

THE GREATEST OF PIPE ORGANS.

BY HELEN LUKENS JONES.

The world's greatest pipe organ is being built in a western factory for the Convention Hall in Kansas City, Mo. It has been leased by the management of the St. Louis Exposition, and will be temporarily installed in the Festival Hall on the fair grounds, where its titanic voice will bestow a musical benediction on the opening ceremonies of the great international exposition.

Some of the most renowned organists in the country have been engaged to play on the mammoth instrument, and acres and acres of automatic music are being prepared to fill in the interims between the performances of the virtuosos. At the close of the fair the organ will be permanently established in the Convention Hall at Kansas City.

This wonderful American instrument is the largest in the world. It has 10,000 pipes, 140 stops, and weighs 125 tons. It measures 100 by 27½ feet, and is 40 feet high. Eighty thousand feet of lumber are being used in its construction, and it will require ten freight cars to transport the finished instrument to the exposition grounds at St. Louis. It will cost \$67,000.

The pipe organ in the town hall at Sydney, N. S. W., has heretofore been the champion music producer of the world. It has 128 speaking stops, 9,000 pipes, and covers 1,600 square feet of floor space. The largest organ in America is in the Chicago Auditorium. It has 109 speaking stops and 7,124 pipes, is 44 feet long, 25 feet wide, and 34 feet high.

During the last five centuries, or practically speaking, ever since broken reeds gave inspiration to the musical inventor, organ building has progressed steadily, until to-day it has culminated in this new pipe organ.

A visit to the immense brick factory where the organ is nearing completion, and a long tramp through the workrooms where great numbers of men are busily employed in fashioning the various parts of the great melody box, is a revelation in musical industry.

The frame of the organ, which is equal in size and appearance to a house of several stories, is made of 3 x 12 Oregon pine, which is superior in strength and

pillow blocks on each shaft, which are fastened to heavy angle-iron plates. The crankshafts are so arranged from the countershafts that they turn toward each other. By this arrangement the strain of tying the two sets of feeders together on each bellows will

give it a perfect alignment, and there will be no side drawing to interfere with the folds of the feeders.

All regulators throughout the organ have two square feet per speaking stop, so that there will be ample supply of wind under all conditions. The wind power

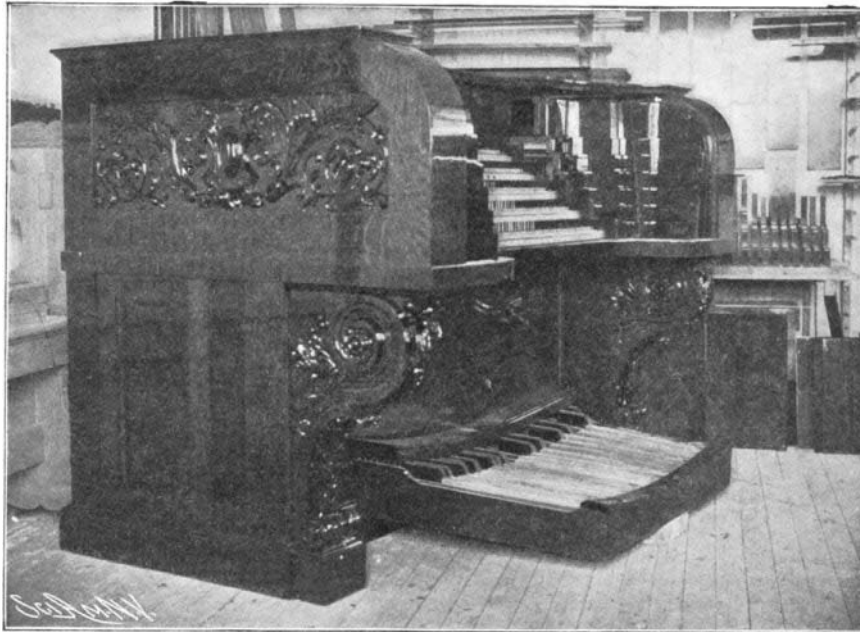
of this organ exceeds that used by any other organ in the world. There are two motors of twelve and one-half horsepower each, and one motor of two horsepower. The batteries have four cells of two volts each. A generator provides a direct current of 10 volts and 40 amperes, which will supply the storage batteries without charging through the lamps. The motor generator is so arranged that the organ can be played incessantly for six months or more without hitch of any kind. If an ample amount of amperes is supplied and the current kept up to 8 volts, but not over 8½ maximum, the organ can be played continuously, a feat which cannot be accomplished by any other organ in the world.

