Grain Elevators in the Argentine Republic.

Consul Baker, of Buenos Ayres, reports that the elevator and grain deposit in that city, which goes by the name of the Buenos Ayres Central Produce Market, is a very large and imposing structure. The building covers an area of 47,000 square meters under roof and is three stories high, with capacity for the storage of 238,000 cubic meters. It fronts upon the Boca or Riachuelo port, with a fine dock along the landing. The total area of the premises embraces over 30 acres, or 127,478 square meters. Besides being a deposit, it is also a general market for all kinds of grain, wool, hides, and other varieties of the produce of the country. This market is not only a center for all the different railway companies, each one having its tracks running into the deposit, but it is also arranged, by separate entrances, to receive bullock carts coming with produce from the interior. Vessels for foreign ports are loaded directly from the elevator, and its machinery for handling grain is of the first order, the greater portion having been brought from the United States. This immense edifice, although already partially in use, is not yet completed, and its total cost, it is estimated, will be in the neighborhood of $5,000,000.

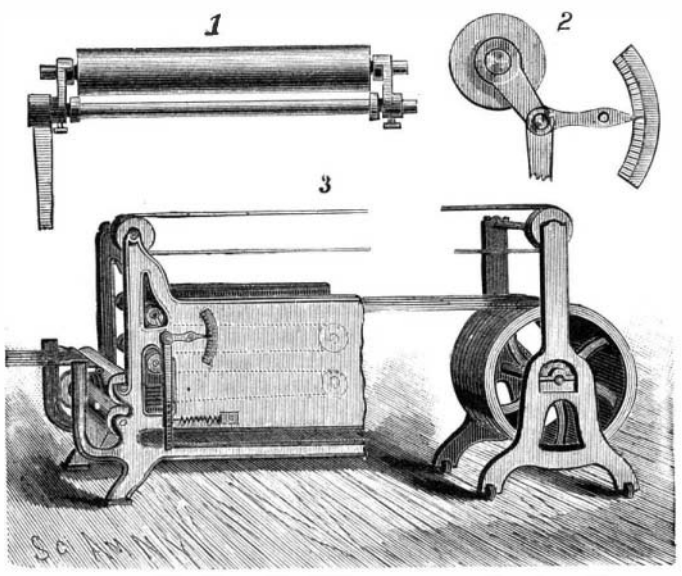
The elevator in Rosario, province of Santa Fe, is called the "Graneros de Rosario" (Rosario granary), and has been in operation several years. It is situated opposite the depots of the Central Argentine Railway, thus making it very convenient for handling grain arriving by that road from the richest agricultural districts of the province. It is eight stories in height, and in most of its details is constructed like many of the elevators of Chicago. Capacity upward of 300,000 bushels.

Besides this, there are now almost completed in Rosario an elevator for the Buenos Ayres and Rosario Railway and another for the Argentine Central Railway. The contractor for these is Mr. J. C. McLennan, of Chicago. The capacity of these is 250,000 bushels each. The machinery is all from the United States, and mostly furnished by the Buckeye Company, Salem, Ohio, and Poole & Hunt, of Baltimore. The cleaning apparatus is from Moline, Ill., the belting from the Boston Rubber Company, and the steam pumps from George Worthington, New York. They will each cost in the neighborhood of $300,000, and everything in connection with them is of the most modern style.

A TENSION INDICATOR FOR YARN DRESSERS.

The device shown in the accompanying illustration is designed to enable the operator to see at a glance how much tension is required on the winding reel. It has been patented by Mr. Thomas J. Sands, of No. 27 Orchard Street, Utica, N. Y.

A roller is mounted in bearings in arms secured by binding screws to an oscillating shaft, as shown in Fig. 1, the latter shaft being mounted in suitable bearings attached to the side frames of the yarn dresser. On one end of the oscillating shaft is a downwardly extending arm having at its outer end a series of apertures, to one of which is secured one end of a spring, attached by its other end to the side frame, as shown in Fig. 3, this arm having a pointer, shown also in Fig. 2, to indicate measurements on a graduated scale. The yarn dresser is in direct connection with the winder, and when the reel begins to take up the section of yarn, the yarn accumulating on the reel would ordinarily cause

