

BLOOMSDALE SEED FARM.

Stretching out two miles along the banks of the beautiful Delaware, above Bristol, is Bloomsdale, the "home" farm of David Landreth & Sons. This property comprises about six hundred acres. It is half a mile in width, bounded by a canal on the inland side, and longitudinally cut in two by the Pennsylvania Railroad. One of our illustrations is a view of the central group of buildings, on the roofs of which, in large lettering, distinctly discernible from the cars, one reads,

LANDRETH'S GARDEN SEED FARMS.

PEDIGREE SEEDS.

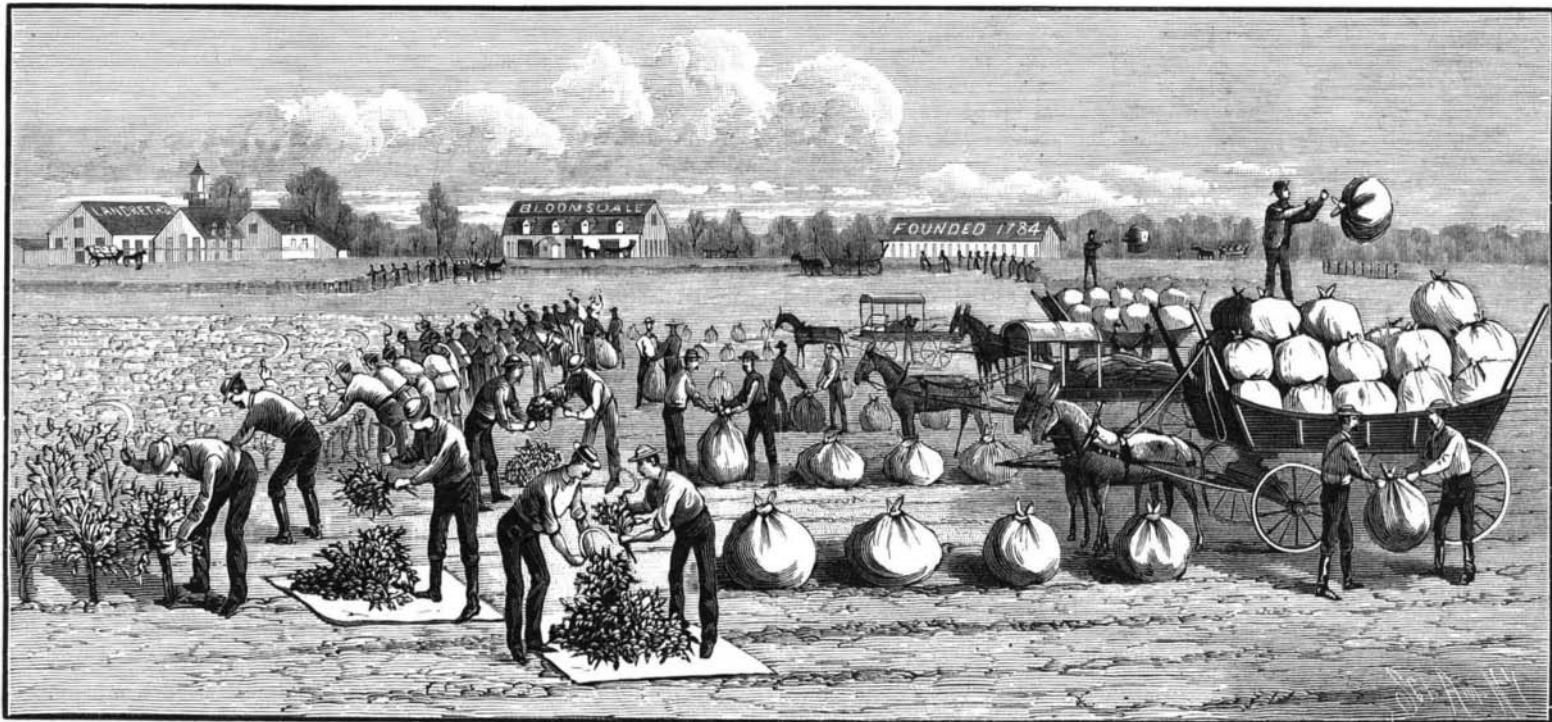
In addition to this farm, the firm has one hundred and thirty acres across the river in New Jersey; five thousand

three generations of man, from father to son and grandsons, succeeding to the experience and the estates.

"The founder of this establishment, which has now grown to such proportions, was David Landreth. He was a native of England, and, emigrating to this country one hundred years ago, settled on a small tract of land comprising a part of what is known as the Neck, below Philadelphia, where he was one of the first, if not the very first, to inaugurate the work of seed growing as a business in this country. He appears to have possessed in a high degree skill and enterprise, for his efforts were highly successful, the business continuing to increase from year to year. He was succeeded by his son, now deceased, who prosecuted the business with even greater energy than had characterized his predecessor. Mr. Lan-

would be supposed by any one not a seedsman. At the Centennial International Exhibition it was officially reported by the foreign judges, "that the extent of the exhibit, and the purity of the seeds, being one hundred and ninety (190) varieties of garden and field seeds, twenty (20) varieties of dried grasses, fifty (50) varieties of forage plants growing in pots, and fifty (50) varieties of grain in the sheaf, was worthy a special award."

