

## Correspondence.

## How to Secure Trade with South American Countries.

To the Editor of the SCIENTIFIC AMERICAN:

I have taken an interest in your consular reports to further American trade abroad, which are published in the SCIENTIFIC AMERICAN SUPPLEMENT. They keep American merchants informed of where they are likely to find an outlet for their merchandise, but they do not inform the foreign consumer where he can buy the best and cheapest.

Speaking for this part of the coast (Chile), I can say that a lot of money is spent on price lists, catalogues and correspondence which produces but little business for the United States. The Germans are gradually getting the greater part of the trade, owing to their peculiar business methods. A number of German firms generally club together and send a commercial traveler to this coast, who is able to speak Spanish, English, French, and German. These men are, as a rule, capable of explaining the use and advantages of their employers' wares, and bring samples of the smaller articles with them.

They take note of the commercial standing of desirable clients or customers, and when taking an order make special inquiries as to shape, color, or weight of articles required and then allow from four to six months' time from date of invoice for payment.

Our American merchants send out catalogues with prices, as a rule, very much higher than the German quotations, and with a complicated system of discounts expect their customers to take the trouble to work out what an article will cost, when the most natural thing would be that the compilers of the price list or catalogue should ask only what they expect to get for their wares, so that when comparing two lists it will be possible at a glance to see what is the difference, if any, between them. There is no quotation, as a rule, as to the probable cost of expenses and freights to port of destination, and the terms are usually cash.

Most of the houses on the coast receive their merchandise from Germany, and dispose of a great part of them before payments are due; but, when dealing with the States, payment must be made long before the merchandise is even seen.

If the Americans wish to compete with the Germans in this market, they must either do as good or better. As a rule, very few rich foreigners remain here in trade; when they get a competence, they generally go home or change business, and give their juniors a chance. Business is done here generally on a credit basis, and there is not so much risk with moderate credit as might be imagined.

JOHN H. FRANZ.

Tocopilla, Chile, May 6, 1900.

[Our correspondent is correct. Many houses in the United States seem incapable of doing business with the great Spanish-American countries which lie at our very doors. Other firms who have advertised in export journals printed in Spanish, who have issued Spanish catalogues, and who have conducted their business in the same language, are reaping their just reward. Our consuls all over the world are constantly giving advice of the same tenor as our correspondent, and if our manufacturers and merchants do not heed them, they can hardly hope to achieve success in the export trade. The Bureau of American Republics and the Philadelphia Commercial Museum have done good work in telling us how to sell goods, and the Pan-American Exposition of 1901 will, doubtless, be a most valuable object lesson in the same line.—ED.]

## Moving a Telephone Switchboard.

A telephone switchboard at Detroit was recently cut in two and moved 15 feet without interfering with the service. Forty-two electricians besides many other workmen prepared for the move for ten weeks, and it was accomplished in ten hours, says The Electrical World. The western wing of the board was first swung around a distance of fully 20 feet, after which the other half was drawn 8 feet toward the center of the room. The wing was swung by the jack-screws, and then the other half of the board was drawn by means of wires fastened to the board at short intervals and extending from it to long iron rods which had been threaded. Large nuts turned by wrenches in the hands of over twenty men worked slowly on the rods, drawing them forward until it had been moved the entire 8 feet, the cables containing nearly 100,000 wires being slipped under the floor.