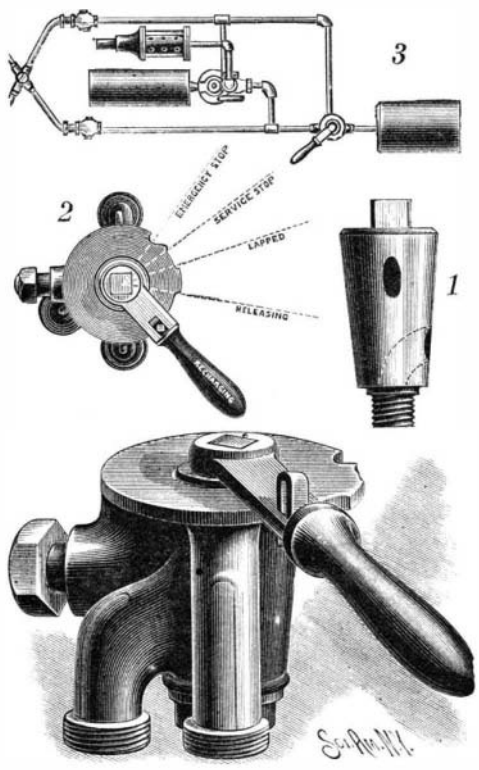


SANDS' TENSION INDICATOR FOR YARN DRESSERS.

the latter to tend to take up more yarn than would be delivered by the dresser, producing a strain on the yarn. This is avoided by adjusting the tension device on the belts operating the reel of the winder, causing the belts of the reel to slip as the diameter of the reel is increased, the slightest abnormal strain on the yarn in the direction toward the reel causing the roller to swing and the shaft supporting it to oscillate, whereby the pointer changes its position on the scale, and the operator can see at a glance how to adjust the tension to cause the roller to assume its natural position. This adjustment is effected by means of the spring in connection with the series of apertures on the arm extending downwardly from the oscillating shaft.

AN ENGINEER'S VALVE FOR AIR BRAKES.

A valve for automatic air brakes, designed to allow the recharging of the auxiliary reservoir under each car without releasing the brakes, and adapted to regu-



LEEMAN & JONES' VALVE FOR AIR BRAKES.

late the force of the brakes by releasing or reapplying at any time without fully releasing, is shown in the accompanying illustration, and has been patented by Messrs. Charles E. Leeman and Albert W. Jones, of Salida, Col. Fig. 1 is a side view of the valve plug, Fig. 2 being a plan view of the improvement applied, while Fig. 3 shows its application to the Westinghouse system. The valve body has opposite pipes connected with the main air reservoir and the train pipe respectively, with a third pipe also connected with the train pipe and with the exhaust opening of a triple valve, by which communication is established between the main air reservoir and an auxiliary reservoir. The valve plug has a transversely extending opening adapted to connect the inner end of the pipe from the main air reservoir with the upper end of the pipe connecting with the train pipe, and in the plug is also arranged an opening which leads from one side of the plug to the center and through its lower end to the outside. The latter opening has one side angular, with the other side curved, the angular side gradually permitting the air to escape, to prevent all jerks in applying the brakes. This opening is adapted to register with the pipe connected with the triple valve and with an extension of the pipe connected with the train pipe. When the operator desires to recharge the auxiliary reservoir, he moves the lever to the position shown in Fig. 2, moving it to the second position to release the brakes, and to "service stop" to apply them, etc. By the use of this valve it is designed to place the control of the brakes and train entirely in the hands of the engineer, without necessity for adjustment by the trainmen, to use as small or great amount of pressure as desired on the brakes of each car, while the brakes may be applied gradually without jerking of the train.

Experiments with Fibrous Plants.

