire.

This is an improved movable joint for the receiving end of pneumatic grain elevator suction pipes. All the adjustable parts are external, there are no enclosed spaces wherein dust or grain may collect, the pipes can move freely through any

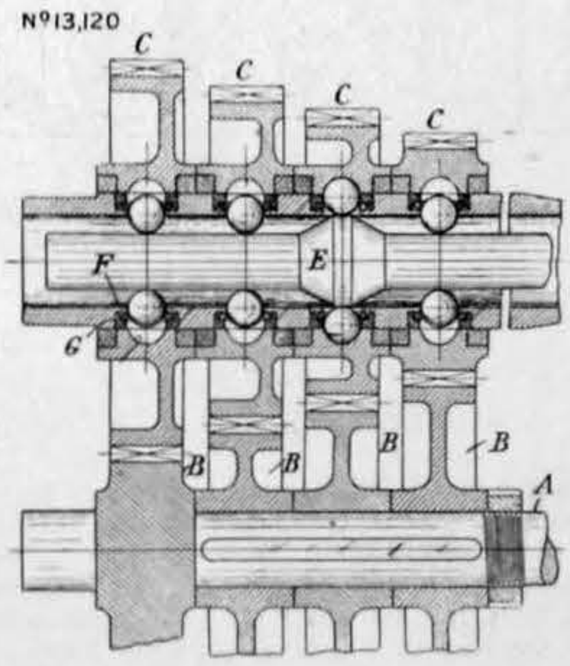


desired angle, and the joint is made without packing of any kind. The plate A is fixed to the vacuum canister. The plate B is held in position and adjusted by means of the studs C. The plates are bored with seatings to suit the radius of the ball pipe. The flange of the ball pipe is slotted at D, as usual, to receive the ordinary form of valve.—*June 17th*, 1914.

MOTOR CARS AND ROAD TRAFFIC.

13,120. November 28th, 1913.—CHANGE SPEED GEAR, A. McGlashan, 6, Hawton-villas, Balderton, Newark-on-Trent.

The driving shaft A carries the gear wheels B, which are in



constant mesh with the wheels C mounted on a hollow sleeve forming the driven shaft. Inside the boss of each wheel C hemispherical depressions are formed into which hard steel