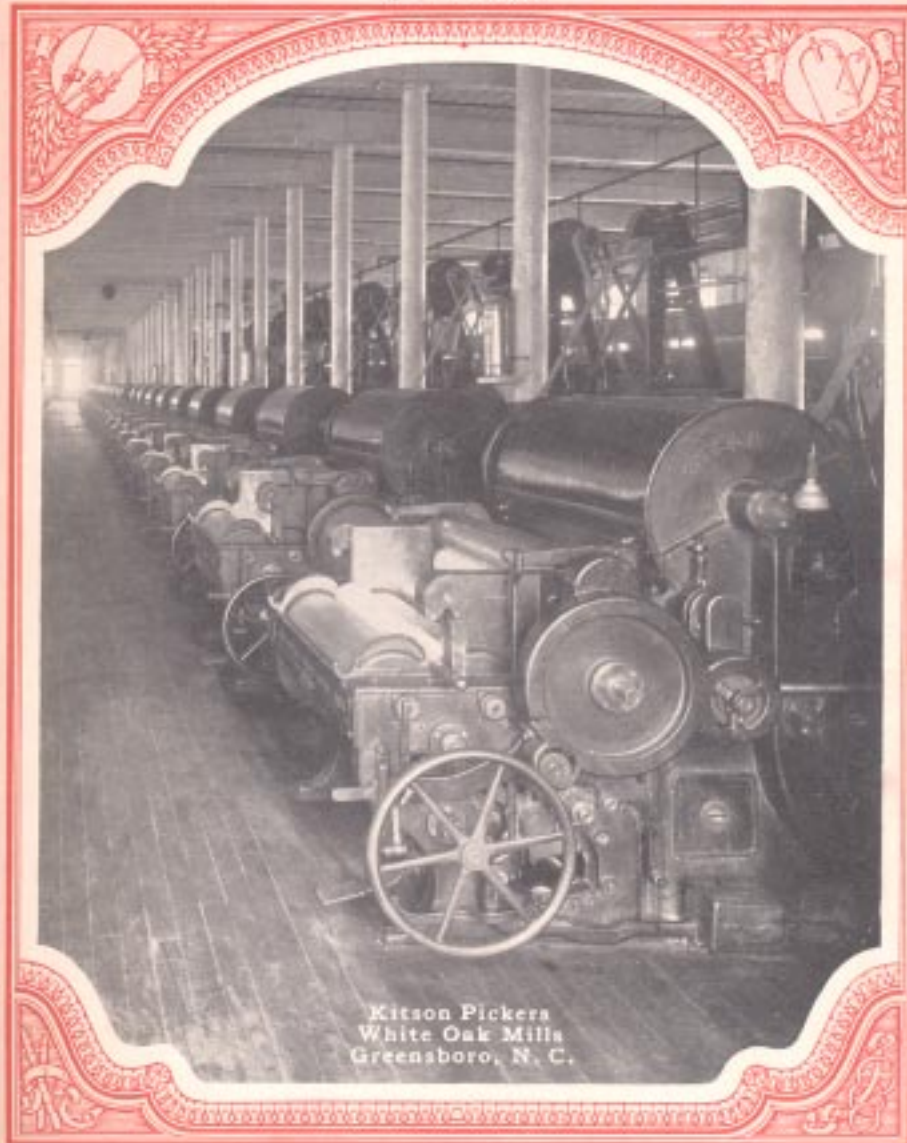


THE SACO-LOWELL BULLETIN

JUNE 1928

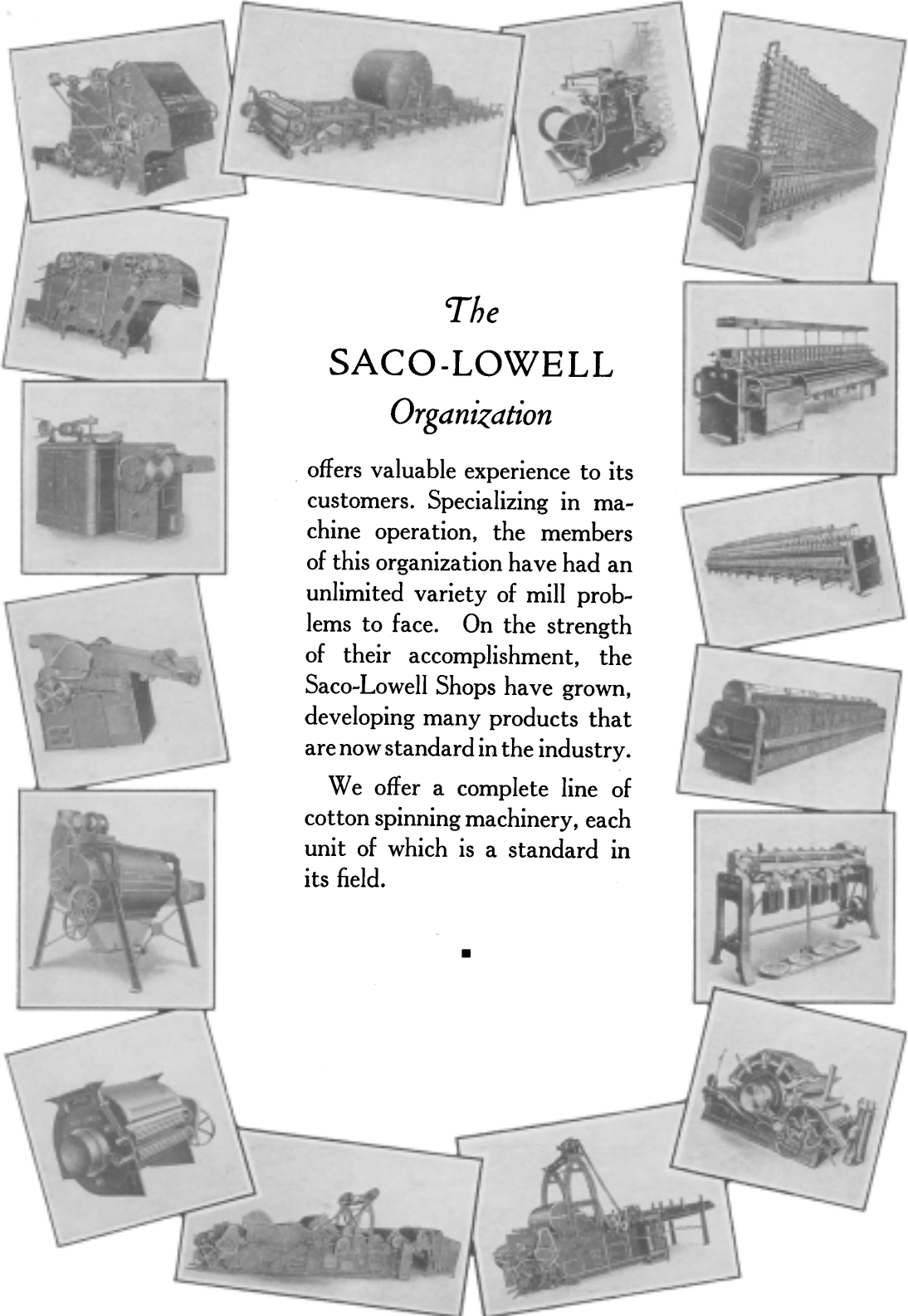


Kitson Pickers
White Oak Mills
Greensboro, N. C.

In This Issue

LONG DRAFT SPINNING

AN OPPORTUNITY FOR PROGRESSIVE MANAGEMENT



The
SACO-LOWELL
Organization

offers valuable experience to its customers. Specializing in machine operation, the members of this organization have had an unlimited variety of mill problems to face. On the strength of their accomplishment, the Saco-Lowell Shops have grown, developing many products that are now standard in the industry.

We offer a complete line of cotton spinning machinery, each unit of which is a standard in its field.

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THE SACO-LOWELL BULLETIN

Issued monthly in the interests of efficient mill operation by the

SACO-LOWELL SHOPS

147 MILK STREET

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CHARLOTTE

GREENVILLE

ATLANTA

VOLUME I

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NUMBER 4

Long Draft Spinning

An Opportunity for Progressive Management

IN the March issue of the BULLETIN we gave a brief outline of the developments of the Saco-Lowell Long Draft System in an endeavor to show the long process of experimentation that always accompanies every new development, and how that pioneering period ended by placing before the American cotton mills a system which was practical, economical, and of correct design to meet American mill conditions. It is the purpose of this article to describe our Long Draft System in more detail and give a few typical examples of the results being obtained from the many thousands of spindles we have already equipped.