There are 1,300 magnets in the organ, both key and draw-stop action. The organ contains 115 miles of wire in the cables and magnets, from No. 20 to No. 34 B. & S. gage. Five automatic swell engines operate the swell folds.

There are over 7,000 open circuits in the organ. The coupler contacts clean themselves automatically, so the coupler action never gives any trouble. There are more than 300 pounds of brass rod and strip in the organ. There are 1,616 automatic combination knobs, for setting combinations throughout the organ.

The organ is being built under the Fleming electro-pneumatic system. Mr. W. B. Fleming, the designer and architect of this instrument, has incorporated all of the known musical devices in the organ, besides adding numerous absolutely new creations in the way of sound producers, the products of his own genius.

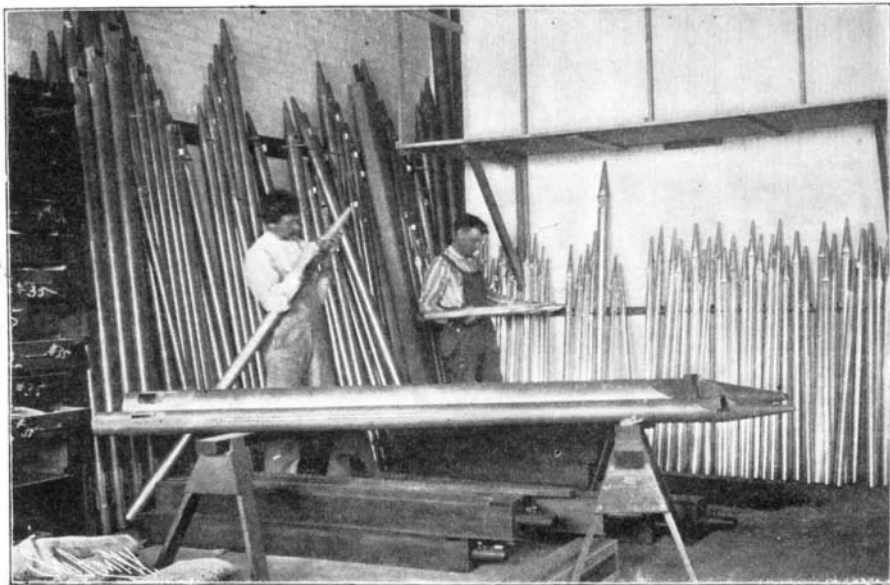
There are 90 pistons in the organ, 45 on the main console and 45 on the automatic. The placing of this unprecedented number of pistons between the keys, for the purpose of operating the combination action on the manuals, is a notable achievement for the musical world. Another achievement almost as remarkable is the placing of 36 couplers on the main



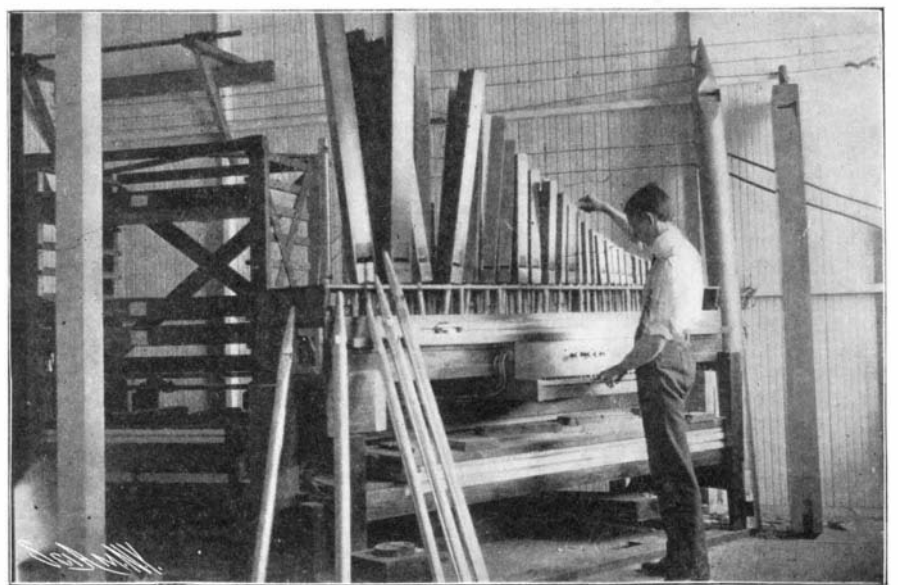
The Huge Console.



