to go out of the country unmanufactured, and, if the matter is left to itself, there is every indication that the difficulty will be solved satisfactorily to everyone" in the sweet by and bye.

"To be let alone and not interfered with" was, I believe, all the fox asked when caught alone at night in the hen roost.

No, "A," you and your preceptor, Mr. C., have had things your own way quite long enough. You have already had two years "free logs" and have never raised your hands to give us "free lumber," and we have no right to ask Mr. Cleveland to pull your chestnuts out of the fire; so you must expect to walk up to the Captain's office and pay your log export duties like little men, and when you get the lumber duties removed our Government will, I have no doubt, consent to again remove the export duties, even if the changes in the rates of export duties should appear a little tiresome, as Mr. Charlton remarked.

When you had the timber and could dictate to us you insisted that $2 a thousand was only "a very moderate measure of protection to the American milling interest;" of course, to give this moderate measure of protection to the Canadian milling interest, our export duty on the logs should be $4; but we don't ask any protection, we simply ask $2 on the logs to offset the $2 you insisted should be imposed on the lumber by your carefully worded proviso, otherwise we should only be compelled to ask $1 export duty, and now that the tables are turned and we have the timber, we simply ask you to remove the lumber duties, which you are responsible for, and till you do so, to take a little of the medicine which you thought so necessary for our health when you prepared the prescription.

MONTREAL, Que., March 25th, 1893. WILLIAM LITTLE.

TRANSMITTING STRENGTH OF SHAFTING.

A WRITER in the Mechanical News says: The use of extremely heavy shafting is not advisable under any circumstances unless actually needed to perform the work required. Some imagine that a large shaft affording a very strong margin of safety, is the most economical to use; that, however, cannot be considered a logical and mechanical position, unless tempered with sound judgment and much wisdom, sufficient of both to select properly. That there should be ample margin of strength no one will attempt to deny, but shafting multiplies in strength so rapidly as sizes increase, that the unenlightened are apt to make the selections much too large when aiming at only ample strength margin. To show how easily uninformed mechanics may make mistakes of that kind, it is only necessary to say that a three-inch shaft has nearly three and a-half times the transmitting strength of a two-inch shaft. None unaware of the fact would ever guess at that difference and may fall into the error of selecting a three-inch shaft to safely do the work of a two-inch. To more forcibly illustrate the difference, it can be stated that a two-inch shaft properly sustained with bearings at reasonable intervals will safely transmit 20 horse power at 100 revolutions per minute, and at the same time resent the transverse strain due to weight of pulleys and the pull of belts necessary for transmitting that much power. Under like circumstances and equally proportionate condition, a three-inch shaft will just as safely transmit sixty-eight horse power at 100 revolutions per minute. Shafting should never be so large as to make it absolutely rigid; on the contrary, it should be to a fair degree elastic, with an ability to give and take between the power and the work. When too rigid, unless above all requirements in size and strength, the liability to break is increased, especially if the work is of an abrupt and severe character. Long lines of shafting having the power at one end and the work at the other, should be graduated in size; the work and being of a size required to safely do the work and the power end larger in proportion to the length of the shaft or the distance between power and work. If such shafts be of the same size the entire length, and that of a fair working size only, there will be too much elasticity in the aggregate which will tend to gradually weaken, distort and in the end destroy the usefulness of the shaft.

VIEWS AND INTERVIEWS.

Felling Timber.

Spaniards dislike to fell trees or cut live timber of any sort, and this fact perhaps accounts for the giant trees of California. The Spaniards, two centuries ago, pushed their way through Mexico to California, and, save the clearing of paths through the dense forests, not a twig did their axes chop down. Nor do the Spaniards transplanted to this continent ever destroy timber. With stubborn pertinaciousness strangely at variance with their lethargic dispositions, they continue to build their houses of stone and mortar at great expense of money and physical exertion, when timber in abundance surrounds them out of which they could construct log houses, as did other pioneers, at a minimum of cost and and labor. Why, the Spaniard does not even fell trees for firewood, but picks up dead limbs as they fall to the ground, or pulls them from the trees with his lariat.

Business Use of Slang.

In business, and especially in trade advertisements and announcements, increased force, and the kind of force that sticks, will be given to the whole ad., sometimes, by the use of an expressive colloquialism, which is often only another term for slang. "Ah! yer trolley's off," contemptuously sneered a scrubby little newsboy on King street the other day to a companion with whom he was endeavoring to straighten out a difference of some kind; "and 'your trolley's off'," remarks a writer in a daily paper, "is getting to be pretty generally used to express what has been indicated by 'You're off your base.' If Macauley or Charles Lamb offers anything more terse or pithy that would express to every one just what every one understands by 'You're trolley's off,' it would be worth quoting. Slang is perhaps richer in the history that touches the life and experience of all the people closely than most other words. Future generations may know the exact date when the trolley was first used, but if they could discover just when 'Your trolley's off' came into vogue they would know better when electric trolley cars began to be in general use and common to the people."

The Tallest Trees.

