the first machine submitted to public notice. It is to be seen at work at the Victorian Smelting Works, Footscray, Victoria, where stuff from the old dumps there is being reground in Chilian mills and put through. The apparatus consists of a round iron dish, from the centre of which a cone rises covered by two silvered copper plates. From their apex a funnel rises, its mouth fitted with a wire sieve, through which tailings are sluiced with water. Hung from the funnel framework are two concentric brass rings, in which carbon is fixed, the latter substance reaching within 1-16th of an inch the surface of a bath of mercury held by the iron dish first mentioned.

Electric wires are connected with the supports of the carbon rings, and with three platina points, which pass through the bottom of the dish, and touch the mercury. The circle is completed when the sluice water reaches the dish, and the mercury is so kept in a highly "live condition," its clear bright surface readily assimilating any particles of gold in the tailings which have not been taken up by the cone plates.

After passing through the funnel, over the cone plates and under the carbon rings, the tailings run readily away over the lip of the dish. The results, so far, are:

	GOLD.
One ton of refuse from roasted pyrites gave	1dwt. 15gr.
One ton of refuse from roasted pyrites gave	—— 15gr.
A half ton refuse from sand tailings gave	1dwt. 2gr.

On the basis of these figures the machine should certainly be a valuable addition to the ordinary mining plant, where its place would be at the end of the tables or boxes, and its working automatic.

To supply the current Mr. Otto uses a specially constructed dynamo by W. Canning & Co., Birmingham, whose Australian agent, Mr. W. Spencer Canning, is personally superintending the work at Footscray.—*Australian Mining Standard.*

The following are the official gold returns so far received at the mines office for the month of September:—

District.	Mill.	Tons Qtz. Crushed.	Oz. Gold.
Oldham	Concord, Carpenter et al	30	14½
Malaga	Boston Gold Mine Co'y	190	90¾
15 Mile Stream	New Egerton	260	116½
Sherbrooke	Miners' Alexandra	60 qtz., 16 slate	30½
Moose River	Moose River Co	87	12¼
Malaga	Malaga Co	102	114
S. Uniacke	Eastville	20	160
Caribou	Dixon	75	122
Stormont	Antigonish Gold Mine Co'y	485	284¾
Ashdale	Free Claim	4	5

AUSTRALIAN DIAMOND MINING.—The district of Bingara, in New South Wales, promises to be as rich a field for diamond mining as Cape Colony, and it is only waiting for capital to build a railway and bring a supply of water to the scene. For a considerable period prospecting work has been carried on systematically by men familiar with the industry, and a phenomenal wash-up, averaging 300 carats to the load, was one of the results. The various prospectors have proved beyond a doubt that they are in posession of an unlimited supply of diamondiferous wash, averaging one carat to the load upward, with sufficient gold to pay all working expenses. In many instances rich patches of ground are met with, similar to the recent discovery. The diamonds are small and hard, but of fair market value, and the original difficulty in the cutting has been surmounted. The water difficulty once overcome, employment could be found for thousands. The Bingara formation consists of a conglomerate wash, bound together with a discolored clay, containing rolled pebbles of jasper, sandstone, slate, tourmaline, shale and other rocks, carrying with them gold and diamonds; and the sapphire, topaz, garnet, etc., of no particular value. While on the subject of Bingara mining, it may not be out of place to refer to the cinnabar mine, recently opened up in the neighborhood of the town. The field is at present neglected, waiting working capital to develop what may be honestly termed a most promising venture—the rich wash cinnabar from the adjoining alluvial hill giving throughout 75 to 80 per cent. of pure mercury. At the time of stoppage of work cinnabar-bearing ground had been traced for six miles along the range north and south.

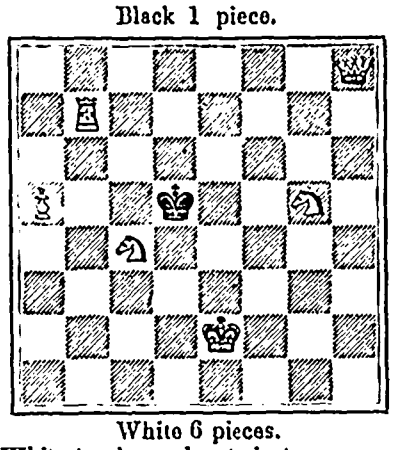
An electric locomotive has made its appearance in England for mining work under ground. This motor is placed so as to be parallel to the rails, as the place was too small to place it across the frame with its shaft parallel to the axles. Three reductions of gearing are employed, one necessarily being through bevel gearing. The whole framework of the machine is hinged from the driving axle, which is made exceptionally strong for the purpose, the weight on the other wheels being taken through strong spiral springs on the top of gun metal axle brasses. The motor is series wound for a difference of potential of 200 volts, and develops 15 brake horse power at 1,000 revolutions per minute. The length of the road it is being tested on is 1,200 yards, and the current is being collected from two bare copper wires carried on insulators overhead. The electromotive force is reduced from 500 volts to 200 volts by means of a motor transformer placed at one end of the line. The installation is specially interesting from the fact that a copious natural supply of water on the side of a hill is utilized as a prime source of power to drive a large vortex turbine, the water being conveyed down the hill through 15 inch pipes. A building has been erected on the hillside of this wild looking country, in which the turbine drives an "Immisch" four-pole dynamo which develops 100 electric horse power at about 600 revolutions per minute. The dynamo is compound wound, with a working difference of potential of 600 volts, and supplies current also for motors driving pumping and winding plants, besides lighting the colliery, both above and below ground.—*The F. & M. Record.*

CHESS.

Solution to Problem 132: 1, Kt to Q4.

PROBLEM 134.

Black 1 piece.



White 6 pieces.

White to play and mate in two moves.

Played in the Dresden tournament.

GIUOCO PIANO.

White Makovetz.	Black Porges.
1 P to K4	P to K4
2 Kt to KB3	Kt to QB3
3 B to B4	B to B4
4 Castles	Kt to B3
5 P to Q3	P to Q3
6 P to B3	Castles
7 B to K Kt5	B to Kt3
8 Kt to R3	B to K3
9 B to Q Kt5	Kt to K2
10 B takes Kt	P takes B
11 Kt to B2	K to R
12 Kt to R4	R to K Kt
13 Kt to K3	Q to KB
14 B to B4	Q to R3
15 K Kt to B5 ?	Kt takes Kt
16 Kt takes Kt	B takes Kt
17 P takes B	Q to R6 !

and White resigns, for if 18 B to Q5, or 18 P to Kt3, Black in both cases plays R takes P ch, and wins.