Long Drafting is better drafting. As it is better drafting than we have had heretofore, so we are enabled to accomplish longer drafts than have been possible heretofore. It is one more step, and a very important one, in the orderly and logical advance in the practice of Spinning.

The theory of Long Draft Systems is based on the slip draft principle. This principle has received such universal acceptance within the last few years, that

it is not necessary to elaborate upon it here. The weakness of this principle was in its adaptation to regular Three-roll Spinning, inasmuch as it was impossible to obtain a proper break draft between the back and middle rolls. In our opinion, this difficulty with the break draft was so serious as to demand improvement before the system could be recommended for general use.

When the function of the top middle roll is analyzed, it is clear that this roll is expected to perform two separate and distinct duties. The first is to unlock the fibres from the binding effect of the twist and start an action of drawing upon the individual fibres. This break draft requires the top rolls to be heavily weighted to give a positive drawing of the twisted roving. The second duty is to control the regularity of the feeding of the fibres, both long and short, in their orderly turn to the front rolls. The short fibres should be fed to the front rolls, while the longer fibres which are being drawn by the front rolls must be allowed to slip under the middle top roll. The slip

draft, then, demands that the middle top roll be light enough to permit the long fibres to slip under it without damage. These two conflicting duties demand that the roll be both heavy and light at the same time. Such a thing, of course, is impossible, so the obvious solution is to have two lines of middle rolls, the back middle being weighted to have a positive hold, the front line being small in diame-

Four-Roll System, and carries the fibres closer to the front roll, but avoids the evils inherent in a steel roll of too small a diameter. The fibres are held in frictional contact with the belt by a small top roll between the middle and front rolls. This system carries the fibres and delivers them at a point closer to the front roll than any other system. In addition to this feeding, or drawing element,

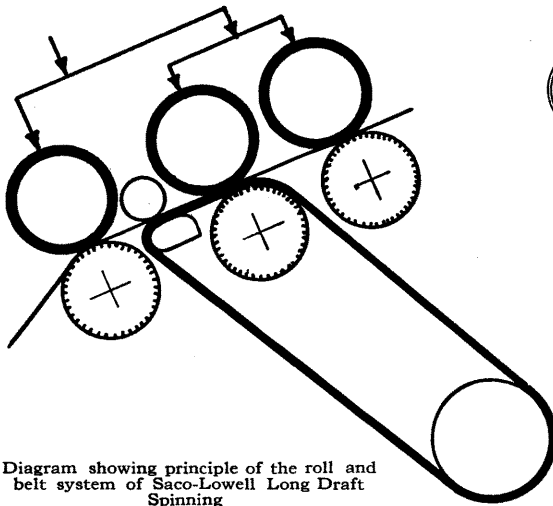
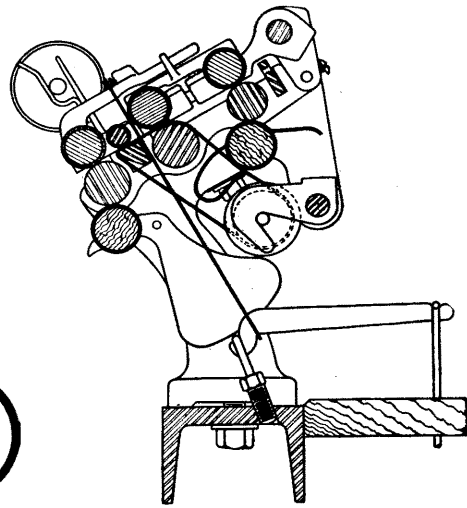


Diagram showing principle of the roll and belt system of Saco-Lowell Long Draft Spinning



Cross-section of the drawing mechanism of the Saco-Lowell Spinning Frame, showing adaptation of the long draft principle shown on the left

ter, set close to the front roll, and having a light top roll unweighted, permitting slip draft.

This Four-Roll theory is the basis of our present Le Blan-Roth System of better drafting, which we firmly believe marks the highest point yet attained in the evolution of drafting apparatus for Spinning Frames.

The accompanying drawing shows the cross section of our System, from which will be noted that a single endless belt passes over the middle roll and is carried close to the front roll by a bar. This belt takes the place of a small front middle roll, as would be used in an ordinary

is included the essential break draft equipment of properly adjusted and geared back and middle rolls.