In the Pipe Room.



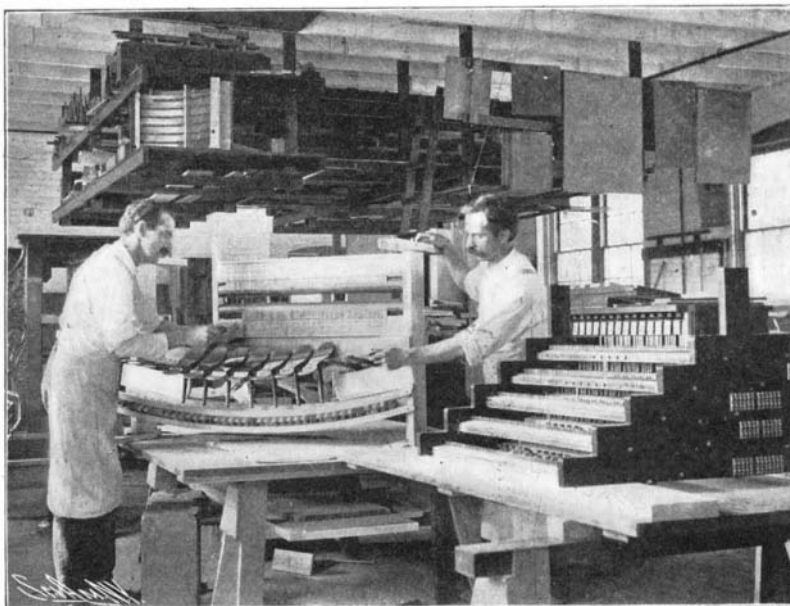
Inserting the Reeds in the Pipes.



Machine by Which Each of the 10,000 Pipes Is Tuned.

stiffness to any other timber. Other parts of the organ, including the wooden pipes, are made of first quality of sugar pine. Poplar is used only for bellows folds and rack boards. The main console is constructed of quarter-sawn white oak finished medium antique, and the outer frame casing of the organ will be of 10,000 feet of the finest quartered oak.

The chests are twelve feet long with large windways and channels. There are five 12 x 6 bellows for the main and pedal organs, each bellows having three square feeders attached. Four bellows in tiers, one above the other, are operated by four crankshafts made of heavy steel shafting, with extra large steel cranks of ten-inch throw. There are two crankshafts on either side of the bellows. The two upper ones operate the two upper sets of feeders, while the two lower ones operate the two lower sets of feeders. The feeders are tied together with self-oiling V-plates, so that each crank operates on two feeders of each side. Each crankshaft is made of 1 15-16-inch diameter steel shafting, with six



Pedals and Keyboard.

THE GREATEST OF PIPE ORGANS.

console and 23 on the automatic. The divisions of the great organ are as follows:

First Division—13 speaking stops, 793 pipes.

Second Division—13 stops, 1,342 pipes.

Swell First Division—all string tones 11 stops, 1,098 pipes.

These string tone stops, containing unlimited possibilities for wonderful orchestral effects, are placed in a separate apartment.

This is an entirely new departure in organ building.

Swell Second Division—33 stops, 1,769 pipes.

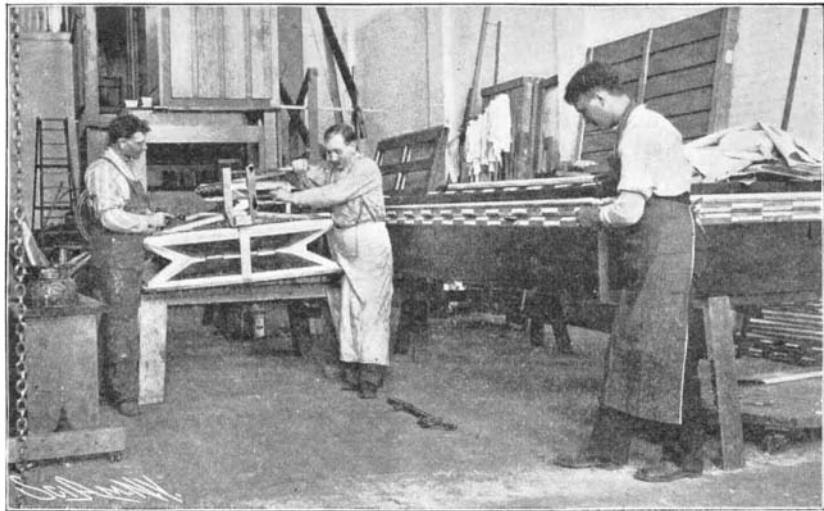
Choir—15 stops, 1,464 pipes.

