has the largest number of concerns engaged in the making of leather gloves of any country in Europe, the number being over 1,100. Of these 1,000 are engaged in the making of kid gloves. There are besides, 100 tanneries for kid and 40 tanneries for shoe-making leather. There are 85 glove concerns that work exclusively for export. Of the other countries, Austria-Hungary has 350, France, 225, England, 190; Italy, 100, and Sweden, Norway and Spain, between 50 and 60 glove manufacturing firms each. Russia has only about 30. There is in Germany no important glove making centre, the industry being scattered. In Austria the glove making centres are Prague and Vienna, in France, Paris, Grenoble, and Chaumont, in England, London and Worcester, in Italy, Naples, Milan, and Turin, in Sweden, Stockholm and Malmo, and in Belgium, Brussels.

LENGTH OF BELTING.

The following rules for arriving at the length of belting required to join up two pulleys are given in a recent number of Wood Worker. Suppose the distance between the centres of two shafts is 14 feet, the diameter of one pulley 8 feet and the other 4 feet, and the thickness of the belt ¼-inch. Then half the circumference of the 8 foot pulley is 12.5664 feet, and half the circumference of the 4 foot pulley is 6.2834. Three times the thickness of the belt is ¾ inch, or .0625 feet. Then 28 plus 12.5664 plus 6.2834 plus .0625 equals 46.9103, or 46 feet and 10 15-16 inches is the length of belt. Therefore, the rule for a straight belt is this: To twice the distance between the two centres add half the circumference of each pulley, with three times the thickness of the belt.

To find the length of a cross belt the rule is more complex. First, the distance from the centre of each pulley to the centre of the point where they will cross must be obtained. If both pulleys should happen to be the same diameter, the cross will occur exactly in the centre of the space between them. If not, then that point will be in proportion to their respective diameters and may be found by the following rule: Divide the diameter of the larger pulley by that of the smaller and add 1 to the quotient. This will represent the number of parts into which the distance between the centres is supposed to be divided. Then, as the whole number of parts is to the parts taken by the larger pulley, so is the whole distance between the centres to the point where the cross will occur. Example.—A pulley 8 feet diameter is to drive one of 4 feet with a cross belt ¼-inch thick, the distance between the centres being 14 feet. Required the distance to the point where they will cross and the whole length of the belt. First find the point where they will cross by the foregoing rule—8 divided by 4 equals 2, plus 1 equals 3. This represents that the 14 feet are supposed to be divided into three parts, and as the diameter of the small pulley is contained in that of the larger one twice it shows that the two parts of the three must be taken by it—3 is to 2 as 14 is to 9 feet 4 inches. Now as the whole distance is 14 feet and the larger pulley requires 9 feet 4 inches the distance from this point to the smaller pulley is 4 feet 8 inches, so that the distance from the centre of the large pulley to the point where the belt will cross is 9 feet 4 inches, while the other from the same point will be 4 feet 8 inches. If a horizontal line be drawn through the centre of each pulley, extending from one to the other, and a perpendicular line also drawn through the same points intersecting it at right angles, there will be two right-angled triangles formed, the base of one being 9 feet 1 inches, with a perpendicular equal to the radius of the 8 foot pulley, or 4 feet, while the other base will be equal to 4 feet 8 inches, with a perpendicular equal to the radius of the 4 foot pulley, or 2 feet, the belt in each case representing the hypotenuse, and as the square root of the sum of the squares of the base and the perpendicular of any right-angled triangle equals the hypotenuse, it is evident that the hypotenuse of these two figures must represent the length of belt between these two parts.

The operation perhaps will be more simple and easier understood if the whole be reduced to inches. Then 112 times 112 equals 12,544 inches, and 48 times 48 equals 2,304 inches, being the square of the base and perpendicular in inches. Then 12,544 plus 2,304 equals 14,848, the square root of which is 121.85 inches. With the other proceed in like manner—56 times 56 equals 3,136, and 24 times 24 equals 576, and 3,136 plus 576 equals 3,712, the square root of which is 60.92 inches. Now if each of these sums is doubled, and half the circumference of each pulley, with three times the thickness of the belt, be added together, their sum will be equal to the whole length of belt required in inches which, when reduced to feet, will be found to equal 48 ft. 1½ inches.

AN EGYPTIAN COTTON BELT.

The British Cotton Growing Association, which, with the hearty co-operation of the Colonial Secretary, Joseph Chamberlain, is striving to render the British Empire independent of the United States so far as raw cotton is concerned, is now paying special attention to Upper Egypt, where, it is asserted, the association can develop a cotton belt dwarfing that of the Southern States of America. Major Count Gleichen, secretary of the Sirdar of the Egyptian forces, Major-General Wingate, addressing the association at Manchester recently, said the experiments now concluded on the banks of the Nile show the quality of the cotton grown there to be the equal of any in the world. There are available fifteen million acres of irrigated land, and the only difficulty is the labor supply, the dervishes having depopulated the Soudan, but the completion of the Suakim-Berber railroad is expected to solve the problem, besides furnishing an outlet for the crop.

ROPE AND TWINE MANUFACTURING IN NOVA SCOTIA.

Some thirty years ago, the shipbuilding industry in Nova Scotia, New Brunswick and Prince Edward Island had assumed large proportions, wooden sailing vessels of large size, which took an important part in the ocean carriage of the world were built, and to supply the cordage to equip these vessels the rope works, now operated by The Consumers' Cordage Company, at Dartmouth, were built as a private enterprise in 1869. The works now occupy ten acres of land and comprise some thirteen buildings. The original establishment consisted of the rope walk, upwards of 1,200 feet from end to end and probably the longest building in the provinces, the three-story brick building and the tarring house. The rope walk to-day is the same as at the beginning, it is capable of turning out ten tons of rope per day, and is equipped with machinery of the most approved type on which cables of the largest size are made. The other buildings which have been added from time to time are of wood and are one story only. The machinery is up-to-date, a portion having been recently built in the company's own machine shop, while the greater part is of English and American origin and designed especially for the manufacture of cord-