We have maintained for several years a Long Draft Laboratory, the equipment of which is, for the purpose, probably unequalled. In this laboratory, and in mill operation, our engineers have conducted a long series of experiments supplemented by thorough investigations of the whole subject in this country and in Europe, and we find that this system gives the best results of any that have come under our observation.

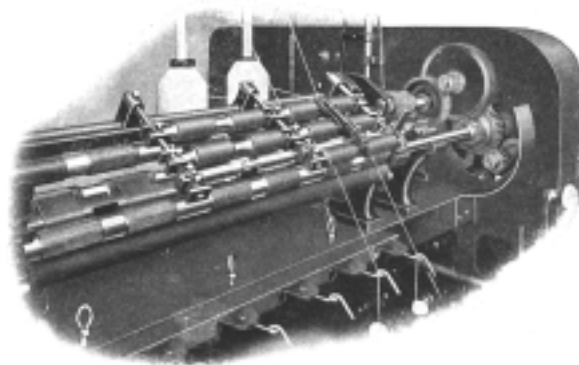
It is a fortunate circumstance that this system combines with its effectiveness,

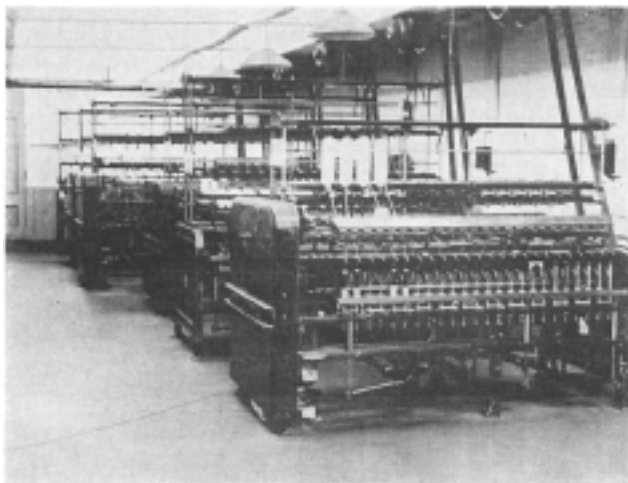
extreme simplicity in adjustment and operation. It has only three lines of bottom rolls, although it comprises the principles of the Four-Roll Frame. It has but a single belt, which is held at a light and constant tension by a self-weighted take-up roll at the back of the roll stand. The belt is driven by the action of the middle roll, with which it is held in contact by the weighted top roll. It passes loosely over the bar back of the front rolls and thence to the take-up roll and then back to the middle roll. It will be seen that the point where the belt passes over the bar is at its point of least resistance, thereby giving extremely long life to the belt. If it should be necessary to replace a belt, it may be done while the Frame is in operation. With a single belt such as is used on this system, it is possible to provide it with an effective but simple clearer which prevents the accumulation of fly. The accumulation of fly has been one of the chief obstacles to the successful operation of a belt drawing mechanism.

Unfortunately, when Long Draft was first introduced, some of its sponsors, in order to commercialize the device, made extreme claims and installed equipment to operate under conditions that were

not always practical. We realized from the start, and all of our experiments were based upon this theory, that if we could not produce with Long Draft a yarn equal or superior to that produced by present-day methods of Spinning, there was no field for Long Draft in this country. There is no magic whatever in Long Draft Spinning. If a certain number of doublings are necessary in a certain mill under ordinary conditions to obtain the quality of yarn they require, the same number of doublings are just as essential with Long Draft, and even more so because of the increased draft in many cases. It should be recognized, that a little more cleaning is necessary, particularly with carding work on the Long Draft Systems, because there are a few more parts that have to be cleaned from lint and fly. Spinners, however, have more time for cleaning, as we consistently find less ends down and furthermore the creeling is considerably reduced in a majority of cases. No mill would think of throwing out the humidifiers because the pipes collect lint and fly and require periodical cleaning. They are content to clean these pipes as often as necessary, because experience has taught them that humidifiers are a real necessity. We feel

Saco-Lowell Long Draft: Le Blan-Roth Patent (Patented in Foreign Countries, patent pending in U.S.)





Long Draft Laboratory, Saco-Lowell Shops

that this is the attitude mills will soon take towards our theory of spinning, as the savings made possible by this device are also a real necessity in these competitive times.

