

## RAILWAY MATTERS.

BARON Reuter is making some progress with his Persian concession. One-third of the railway from Kestit to Teheran has been surveyed, and a commencement has been made with the earth-works, ballasting, and laying of sleepers. Very opportunely Dr. Titze, the Baron's Austrian geologist, has discovered extensive coal mines near Kasbin, directly on the line of the railway.

WHILE the new iron bridge over the Winooski River, near Waterbury, Vt., was being tested Saturday afternoon by Governor Smith, and the railroad officials, the western span fell into the river, a distance of thirty feet, carrying with it four cars loaded with iron, weighing 213 tons. Two labourers went down, but were not seriously hurt. The accident was due to the breaking of the lower chord of the span, supposed from a defect in the iron. The loss, which is heavy, falls upon the contractor.

DURING the great storm of December 5th, (says the *American Railroad Gazette*) some of the Michigan roads experienced much trouble from fallen trees. A train on the Grand Rapids and Indiana was obliged to cut through 100 trees between Traverse City and Clam Lake, forty-seven miles. On the Jackson, Lansing and Saginaw a train was twelve hours running from Orsego Lake to Wenona, 112 miles, having cut through 200 trees, one of which fell just in front of the locomotive, smashing the head light and pilot. On the Detroit and Bay City a train cut through three hundred trees in the run of 110 miles, eighty of them in fifteen miles.

M. DE LESSEPS has modified his original plan with respect to the Central Asian Railway. According to his modified proposals the line will commence at Keon, instead of at Orenburg, and it will run to Jekaterinburg. At this point M. de Lesseps proposes that the line should bifurcate. If M. de Lesseps' ideas prevail one fork will direct itself to the north, so as to traverse Siberia, and the other fork will run to Trolck, Turkestan, Taschkend, and Samarcand. The Pacific, the Indian, and the Atlantic Oceans would be united by this means. M. de Lesseps has sent his son, who is accompanied by Mr. Stuart, to India, in order to ascertain the best route for a line from Peshawur to Samarcand.

THE Chesapeake and Ohio Railroad Company have, for two years, been trying to tunnel through Church Hill, in the eastern part of Richmond, but the work has been attended with unexpected impediments. It was supposed it could be completed for 300,000 dollars, as there were no rocks, and the contract was let at that price. The tunnel runs 80ft or 90ft below the surface, through a slippery blue clay, which has the habit of caving in at the most unseasonable times in the most disagreeable manner. The contractors long ago gave up and the railroad company was compelled to take the work. Six or seven men have been killed, while the repeated caveings have undermined many houses over the line, which is about three-quarters of a mile long, and is not yet open.

THE *Titusville* (Pennsylvania) *Herald* says:—"With the present low prices the question of employing petroleum as fuel is again agitated. The latest intelligence upon the subject comes from Canada, where a man named Relighine has been trying an experiment on a locomotive belonging to the Canada Southern Railway, with an average consumption of four gallons per mile. The engine steamed quite freely and made good time with a train of thirty cars. This would be about a barrel for every ten miles. The most simple contrivance for burning petroleum is either by means of a jet of steam or compressed air passed at right angles over the orifice of a pipe in such a manner that the oil will be sucked up and thrown into the furnace in the form of a fine spray, where, if properly adjusted, it will undergo perfect combustion. The cost of the apparatus is trifling. The whole point, it seems to us, turns upon cheapness, and as the market might go up rapidly with any marked increase of demand, there seems to be an indisposition to try the experiment. There can be little doubt that oil will be found in many parts of the country where at present it is not thought of, in which case a new and unlimited market for its utilisation as fuel would naturally follow." A Californian paper states that oil has been found on the bank of the Pajaro river.

## THE BELLS AND CARILLON MACHINE, WORCESTER CATHEDRAL.

So much interest has been recently expressed concerning the bells and bell-chiming arrangements in Worcester Cathedral, that we are led to give a view and plan of the bells and bell-chamber, together with a view of the carillon machine recently completed there. The proposal to raise funds by subscription, to provide the cathedral with a clock and peal of bells, was originated by the Rev. Richard Cattley, minor canon of Worcester, and by his perseverance and devotedness to the object it has been successfully carried out. In his appeal Mr. Cattley said, "I have felt anxious for some time past that the noble tower of our cathedral, which rears itself with so much grandeur, not only over the city but also over the rich valley of the Severn that environs it, should, with the sanction of the Dean and Chapter, be furnished with a clock, in which all the resources of modern art (including, if practicable, daily telegraphic communication with Greenwich Observatory), together with the most finished workmanship, should be combined. And not only so; but, in order to complete a scheme worthy of Worcester, which from its rising importance now takes no mean place amongst the cities of England, I propose that we provide a peal of twelve bells, in the key of D flat, on the heavier of which the noted Westminster quarter-chimes would be sounded; and a bell of great power and magnitude, much after the model of the Leeds Town-hall bell, the note of which would be B flat, weighing nearly 5 tons, on which to strike the hours. The carrying out of this latter part of my plan is the hinge on which the whole practical utility of the scheme would turn, because by such a grand measure only would the time be distinctly indicated in every part; thus all other clocks could be regulated with perfect truthfulness; and I also make bold to say, without fear of contradiction, that the changes at the quarters, corresponding with the celebrated chimes to which I have just alluded, and answering to the deep-toned hour-bell, will present a combination which has not as yet been equalled, and will, moreover, only be surpassed when the unfortunate 'Big Ben' passes successfully through the founder's hands."

The sum named at first as the probable cost was about 4,000l. The greater part of the money was speedily raised, and the work was put in hand.

The casting of the bells was successfully completed by Messrs. John Taylor & Co., of Loughborough, and the tone is pronounced exceedingly fine.

The ringing peal consists of twelve, the weight of the tenor being 50 cwt.; note D, flat. They are dedicated to the Twelve Apostles, and the name of the Apostolic Patron is cast in beautiful 15th-century letters on the waist of each bell. The Cambridge Quarter Clock Chimes necessitate an extra bell sounding D natural. This is dedicated to St. Paul.

The weight of each bell, with the title and note, is as follows:—

No.		cwt.	grs.	lb.
1.	S. Matthias..... A flat	6	3	19
2.	S. Judas Jacobi..... G dit	7	0	22
3.	S. Simon Zelotes..... F	7	2	10
4.	S. Jacobus Alphai..... E flat	8	3	0
5.	S. Mattheus..... D flat	10	1	21
6.	S. Bartholomæus..... C	11	0	24
7.	S. Thomas..... B flat	12	0	0
8.	S. Philippus..... A flat	15	2	11
9.	S. Andreas..... G flat	21	2	11
10.	S. Joannes..... F	26	1	8
11.	S. Jacobus..... E flat	34	2	12
12.	S. Petrus..... D flat	50	0	0
	Extra Quarter Bell S. Paulus D	0	2	4

Total..... 221 3 12

There is also the great bell, on which the hours will be sounded by a new and powerful clock, constructed by Messrs. Joyce, of Whitchurch, Salop, (from the designs of Mr. E. B. Denison, Q.C.), weighing 4 tons, 10 cwt.; making a total weight of metal of 15 tons, 11 cwt., 3 qrs., 22 lbs. This bell is a fine casting, and the note B flat is a remarkably true and full one. The ornamentation is of the same character as the peal bells. There are also four coats of arms on the waist—(1) England; (2) See of Worcester; (3) Dean and Chapter of Worcester; (4) City of Worcester. Round the crown is a text of Scripture,