The Kew Bulletin tells us that "the tallest gum trees and the tallest trees in the world are found in the gullies of Victoria, several trees having been measured that were 400 feet high, and the highest was 471 feet." Visitors to the Indo-Colonial Exhibition will remember the size and beauty of other Australian woods, especially of the specimens exhibited in the Queensland court. The finest tree in the world is said to be the Agassiz, one of the Sequoia gigantea, 31 feet in diameter, nearly 300 feet in height, and of remarkable symmetry. At the Paris Exhibition of 1878 there were shown no fewer than 2,530 specimens of wood from India, belonging to 906 species and 432 genera. And a more recent exhibition, that held in Edinburgh in 1884, made us acquainted with the glories of the Japanese woods, and those of the Adaman and Nicobar Islands. Go to the East India docks and you will see the huge logs of padowk (Pterocarpus Indicus), a tree rivalling mahogany in the depth of the color of its wood and the density of its texture. Here, too, the stinkwood, the Oreodaphne bulata of South Africa, vies, in spite of its ill-chosen name, with the teak (Tectona grandis) of Burmah and Malabar. Or, if you prefer to see growing timber, cross over to Germany and note the massive beach trees of Hesse Nassau, whose branchless stems contain no less than 19,525 cubic feet per hectare, or nearly 8,000 cubic feet of timber per acre.

Hot Heads in Business Hats.

Many an important commercial transaction has been brought to an abrupt and unfortunate termination by a hasty word spoken. One writer has said: "A good temper is better than a legacy or a public pension." In the handling of the affairs of business there is hardly any calculating how far a persuasive and politic tongue counts. And the shrewd man of business is not unfrequently outwitted by his less capable rival simply because the one differs from the other in knowing how to keep his temper. Fred. Woodrow, in Age of Steel, has put the case in this way: "A business man with no bridle on his tongue or his temper, is as much out of place in commercial or industrial life as a mouse is in a street car, or a match in a powder house. No business can be run on hysterics and sulphur except that of a publisher of dime novels or a politician, or a demagogue on a platform or in a pulpit. Whoever heard of spasms in arithmetic, or of bile in percentages, or of a hot head in a business hat being the better for a stoker in his brain? It is true that bad tempered men often succeed in business, but in most cases it will be discovered that there is a cool head and a calm hand between the match and the straw. Anger is one thing, and irritability is another. No man can be blamed for making a protest against an employe who makes an easy chair of his work bench or a botch of his workmanship, or who boils over occasionally when imbecility demands a salary, but as a rule it serves its purpose best when wisely controlled and decently exhibited."

Cheapening Production.

As indicating the trend of the age it is doubtless true, as some one has said: "That never before has mechanical genius applied itself in this country as now to the solution of the question, how shall the cost of production be further decreased by the introduction of more efficient machinery? This is the keynote of the manufacturers who are now most successful. The search for specialties is not alluring, as specialty competes with specialty, and consumption is perforce limited. In staple articles, however, there is a constant trade. The manufacturer, therefore, who surpasses his fellows in the cheapness with which he can turn out staple articles of equal quality surpasses them also in securing a large share of the trade and better profits." Perhaps there is no use in kicking against the pricks, and necessity, the mother of invention, having driven trade to this resort, it will remain there until ejected by some more potent force. This force, it may be, will be the revulsion of sentiment that is already brewing, against the substitution of the imperfect, the nasty, the slip-shod, that in many cases is accompanying this cheapening of production. Or it may be a labor revulsion; for the demand of the consumer for cheapness and bargains in everything is forcing down prices of certain kinds of labor and the parent of the sweating system in many large cities is not the so-called sweater, but really the great mass of individual consumers, who insist on having cheap goods regardless of who suffers, even though it be their own neighbors and relatives.

PERFORATED BELTS.

AN engineer has been enquiring of us as to the value of belts perforated with holes. The argument of the dealer is, that the air is let out through these holes from under the belt, and being thus excluded, atmospheric pressure must be excluded, and the pressure of the atmosphere upon the pulley will help to secure a firmer grip without further tightening. This is on the supposition that the air is carried under the belt in the rush of the belt on the pulley. This engineer does not want to pay for perforated belts if they do not do what is claimed for them, and yet he wants all the adhesion he can get with the least tightening. We do not believe that atmospheric pressure has anything to do with the driving of belts, and has no part in causing them to adhere to a pulley, whether perforated or not. It has been found that at high speed belts do not adhere so well to pulleys as at a slower speed, and this has been claimed due to the air getting between the belt and pulley at the high speed and preventing less adhesion from atmospheric pressure. It can be quite clearly demonstrated that the centrifugal force of the more rapidly moving belt counteracts to some degree the adhesion of the belt and causes it to adhere so firmly. This is the cause of this peculiarity, not the taking of air under the belt.

NEW MEXICO TIMBER.

The forests of New Mexico cover an area estimated from 5,000,000 to 7,000,000 acres consisting mainly of pine, but with considerable quantities of spruce, with some walnut, ash, oak, hickory, etc.