While the economic advantages of increasing the draft, at the same time producing better yarn, are perfectly obvious, we feel that a few examples from recent installations will be of interest. One well known manufacturer of tire cord was primarily interested in producing a stronger yarn from their present grade of cotton. This particular mill consisted of 25,000 spindles on 23's yarn. The preparatory machinery was poorly balanced and it was necessary to run part of the Roving Frames nights. We worked out an organization for this mill, keeping the same number of doublings, whereby they would be able to do away with all of their overtime work, and in addition discard two of their Slubbers, four Intermediates, and twelve Roving Frames, making a total of eighteen frames. This new organization translated in dollars and cents would make a saving of \$47,142.00 per

year on labor alone, according to the mill's own figures. In addition to the labor saving, there was a saving of approximately \$4000.00 a year in power, plus the saving in supplies, lights, floor space, etc.

Another interesting example is a large, successful mill in South Carolina which recently installed a large unit of our Long Draft. This mill spins 21's yarn from 15/16" local cotton. Their organization on regular work was

Slubber—11 x 5½—.62 H.R.
Intermediate—9 x 4½—1.60 Hank Roving
Fine Frames—7 x 3—4.10 H.R.

while on the Long Draft it was

Slubber—11 x 5½—.62 H.R.
Intermediate—9 x 4½—1.40 H.R.

On the regular work, double roving was used on the Spinning Frames, while on the Long Draft equipment, the intermediate roving was used single in the Frames. This resulted in a considerable saving in labor, floor space, power, etc., which was naturally very gratifying to the mill, especially as they were able to

(Continued on Page 8)

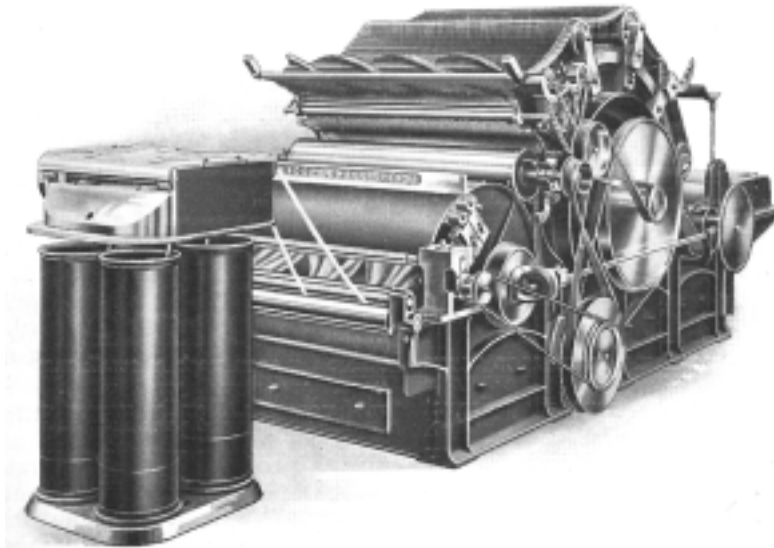
Miniature Waste Mill at Your Service

AS A specialist in waste-working machinery, the Saco-Lowell Shops have seen an ever-increasing interest in waste reclamation projects. We have operated for some time a miniature waste mill at our plant at Newton Upper Falls, Massachusetts, to be used as a research laboratory for the industry. The results obtained have given so much satisfaction that we are convinced that a wider use of this service would be profitable to many more mills.

This experimental plant was originally installed after an investigation of the various methods used in English and German mills where waste yarns of great variety are successfully manufactured on

a commercial basis. It consists of a complete line of Saco-Lowell waste reclaiming and spinning machinery, operated for the sole purpose of determining the best methods of handling the various wastes sent in by various mills.

We now have on file records of a large number of experiments on waste from all parts of the country, showing what can be done with the various mixtures and grades of stock. Why not send us some of your waste and let us work it up for you? We will submit a complete report of the results obtained and the methods used, together with samples. This service entails no obligation of any kind.



Saco-Lowell Four-Coiler Waste Finisher Card

From Field and Shop

A Customer Writes

SACO-LOWELL SHOPS,
Charlotte, N. C.

Gentlemen:

Under separate cover I am mailing you a "Snuff Box", containing all the soft waste, taken from a set of beams recently run off on our Slasher, that was made on your new high speed Warper.