We have ourselves enumerated 435 catalogued garden and 360 flower seeds, in all 795, and believe this to be rather below than above the true figures. The names are frequently suggestive of peculiar qualities, as, for example, "Landreth's Extra Early Pea," "Heat Resisting Lettuce," "Beefsteak Tomato." As indicating the extent of the operations, we note that in April of this year there was sown cabbage seed



D. LANDRETH & SONS' SEED FARMS.—HARVESTING SMALL SEEDS.

acres in Virginia, this latter principally devoted to Forestry; and large tracts for the cultivation of garden seeds in Wisconsin. The farm near Bristol is valued at five hundred dollars per acre on the average, and in part at one thousand dollars.

There is also here a fine, it is said, the finest developed arboretum in the country. It contains over one thousand distinct species of hard-wooded trees and shrubs, largely evergreen and resinous, collected as a matter of taste from all parts of the world, North and South America, China, Japan, the Himalaya Mountains, Australia, Siberia. Many species have failed to endure the heat and cold of a Pennsylvania climate, but these have proved hardy, and present beautiful varieties of rich, dark blue and golden yellow in

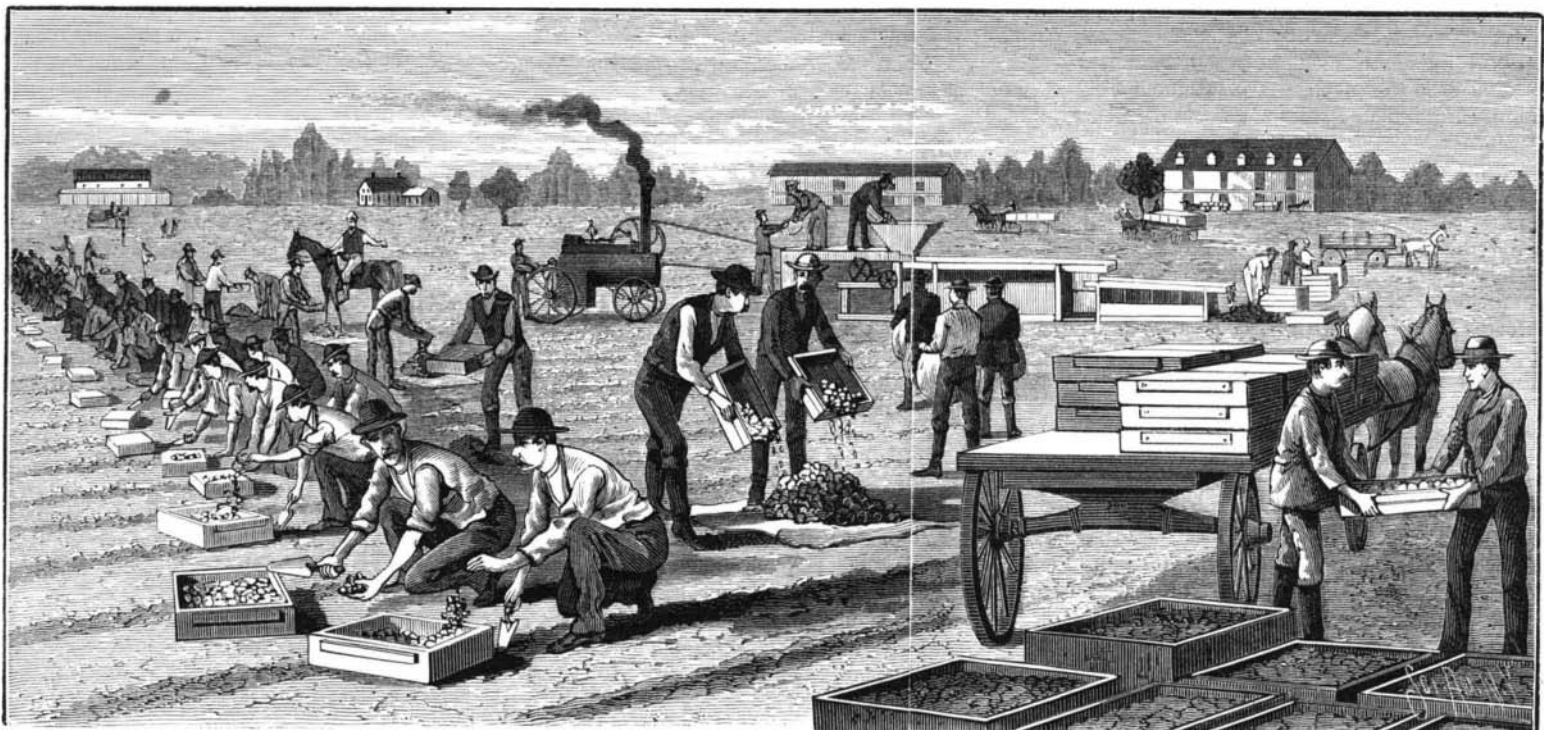
dreth, in the course of time, found it necessary to seek a new location for his increasing business, and accordingly, in the year 1847, he purchased this property, known as Bloomsdale. The tract originally consisted of about two hundred and thirty acres. This has been increased by subsequent purchases, until the whole farm now embraces six hundred acres of land, all of which, except the lawn surrounding the mansion, is under cultivation in garden seeds.

