The semi-annual meeting of the National Association of Cotton Manufacturers was held on Sept. 27th to 30th inc., at the Equinox House, Manchester, Vt., and was attended by the various members of the association from the different parts of the cotton manufacturing districts of the United States.

The Address of Welcome was delivered by His Excellency, John A. Mead, LL.D., Gov. of the State of Vermont, and which was ably responded to by R. M. Miller, Jr., Charlotte, N. C.

The sessions were formally opened by Franklin W. Hobbs, pres. of the Ass'n., who delivered his customary address relative to the conditions of the cotton trade and suggestions for betterment of the same.

As is customary, papers relative to subjects of interest to those engaged in the industry were read and discussed. Among these were: Organization of the Carding Department in Cotton Mills, by Henry K. Rowell, Boston, Mass.; Executive Management of a Textile Plant and Its Relation to the Market, by Arthur H. Gulliver, Norristown, Pa.; The Examination and Testing of Cloth, by Wm. Myers, Manchester, Eng.; The Alignment of Shafting and Machinery, by Geo. W. Loggie, Boston, Mass.; An Exact Method of Measuring the Cotton Staple, by Dr. N. A. Cobb, U. S. Dept. of Agriculture; The Work of the Monetary Commission, by Hon. John Wingate Weeks, West Newton, Mass.; Tests on the Transmitting Capacities of Different Pulleys in Leather Belt Drives, by Prof. Will Miller Sawdon, Sc.D., Cornell University, Ithaca, N. Y.; The Enforcement of Contracts of Sale, by Walter S. Newhouse; The New York Cotton Exchange in Its Relation to Merchandizing Cotton, by Geo. W. Neville, pres. New York Cotton Exchange; Practical Considerations in Cotton Mill Illumination, by J. M. Smith, Cleveland, O.; Textile Education from a Manufacturers Standpoint, by Edwin H. Marble, of the Curtis & Marble Machine Co., Worcester, Mass.; The Work of the Tariff Board in Connection with the Cotton Industry, by Henry C. Emery, Chmn. U. S. Tariff Board, Washington, D. C.; and the Introduction of Chemical Bleaching into the U. S., by A. M. Robertson, Lakewood, R. I.

Before adjourning it was decided that the next semi-annual meeting of the Association would be held at the Mechanics' Fair Building, Boston, Mass., April 24th and 25th, 1912.

CHRONOLOGICAL EVENTS IN THE TEXTILE INDUSTRY.

(*Continued from page 45.*)

1784. Berthollet, the well known French chemist, discovered that an aqueous solution of chlorine discharges vegetable colors.

The hosiery warp frame made practical for common use.

Fourteen bales of cotton were shipped from the U. S. to Liverpool, Eng.; of these, eight were seized by the English authorities as being improperly entered, they claiming that it was impossible to produce that amount of cotton in the U. S.

1785. Dr. Edmund Cartwright invented the power loom.

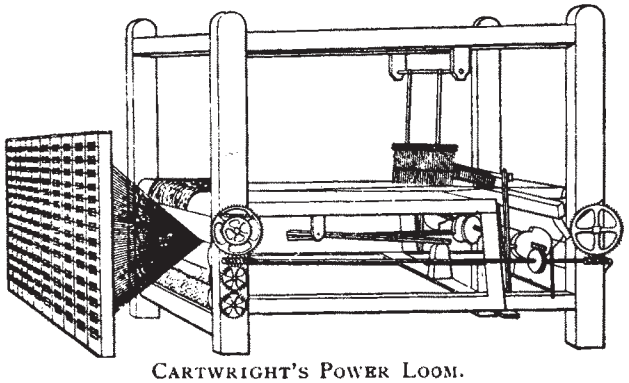
Arkwright's patents annulled.

The cylinder printing machine for calico invented by Bell, of Glasgow, Scotland.

The first steam engine for driving cotton machinery erected at Popplewick, Notts, Eng.

1786. The cultivation of cotton started on a systematic scale in Georgia and South Carolina.

Lancaster, Penna., those days the largest inland town in the U. S., then had twenty-five weavers of woolen, linen, and cotton cloth, three stocking weavers and four dyers.



CARTWRIGHT'S POWER LOOM.

Dr. Cartwright obtained a second patent for a loom, in which he attempted to use warp and filling stop motions. He also invented the self-acting temple for looms.

A complete set of brass models of Arkwright's machines were made this year in England, for shipment to the U. S., but were seized on the evening before the ship sailed.

John Rogers, of Mansfield, Eng., made the first point net on a frame invented by him.

1787. Dr. Cartwright obtained a third patent for improvements to his power-loom, the same comprising spring-picking motion, stop-motion when shuttle failed to enter the box, etc.

In this year cotton machinery was first introduced into France.

1788. First cotton factory in New England, built at Beverly, Mass.

Joseph Alexander and James McKevin, Scotch weavers, put up in the market house, at Providence, R. I., the first fly shuttle hand loom in America; it was used for weaving corduroys.

The first power loom in America was built and worked this year in Philadelphia.

Dr. Cartwright obtained a fourth patent in England, for his power loom, using eccentrical cams to drive the batten with a variable motion.

Thomas Clarke obtained, in England, a patent for the use of false beams in connection with the looms of those days, which gave way when the shuttle was trapped; also for attaching the pickers to a rod passing under the shuttle race from one picker to the other.