This was a six beam set, containing 420 ends per beams, number 21 yarn, 21,000 yards long. The amount of waste made on this set was 636 grains, or 1½ ounces. This was all the waste that was left on six beams, after running out the set. This is so unreasonable that it doesn't seem true, but it is a fact, and I thought you might be interested in knowing this. We do not give your warper all the credit, however, as we do not use a weight on our back beams, on the Slasher, and instead of using a weight on our back beam we rope all beams together. But it does show how very accurate your machine is, and I am very much pleased with it.

Yours very truly,

—COTTON MILLS CO.

Saco-Lowell Service Proves Valuable

ABOUT a year ago, Saco-Lowell engineers installed complete new opening equipment in a well-known Massachusetts mill. The order was placed only after many months of work on our part in trying to convince the management that they actually needed this equipment, as their poor opening and cleaning was cutting down the efficiency throughout the mill. While part of the management was opposed to making the installation, the progressive element prevailed.

The new equipment has now been running for over a year. It was a source of gratification to us when, a few weeks ago, Mr. F. J. Hale attended their directors' meeting and one of the board, who was previously opposed to the move, told him that they all were grateful to our engineers for persisting in their efforts to make them see the need for installing this new equipment. He said that the equipment had more than lived up to our claims, and had resulted in great savings to the mill.

New Machinery Pays

*New Saco-Lowell Twisters Speed
Production in North Carolina Mill*

NEW Saco-Lowell tape drive Twisters were recently installed in a North Carolina mill to replace band-drive equipment. The new machines are 3¼" gauge, 2" ring, 6" traverse, and are operating on 48's, 2-ply.

On their old twisters this mill was running at 75 turns on the front roll. On the new Saco-Lowell twisters the same counts of yarn are being run at 91 turns on the front roll. The Superintendent now informs us that he has ordered pulleys designed to increase the front roll speed to 100 turns.

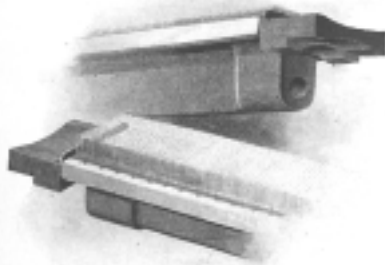
On the old frames one operator looked after 12 sides of 104 spindles. On the Saco-Lowell frames one operator looks after 16 sides of 126 spindles. Summarizing the above figures, we find an increase of 61% in the number of spindles per operator, plus an increase of 21% in production per spindle.

A Card is No Better Than the Quality of Its Clothing

ALTHOUGH the Revolving Flat Card is generally regarded as one of the most rugged pieces of equipment in a mill, it is, nevertheless, subject to very fine adjustments and the work done by the fine wire clothing is of a delicate nature. This subject of clothing is all too often neglected; many mills running their cards long after the clothing in flats, cylinder, and doffer is too worn to produce the quality of sliver the card would otherwise be capable of turning out.

The small amount invested in replacing badly worn clothing is many times repaid in increased quality and efficiency.

For many years we have maintained a department in our Newton shop, and also at our shop in Charlotte, N. C.,



Flat Clothed with Saco-Lowell
Patent Clips

solely for this purpose. By taking advantage of our facilities the re-clothing of flats, cylinders and doffers can be expertly done with a minimum of time and expense.

Every mill will find it worth while to make use of this service and thus keep cards up to their original high standard of efficiency.

Built-In Quality Speaks for Itself

MR. MAULDIN, a service representative of the Saco-Lowell Shops, recently called at a well-known South Carolina mill. While there the overseer of carding informed him that the mill had sixty-six roving frames of our 1913 and 1915 models, and that the repairs on the whole lot did not average \$100 a year. He has never had to take down a compound.

Your Letters Are Always Appreciated

WE think you'll agree with us that the development of textile machinery is one sure way of making progress in this industry. If so, you'll realize how important we deem your letters commending or criticizing our products. Your suggestions, based on your actual experience in the use of textile machinery, are the most valuable things you can give us. We have a large corps of engineers working on new developments in textile machinery. They are continually producing something worth while; witness the recent development in opening and picking equipment. Remember this, however. They have got to make it valuable to *you*, before it can be 100% successful.

Write us what you think about anything connected with the industry. We are always glad to publish facts and news, over your name or not, just as you see fit. This is your magazine.