## The Peary Relief Expedition.

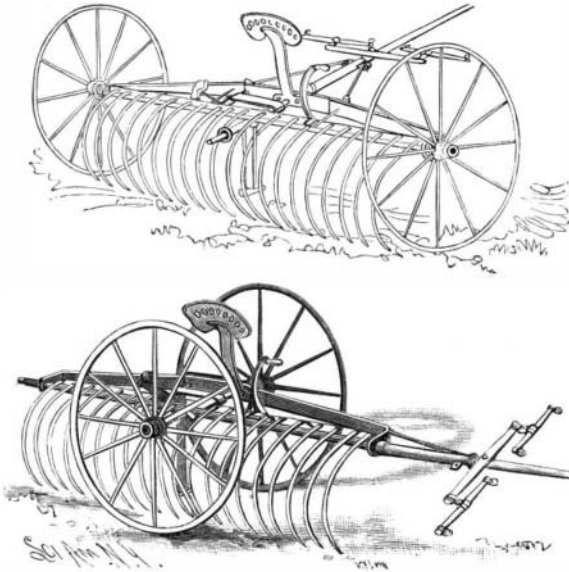
The Peary Arctic steamer "Windward" was ready to come out of the dry dock on June 9, at St. John's, Newfoundland, the repairs which have been in progress for several months having been fully completed. It will soon leave Sydney in command of Capt. Samuel W. Bartlett, to take on coal and supplies for the voyage to the north. It was hoped that the "Windward" could be newly engined, but it was found that the builders could not take up the contract. A new shaft and propeller were put in and the old engines were thoroughly overhauled and put in the best possible

order, so that her speed will be increased by at least a knot and a half. She will then be as fast as the "Kite" of the expeditions of 1891-92 and 1895. The hull has been thoroughly rebuilt, and the "Windward" is now in far better condition than she has been for years, new boilers having been installed by Mr. Harmsworth before he turned over the vessel to Lieut. Peary. The "Windward" will this year sail as an American ship, Congress having passed a bill; consequently the "Windward" will be the first Arctic expedition steamer to carry the Stars and Stripes since the "Polaris" started on her ill-fated expedition in 1871. The expedition will sail from Sydney about the first of July and go to Etah, North Greenland, after calling at Disko. At Etah, Lieut. Peary's winter quarters, instructions will probably be found, and if not, they will be waited for. The "Windward" will carry coal, lumber, arms, provisions, scientific instruments, etc. If Lieut. Peary has succeeded in carrying out his plans, that is to say, if he has discovered the North Pole, he will return with the ship. If not, the supplies will be landed. It is possible that the "Windward" will bring back the Robert Stein party, which, was landed near Cape Sabine by the "Diana" in August last.

## A TRUCK ATTACHMENT FOR SULKY-RAKES.

To provide a means whereby a hay-rake of great length can be so mounted that it will readily pass through a comparatively narrow space, is the object of an invention for which a patent has been granted to Charles E. Foreman, of Center, Colo.

This object is attained by the use of a long main and a short auxiliary axle, arranged at right angles to each other and provided with the usual spindles to receive the ground-wheels. The pole or tongue at its inner end is provided with a tubular portion which can be made to fit over any desired spindle. A jack is carried



THE RAKE IN OPERATIVE AND INOPERATIVE POSITION.

by the frame, so that it is possible to raise the implement.

In hauling the device through narrow lanes, the wheels are fitted on the spindle of the short auxiliary axle; and the tubular portion of the tongue is slipped over a spindle of the long main axle. The implement will then appear as we have pictured it in our lower illustration, the rake, it will be observed, being longitudinally disposed, so that it can be hauled through narrow openings. When the field is reached, the jack is used to raise the rake. The wheels and tongue are then removed, the former being applied to the spindles of the long main axle, and the latter to one of the spindles of the short auxiliary axle. The rake will then be in operative position and will appear as shown in our upper figure. Detachable braces are employed to hold the axles in adjusted position.

## The International Automobile Cup Race.

M. Charron, representing the Automobile Club of France, won the great International Automobile Challenge Cup race on June 14, the course being from Paris to Lyons, 351 miles. His time was 9 hours 9 minutes, his average speed being 38.4 miles per hour. The Paris-Lyons express railroad train covers a shorter route (318 miles) in 9 hours, but M. Charron would have made the same distance in 8 hours 16 minutes. MM. René de Knyff, Charron and Girardot represented France, M. Jenatzy, Belgium, and Mr. Alexander Winton, the United States. M. Charron used a Panhard-Levassor racing machine. M. Girardot arrived second, his time being 10 hours, 30 minutes, 23 seconds. The other competitors did not finish.

A NEW process for the extraction of rubber from the rubber tree consists in cutting up the bark and roots and soaking in dilute sulphuric acid. This decomposes the woody portions without affecting the India rubber. In this way the rubber and the bark and roots are separated.