Brookhouse, of Leicester, Eng., invented *gilling* for the manufacture of worsted yarns.

Sea Island cotton first grown in America.

1789. Dr. Cartwright obtained a patent for combing and spinning machinery.

1790. W. Kelly, of Lanark, Eng., was the first to operate the mule by water power.

The first sheetings, shirtings, checks, and ginghams made in America.

William Dawson invented in England, the differential motion, known as Dawson's wheels.

Samuel Hague patented a machine for making elastic double-knit goods.

1791. Felix Crawford made fly shuttles at 364 South Second Street, Philadelphia.

Richard Gorton patented, in England, a loom worked by a crank; a piece of square iron was provided, which struck against a stop when the shuttle was not properly boxed.

S. T. Wood patented, in England, a method of passing the shuttle through the shed by means of levers, in a similar manner to De Gennes's loom.

Headstock of the spinning mule invented by Wright, of Manchester, Eng.

William Dawson invented a point-net machine.

1792. Dr. Cartwright obtained a fifth loom patent, *viz*, a change shuttle box and a device for raising a pile on the face of the fabric, also circular knives for cutting the same. He also took out his last patent for his combing machine.

(*To be continued.*)

The New Spindle Driven Beam Warper.

Economy in production, especially in the silk industry, is a question of considerable importance at this time.

The manufacturing trade maintains that, under present conditions, the only alternative is a careful study of the various methods with a view of securing the greatest efficiency at a minimum cost.

Through the co-operation of one of the larger manufacturers identified with the silk industry, a machine has been lately designed by the Globe Machine & Foundry Co., Inc., Fkd., Philadelphia which it is claimed will materially reduce the cost of warping and, at the same time, increase the relative production in this department.

The machine, which is installed in several mills, has demonstrated that it is capable of doing all that the builders claimed for it.

As can be seen from the illustration, which is a photograph of one of the machines installed and in active operation at the plant of the American Viscose Co., Marcus Hook, Pa., the same is a modification of the Improved Model Ball Warpers, also built by the Globe Machine & Foundry Co., Inc., and embodies many characteristic features of this machine, which is extensively used by the fine cotton trade.

The capacity of this new beaming machine can be adjusted to any desired number of ends, on any width beam, the one in the illustration having a capacity of at least 1,000 ends, and the builders guarantee that by the use of their direct pull **V**-type creel, which is equipped with an extremely sensitive electrical stop motion, that not one end will be lost on the entire beam.

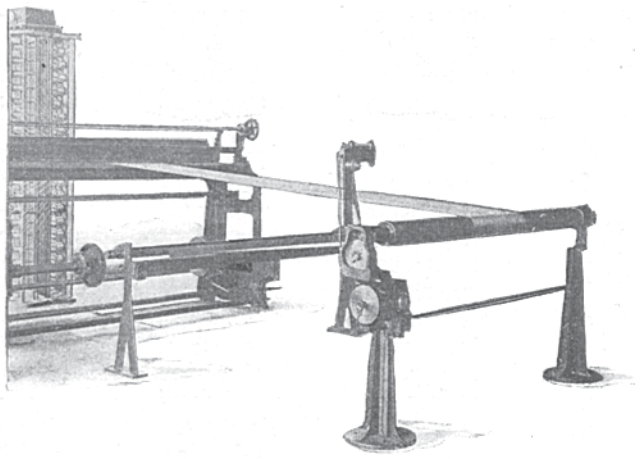
The characteristic features of this machine, other than those mentioned, is the measuring device. This, as can be seen from the illustration, is located on the side of the left hand column, which supports the measuring roller.

The measuring device consists, as can be seen, of two dials which are capable of measuring up to 24,000 yards.

The smaller dial, which is directly connected to the measuring roll by means of a pinion, is used for determining the actual length of the cut, while the larger dial gives the reading of the total length of the warp. The counter dial, on the large dial, is so constructed that it can be set at the desired length for the purpose of verifying the reading.

In operation, the silk running from the spools in the creel passes through the leaded distributing reed, over the measuring roller to the expansion reed and is wound on the beam by a direct drive, the speed being reduced automatically as the beam increases in size, a lever also being provided for reducing the speed when necessary.

In order that the beam may be securely held in position, the driving head is so constructed that a very powerful three-jawed, universal clutch is utilized. As can be seen from the illustration, the narrow beam in the driving head is held in position by this attachment. This eliminates all slippage and insures perfect alignment.



Another feature of the machine is that the starting is gradual, eliminating all unnecessary strain on the silk.

The expansion reed, shown in the illustration in front of the beam, may be raised, if desired, and adjusted in front of the measuring roller.

In order to take a lease in the warp, the required length having been determined by the measuring dial, the electrical bell attachment having given the signal, the leaded reed is raised by means of the hand wheel on the side of the driving head.

A New Printing Process.

Application has been made for a German patent whereby fabrics can be given a pattern on both sides by printing on one side only. The goods are first impregnated with gum tragacanth mucilage mixed with bodies which will facilitate the subsequent absorption of the printing color, *i. e.*, with phenol for woolen goods, and with glycerine or glucose for cotton goods. After this preparation the goods are printed on one side in the usual manner and then put through unengraved rollers which drive the printing through to the other side.