Solo Organ—16 stops, 1,385 pipes, 2 drums.

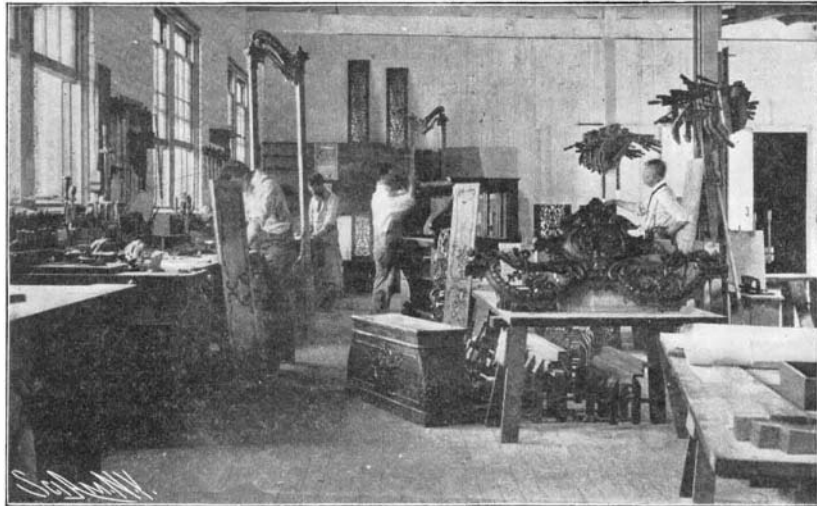
Echo Organ—12 stops, 1,170 pipes.

The echo organ is practically an independent section, and will be placed about 300 feet from the main organ. Though it has its own motor and bellows, it will be under the control of the main console.

Pedal Organ—27 speaking stops, 1,012 pipes. The pedal organ will form the



Constructing the Bellows.



Carving Wood for the Case.

basis of every melody. The largest metal pipe in the organ is 37 feet in length and 17 inches in diameter. It is made of No. 24 zinc, and weighs 800 pounds. The largest wooden pipe is thirty-two feet long, and is made of 2½-inch Oregon pine. Its proportions are so immense that a Shetland pony was placed inside and photographed. From these two great pipes radiate the 9,998 others, each with its own individual voice and size and personality. Some of them are infinitesimal in size, and produce microscopic voices, scarce more than a sigh or a faint chirp.

In the five manuals there are 61 notes. The key action is of the single-contact system. Each contact in the automatic console has a spark arrester.

It has taken several hundred sheepskins to cover the pneumatics for the chests. A number of girls and women were employed in this department.

A somewhat unusual mechanical device is the application of "double touch" to three of the manuals, great, swell, and choir, by which the performer, by giving from the fingers three times the pressure normally required, may produce three sets of notes that materially magnify the wave of melody.

Rare Earths in Oklahoma.

One crumb of comfort the government assayers have for mineral prospectors in the Wichita Mountains district of Oklahoma. The chemists of the United States Geological Survey could find no trace of gold in all the 71 samples from that district that they assayed for the yellow metal. Ten samples were examined for silver, but in only two samples was any indication of silver detected. These showed only 0.14 ounce and 0.92 ounce per ton respectively. In two other samples copper was found, 0.351 per cent in one sample and

10.81 per cent in the other. One sample also showed 3.63 per cent of lead. In these cases, however, the small amount of ore available more than offsets the value. Disappointing as the results of this investigation must be to the people of Oklahoma, some basis for their hope of mineral wealth may be contained in the statement that, although no precious metals were found in the samples examined, discovery was afterward made in one of the samples of the interesting mineral called columbite. It is not known that columbite has any specific value of its own, but its presence is always significant, for it is known to have a fondness for the society of certain minerals that contain rare and valuable earths. Among these is samarskite, the source of thorium, which is in demand for use in the manufacture of mantles lights for Welsbach lights. Pitchblende, another of these minerals, is the principal source of radium, and shines nowadays with more than usual effulgence in the firmament of mineral substances. It may therefore come to pass that a small quantity of rare earth is worth almost as much to Oklahoma as a large quantity of precious metal. Requests have been made by the survey for other samples from near Roosevelt, the locality whence came the sample containing the columbite.

