MAY 26, 1882.

All corporations are not airke, however, either in circum | water power mill. Is there anything necessarily inherent in stances or in conduct, and there is reason for believing that the national banks have been suffering in public estimation more from the faults of other corporations than from their own. Public attention has been challenged of late by the gigantic fortunes made by the railway kings, and the enormous power which they can exercise over the country's business. Looking at the gigantic railway and telegraph monopolies now existing, unthinking people jump to the conclusion that the banks are monopolies, too, and in almost the same way. But a little reflection will show this to be a great mistake A bank cannot be a monopoly in the same sense as a railway or a telegraph corporation. If at any time the country's business requires more banks, and if capital sufficient be available, there other the pressure may be nearly constant on the piston, if are no physical, material circumstances to hinder. All that al there be no expansion, but if steam be cut off in order to get bank requires in this way is - premises in which to conduct its the benefit of expansion, there will be a gradual reduction of business. But a new railway company requires right of way, connections east and west, and with the water nont, and the of admission to the end of the cylinder. The effect of this odds in favor of a company already in possession of all these varying velocity of the piston and varying pressure upon it is, material advantages are very great. Further, railway connections that the total pressure upon the crank-pin is not uniform depend upon a main line or its branches going many miles of distance to touch certain points. The Grand Trunk, for in stance, could not touch Ingersoll or St. Thomas except by building a number of miles of road, at considerable expense, into territory not heretolore occupied by it ; and the Great Western would be under the same disadvantage in attempting to reach Stratford or Seaforth-supposing the two roads to remain in competition But say that at the head office of a bank, either in Montreal or Toronto, the directors sit-down to consi der whether they shall establish a branch at Ingersoll or Stratford, or for that matter at Winnipeg or Brandon. What we may call strictly material circumstances do not interfere with their decision; a branch office can be opened in any town, east, west, north, or south, if only the business circumstances of the place warrant it. For a bank, three cents postage for a single letter makes the business connection with all places alike, or nearly like. But railway connection means the purchase or construction of so many miles of road at, perhaps, fifty thousand dollars per mile. The important differ ence which we point out is obvious at a glance to anybody of ordinary intelligence. It is therefore to be taken as a point proved that banks can never be monopolies, in the sense in which the term is now applied to railway and telegraph companies

REGULARITY OF MOTION FOR MILL SHAFTING.

It is frequently asserted by flour millers and by spinners of cotton and wool, that much better work can be done in a mill driven by water power than in one driven by steam power.

The assertion is, that the motion is steadier, or more uniform, and not so liable to "jerkiness," and periods of fast and slow speed.

It must be admitted that the more steady and perfect the motion of a mill for grinding flour, or for spinning or weaving, the better the quality of the work turned out, and the less trouble to the workers in attending to the machinery.

But it is a question of some interest and importance to determine why a steam-driven mill should be more unsteady than a gies. The impending amalgamation of the Great Western with

the action of the steam engine which produces this result?

The action of the steam on the piston is of varying intensity throughout the stroke, or rather each half-stroke. The piston at one end of the cylinder has no motion, steam is admitted from the boiler, and the piston moves with a gradually increasing velocity till the crank has made about one quarter of a revolution; by this time the piston has attained a velocity equal to that of the crank-pin (and at one point, for an instant, its velocity exceeds that of the crank-pin), then the velocity gradually diminishes till at the end of the cylinder it again stops and its motion is reversed.

During dis motion from one end of the cylinder to the pressure from the point of cut-off, and frequently from the point throughout its revolution, and to regulate this the fly-wheel is employed, the inertia of which absorbs excessive power when such is applied to the crank-pin, and again gives it off when that power is less than the resistance.

But the excess can only be absorbed by the velocity being increased, and can only be given off by the velocity being diminished. Hence there must be some inequality of motion from this cause, and how this can be avoided or prevented has long been a question of importance to engine builders who really studied the principles governing the action of the steam engine.

One comparatively recent method is to carefully adjust the weight of the piston, cross-head, and connecting-rod, to the velocity at which the engine is to run, and the pressure of steam carried. By this plan engines have been built to run at very high speeds and with remarkable steadiness of motion.

Another way has been to couple two and sometimes three engines to the one driving shaft, with the cranks set at such angles to each other as to divide the circle equally and so get a more uniform pressure throughout the entire revolution.

The conversion of the reciprocating motion of the piston into such uniform motion of rotation as shall meet the requirements of manufacturers of cotton and woollen fabrics is a subject well worthy of the study of engine builders. It will be found closely allied with the economical working of the engine, the one in a manner lapping over the other.

RAILWAY FUSION.

The Dominion elections are "on," and an unavoidable four weeks of political stir and excitement are before us, during which business generally will have to do with less than its proper share of attention. Fortunately, however, the period of interruption will be short, and a week before the Dominion Day fire crackers begin to fizz about our ears we shall be back to our steady work again, and may then give politics a rest for a while. But there is another element of disturbance in sight, which may for longer time to come distract our ener-