## Paris Exposition Notes.

The Horticultural Palace, situated on the bank of the Seine, opposite the National Pavilion, has for some time been open to the public. It consists of two large greenhouses, placed end to end, but separated by a considerable space; at the back of this space is a building devoted to collection of seeds and the various accessories used in horticulture. The two main greenhouses have a number of hemispherical bays along each side to break the monotony of the structure and to add to the space inclosed. At the outer end of each building is a circular greenhouse, and one of these is occupied by the United States. A horticultural exhibition has been held recently, in which were seen a number of fine collections of flowers, especially the azaleas sent by a number of German houses, and in the French section the various exhibits of roses were remarkable. One of the Paris seed houses has a fine display of vegetables, and several fruit displays were seen, including oranges and lemons from the Mediterranean region; these, however, did not compare for extent or interest with the fruit display of the United States, which occupied the whole of the pavilion; the collections of apples, peaches, pears, and grapes were especially commented on, and many of these were marked "first prize." Of these, all but the apples are preserved in alcohol. The third horticultural exhibition has been recently opened; an official visit to the exhibition was made by President Loubet, accompanied by a number of distinguished visitors. A number of fine collections are shown; the display of rhododendrons and roses placed in the center of the Salle des Fêtes was especially remarked; they were placed there on account of the lack of space in the main greenhouses on the Seine. The latter were filled with a number of interesting flower and fruit exhibits; the fruit collection of the United States continues to attract attention; fruits are shown from the south of France and from other countries. With the President were Doctor Withmak, professor of horticulture at the Berlin University, and most of the members of the Horticultural Society of France. In the Austrian section the attention of visitors is attracted to a strange plant of thick appearance, placed under a glass shade; this is the *Asclepiindex capensis*. This plant, which is supposed to be the only specimen of its kind in Europe, was brought from the Cape of Good Hope nearly a hundred years ago; it has been impossible to obtain seed or new growths of this singular plant. According to observations made upon the growth of the plant, it is supposed to be several centuries old.

The work in the Electrical Palace and the large dynamo and boiler rooms adjoining it is now being rapidly carried on. In the foreign dynamo room the four large machines of German make are now completed, and will soon furnish current; the engines average about 2,000 horse power. The three Belgian dynamos, which average 1,000 horse power, are also nearly completed; the three machines of the Swiss section are also practically finished, and are commencing to run. The English dynamos will soon be finished; there are three of these machines; the largest, of Siemens & Halske make, is rated at 2,000 horse power. The Austrian section has two dynamos, one of 900 and another of 1,600 horse power, and that of Holland gives 500; Italy has two engines of 600 and 1,200 horse power; the latter machines are also nearing completion. The total capacity in the foreign section is about 22,000 horse power, representing 19 engines. In the French dynamo room the large engines and dynamos are nearly finished, and some of them are already running. The largest engines are those of the Fives-Lille Company, of 1,200 horse power; the Decauville machine, of 1,200; and the Crescent, of 1,500 horse power; there are 19 dynamos in all, giving a total of 20,000 horse power. The Thomson-Houston Company have a large dynamo built in France, connected to an engine of 1,200 horse power. As the building contains also the mechanical exhibits, a number of these are to be seen on the lower floor, along with the various collections of small dynamos, motors and various apparatus. The United States is represented principally by a number of exhibits of machine tools. The Roebing Company show a full-sized section of underground conduit for electric roads, and the General and Western Electric Companies will be represented. The Ingersoll-Sergeant Drill Company, the E. P. Bliss Company, Warner & Swazey, and many others, have exhibits on the lower floor. On the second floor are the lighter exhibits, and here have been erected a number of fine pavilions. That of the United States is the most prominent and covers the greatest space. The historical collection is now being put in place here, and a number of cases are already finished. Next to it is a structure of a different style, erected by the Allgemeine Company, of Germany, to contain a varied collection of apparatus, including the Nernst lamp. The Swiss pavilion is near it, and a number of large and small structures are being erected for the exhibits, which are being rapidly installed; it is expected that before long the interior will be sufficiently advanced to permit it to be thrown open to the public.