

# SCIENTIFIC CANADIAN

## MECHANICS' MAGAZINE

AND  
PATENT OFFICE RECORD

Vol. 9.

DECEMBER, 1881.

No. 12.

### NOTE AND COMMENT.



WE have heard so little lately of the Channel tunnel, if we except Sir Garnet Wolseley's protest against the scheme and the French criticisms upon it, that the world has almost forgotten the gallant little band of workmen who are steadily cutting their way through the lower chalk on either side the "silver streak" between Dover and Calais. Already, at last advices, one-tenth of the boring has been completed, the French workmen having pierced through 1800 metres, and their fel-

low workmen on the English side 1,600, the tunnel being in total length, irrespective of the inclines at each extremity, about 29 kilometres. The successful accomplishment of so large a portion of the work goes far to establish the entire practicability of what was so long denounced as a visionary scheme. From Sir John Hawkshaw's careful observations the conclusion was reached that it would be possible to excavate the entire tunnel in the lower bed of homogeneous chalk. This stratum affords several important advantages to the engineers. It is very easily worked, its great depth makes it possible to run the excavation in a gradual curve corresponding with that of the bed of the Channel itself, and last, but not least, it is practically watertight. The tunnel excavated by Sir John Hawkshaw a few years since near Brighton, was in the upper chalk, and the constant discovery of water springs materially impeded the work, though even this disadvantage was not productive of permanent delay. From this difficulty the present work is entirely free and the tunnel is proceeding more rapidly even than was expected. The present boring is merely to be a drift way, which once finished, the work of enlarging it to a tunnel will be mere child's play. The original calculation contemplated an expenditure of two years upon the piercing of this way, but it seems likely now that the actual work will take

considerably less. After this, perhaps four years will be needed before the railway will be fit for use, but long before then the most striking if not the greatest engineering work of modern days will have been practically completed, and imposing as will be the final opening of the line, there will come before that a day which will be far more exciting and far more impressive in its result. A day when the little band of workers, deep down out of hearing of wind and waves, shall hear through the rock the distant echo as it were of their own blows, and pushing on with redoubled exertions shall see the thin barrier fall, and clasp, through the narrow opening, the hands of their fellow workers from the other shore.

THE passing of the Employers Liability Act has produced a marked effect already in England, where the press generally are commenting upon the change in the legal position of master and servant produced by it. The *Building and Engineering Times* gives an account of a case lately heard in the City of London County Court. There a man who was employed as a labourer by the Midland Railway sued the Company for compensation for personal injuries received by him, while in their service, under these circumstances. When acting under the orders of a foreman, in loading a van, he had helped to fix a case upon a crane in such a careless way that the crane canted over and broke his leg. The defendant's evidence contradicted this view of the case; but as the learned Judge found for the plaintiff, with £150 by way of damages, that need not be considered. The important point in the case is that the Employers' Liability Act should be so easily applied for the benefit of workmen. The sections upon which this action proceeded give a right to compensation whenever injury is caused to a workman by reason of his conforming to the orders of one placed in authority over him. Here, all the plaintiff had to show was that he had acted under the foreman, and that the accident was caused by that foreman's negligence in giving an improper order. By the old law no such action could have been maintained, but now it is well nigh unanswerable. If, however, the employer could show that the plaintiff had by his own careless conduct contributed to the result, that would be a good defence, though in this last case that point does not seem to have