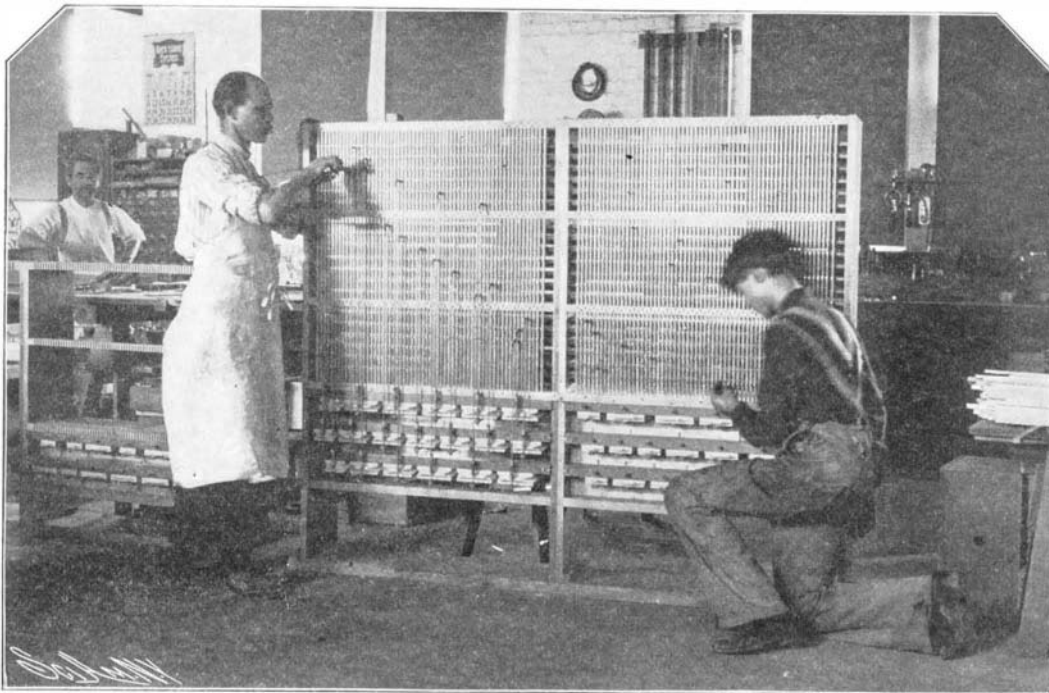
It was Mr. H. Foster Bain, of the United States Geological Survey, who, at the request of the Secretary of the Interior, made a reconnaissance of the Wichita Mountains

last fall, with the especial purpose of studying the reported occurrence of ores of copper, lead, and precious metals. He collected a large number of samples, which were carefully assayed by Mr. Eugene T. Allen, chemical geologist of the Survey. In view of the absolutely uniform absence of even a trace of gold and only the occasional presence of a small quantity of silver, copper, or lead, Mr. Bain was forced to report that none of the prospects examined showed any ore in the proper sense of the term, and that none of them had any present or probable future value. He added that it was impossible to say whether future prospecting might not reveal other occurrences which do have value. It is believed, however, that the prospects examined were fully representative and had in many cases

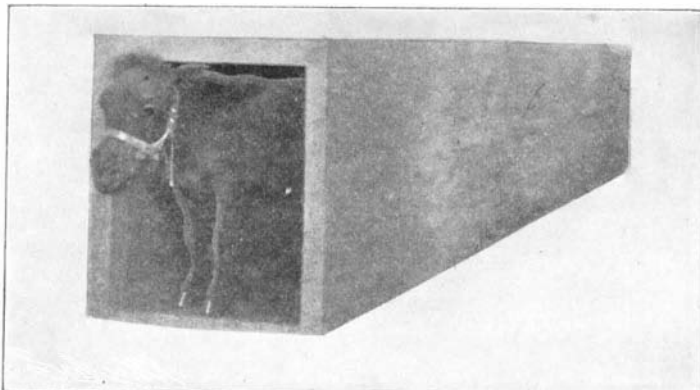
been developed enough to allow a proper judgment to be made as to their value. In no case do they offer any encouragement whatever for additional prospecting.