—Editor.

Long Draft Spinning

(Continued from Page 4)

produce from single roving a yarn which broke on the average four pounds better than their regular.

In one of the most successful mills in Georgia, we have installed approximately 25,000 spindles operating on 36's warp yarn. The regular organization in this mill called for this warp yarn to be spun from $6\frac{1}{4}$ hank double roving, whereas by the addition of Long Draft equipment, we were able to produce for them a stronger and better yarn from four hank double roving.

Results such as outlined above can only be obtained by mill management broad enough to recognize potential saving possible with long draft and willing to adjust their organization to incorporate this feature. Installing long draft means much more than simply attaching

a certain feature to a spinning frame. It means an intelligent survey of the mill's existing organization, along with the determination on the part of the mill management to give the system a fair trial, and not condemn it because it differs in certain respects from their present method of spinning. In this connection it might be well to add that no changes are necessary in a mill's organization when installing long draft that would not be a real help if long draft were not installed.

In conclusion we have no hesitancy whatever in stating that we are convinced that we are working along the right lines and that we have a system of spinning that is of real value to any mill interested in producing better and stronger yarn at lower costs.

Our Mailing List is Open

The Saco-Lowell "Bulletin" is published to further the development of textile machinery to make a better product at a lower cost. If you have associates whom you think would be interested in the facts published herein, we will be glad to put them on our mailing list to receive copies. Just write their names, titles, and office address below and:

Mail to The Saco-Lowell Shops, 147 Milk St., Boston, Mass.

Name

Address

Name

Address

Name

Address

Your name

Firm

Pointing the Way to Progress

YARNS may be made from all grades of cotton, but no yarn can be a *low-cost* yarn unless it is efficiently spun and of sufficiently high quality to run economically in the remaining processes. Since the spinning frame is the key machine in the production of *good* yarn, we earnestly recommend the new Saco-Lowell spinning frames to your

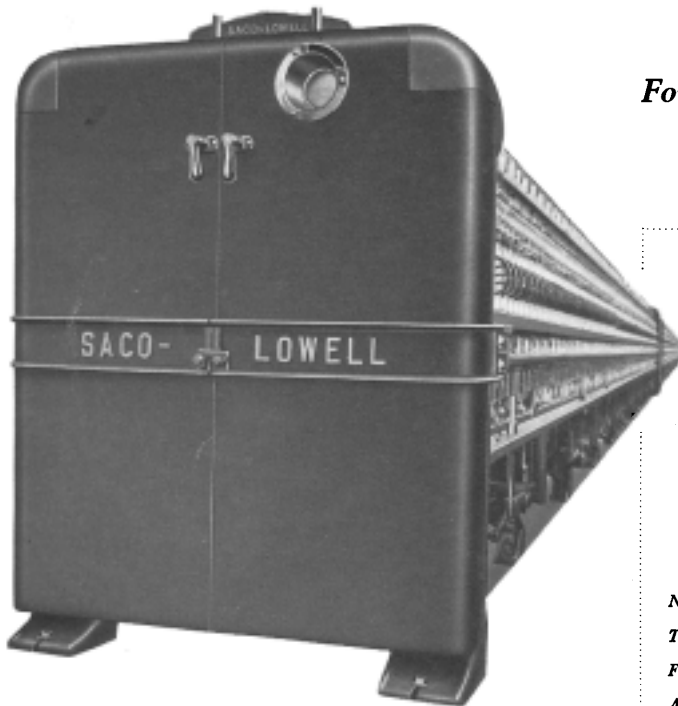
attention at this time. They produce *good* yarn at low cost,—a low cost that repeats in subsequent operations.

The time to install new equipment is **NOW**, when competition is keenest. May we send an engineer to survey your needs? There is a coupon attached, for your convenience.

SACO-LOWELL
MANUFACTURERS OF TEXTILE MACHINERY

147 Milk Street, BOSTON, MASS.

CHARLOTTE, N. C. GREENVILLE, S. C. ATLANTA, GA.



*For Your
Convenience*

COUPON

Saco-Lowell Shops
147 Milk Street
Boston, Mass.

Gentlemen:

I would be glad to have your engineer call to discuss spinning frames, (on). I understand that this will obligate me in no way.

Name.....

Title.....

Firm.....

Address.....

.....