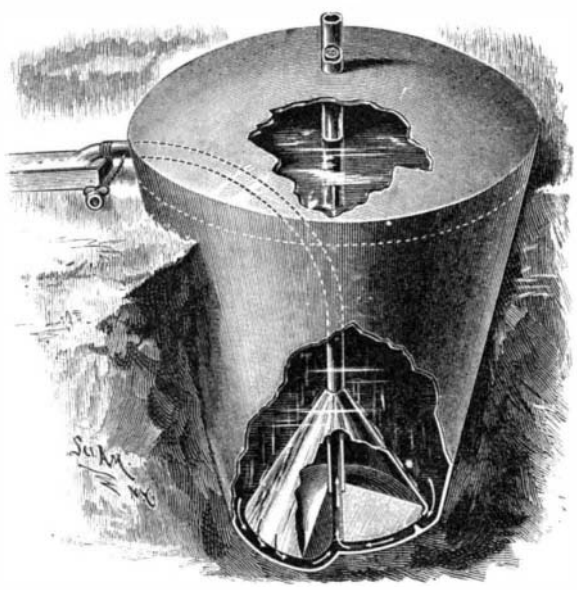
At London, in the Lambeth district, a factory in charge of Mr. Taylor Burrows has been started for the treatment of various kinds of fibrous plants. If the work prospers, textile manufacturers in all other countries must be greatly interested. There have been many attempts to substitute different fibers in the manufacture of textiles for silk or wool, and occasionally they have been successful, but oftener have failed, and this new factory has been established with a view to testing these sundry fiber-bearing plants by existing machinery and processes, and to discover wherein the treatment has hitherto been defective, and, if possible, to meet it.

A London journal writes of the new enterprise as follows:

"For want of time, money or knowledge, or of all three, a useful or even valuable addition to our stock of fibers may so far have been lost. Samples of fibrous plants of every species can now be submitted for carefully supervised trial, and if the present machines or processes prove unsuitable in some little detail or other, the defect will be discovered and remedied. In like manner advice will be given as to the best machines and methods of treating fibrous plants, and the opportunity will be afforded of studying the various processes of production and of acquiring a knowledge of the most scientific methods of preparing fibers. In fact, the present enterprise promises to develop into an important public technical school, for it is proposed to establish branches in textile manufacturing and cognate centers. The various processes to be carried out at the model fiber factory comprise the rapid retting and ungumming of fibrous plants; automatic breaking, scutching, combing and hackling; spinning into simple or mixed yarns; cottonizing and woolenizing fibers to imitate fine cotton or wool, suitable for the manufacture of various mixed and cheap fabrics, as well as for fine and costly goods; bleaching and dyeing the same, and the rapid drying of fibers by means of cold air. The factory consists of a spacious warehouse and storeroom for machines and samples, with offices annexed, and a large machinery and operating room, with a laboratory and an engine and boiler room. There is also a spinning machine in order to test the various fibers in this respect, and to see how they are likely to meet the requirements of a commercial article. Another important improvement is also being introduced at this factory, and that is the rapid retting of flax. The usual method of retting is to soak the flax in water for about three weeks. By the new process this will be effected in about a couple of hours. This quick action is brought about by submitting the flax to the influence of heat and moisture."—*Bradstreet's.*

AN IMPROVED CISTERN.

The accompanying illustration represents a cistern designed to be self-cleaning at each rainfall, and provides for the flowing off of the water from the bottom of the cistern as the fresh water enters at the top. It has been patented by Mr. Caleb S. Johnson, of Beaufort, S. C. The supply tube or rainwater pipe extends a short distance below the cover and is provided with a strainer, while through one side of the body, near the cover, is projected a curved tube to the lower end of which is secured a block having a vertical bore. A



JOHNSON'S CISTERN.

conical deflector is attached to the block and to the lower end of the curved tube, the block being supported by suitable feet upon the bottom, whereby a space is obtained for the reception of sediment. The deflector has apertures near its base and apex, intersections within governing the current thus produced, and is designed to cause any sediment in the water to pass downwardly in contact with its sides as it falls to the bottom, to be thence forced out upwardly through the central curved pipe when the cistern fills, or is to be flushed for cleansing purposes.

Steel Car Wheels.

The following test of steel car wheels made by the American Steel Car Wheel Co. took place recently at Boston, in the presence of several prominent railway superintendents: A 33 inch car wheel was placed on two solid iron blocks, rim resting on each block. A weight of 525 lb., falling at a height of 17 feet, struck the hub 25 times without any effect except battering the metal. It was then dropped 10 times on the rim without a fracture. Then a weight of 1,400 lb. was tried, falling at a height of 17 feet, struck the wheel 11 times, but failed to break it, showing it to be practically indestructible. At another exhibit, in order to test the expansion and contraction of the metal, a wheel was buried in sand and a charcoal fire built around the tread until it was brought to a red heat. Then it was taken out and exposed to the atmosphere, which had no effect on it whatever. This demonstrates that the wheel is a safe one. These wheels are in extensive service.