Mr. Bain expects to discuss the matter more in detail in a paper to be included in a bulletin entitled "Contributions to Economic Geology, 1903," which will probably be ready for distribution about May 1. One significant discovery made by Mr. Bain was the occurrence of molybdenite, which would seem to lend some plausibility to the consoling theory that in depriving the Wichita Mountains of the precious metals it could so easily have harbored, Nature made what amends she could and granted them a few rare earths in place of rock-bearing rocks.

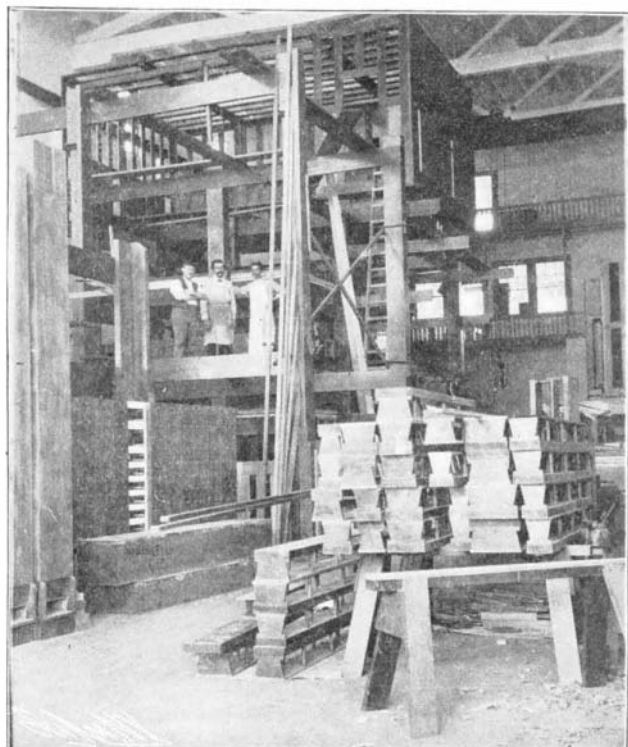
The biggest searchlight in the world will be seen at the World's Fair. It was finished in an electric plant at Lowell, Mass. It weighs nearly four tons, is of 5,250,000 candle-power, and projects a beam of light seven feet in diameter.



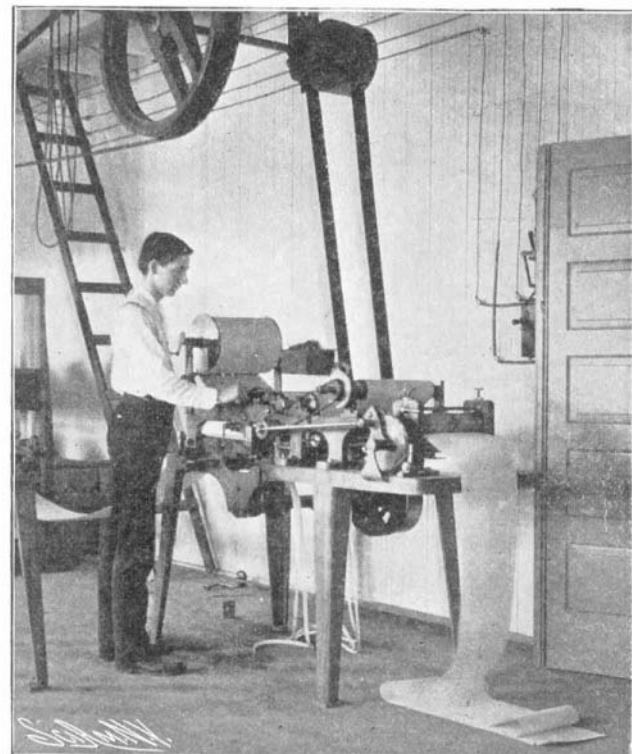
Reed-Actuating Devices.



Shetland Pony in the Largest Pipe (32 Feet Long).



Part of the Organ's Framework.



Making Automatic Music.

THE GREATEST OF PIPE ORGANS.