Sixty years ago they opened business connections with British India, and all gardeners there have long been familiar with Landreth's seeds. They now ship tons of seed to that country per annum, the managers of government establishments there as well as private planters finding Ameri-

on their various farms which produced forty million plants for setting out in July and August, to perfect seed in July next year, thus requiring fifteen months from seed time to harvest.

Of watermelon, squash, and cucumber seed twelve tons are sold; of onion seed, they drilled last April, to produce "sets," thirty-seven hundred pounds, valued at nearly fifteen thousand dollars.

If these figures show the "plant," what must the product and sales be? The average quantity of seed in store for sale, which of course varies, is at cost value from two hundred and fifty to three hundred thousand dollars. Stable manure is brought from Philadelphia, and is mostly obtained from the passenger railroad companies. Of this and street dirt,



D. LANDRETH & SONS' SEED FARMS.—COLLECTING ONION SETS.

color, with every weird and fantastic shape, from the erect spire of an Irish yew, to the graceful sweep of a weeping willow.

It is said that, including all the farms referred to, this firm owns and cultivates, in Garden Seeds, a larger acreage than any seed-growing establishment in the world, and that claim goes unchallenged. And, though there are extensive seed growing districts in Germany and England where the industry is carried on, they are for the most part small holdings, or where of extended breadth, are rented lands worked on contract.

This business has had the long and slow growth which seems to be the history of great enterprises. It represents

can seeds to be superior to European, both as respects purity and vitality.

European seeds are well known by experienced gardeners in this country not to be as good as American—not as "mature." The hot American sun, ripening the seed more thoroughly, is more favorable to the development of vitality. A few kinds of vegetables do not perfect seeds in this climate, such as cauliflower and broccoli; such are always imported. Philadelphia has ever been considered the center of the Seed Trade in the United States; it was the first to develop it, and has always possessed the finest vegetable market in the Union.

The varieties of seeds sold by this firm is far greater than

thirty thousand cart loads are used. This is brought up in boats and landed at various points on the farm. In addition to this large quantities of superphosphate and Peruvian guano are employed to stimulate the growth of the various crops. On the Virginia plantation, green fish, caught in the Chesapeake, are plowed in by many millions annually.

The Pennsylvania and New Jersey farms, located on opposite sides of the river and, comprising over seven hundred acres, we will consider as one plantation, being worked under the immediate direction of the resident proprietors. The field hands range from one hundred to three hundred, often more. A considerable number of Italians are employed, and are said to make most satisfactory workmen.

The plowmen are housed in thirty-five (35) cottages, most after the fashion of large estates in Europe. Six stables are built in different parts of the plantation, the central one two hundred feet long. When necessary over twenty double plows can be quickly assembled without deranging other regular operations.

They invent many, and make and repair all their own tools—plows, wagons, threshing machines, and seed drills, possessing complete shops and employing experienced mechanics.

Our engravings so perfectly picture the farm that they require no explanation. One there looks upon the land and buildings as they are. It has a prairie-like surface, marked out by permanent roadways into long parallelograms of from five to ten acres; no trees, no rocks, no interior fences, no waste room; constantly under cultivation, never any rest—thus this strain can only be met by liberal manuring.

Bloomsdale is a vast vegetable garden; but it is a garden only for the raising of seed: not a vegetable is sold; the plants mature; the seed ripens, and it alone is removed.

The first step in the work of successful seed raising is to secure the growth of well matured and healthy vegetables from which to produce the seed. This, of course, requires a rich soil and thorough cultivation, which is well understood and practiced at Bloomsdale. There is little of novelty or interest about this part of the business to such persons as are familiar with vegetable growing on a large scale. Everything on the farm is planted in rows, so as to admit of easy culture by running the cultivator and similar implements between them. A great variety of implements are in use, but the plow, harrow, and cultivator are the main dependence in the work of tillage. Of the *two classes of vegetables* from which seeds are raised, *annuals* and *biennials*, the former, among which are radishes, lettuce, etc., give generally least trouble, as the seed can be obtained from them in four to five months. The tomato, however, which is an annual, is rather an exception, on account of the great amount of labor required in separating the seed from the pulp, to which more particular reference will be made hereafter. Among the biennials is cabbage, which requires about fifteen months from the time of planting until a crop of seed is obtained. Cabbage, and also beets, carrots, turnips, have to be kept over winter, to be planted for seed the following spring. There is often a great loss sustained in this way; in some cases a large part of the crop of cabbage decays and becomes worthless during the winter. It is, therefore, necessary, to have a much larger area planted the first season for raising the heads than is expected to be taken up for the production of seed the next spring. This year the firm have planted on their various farms 350 acres with cabbage for the raising of seed heads. They commence setting out the plants about the first of July, and continue during August. The implement used in planting the cabbage is the dibble, well known to all gardeners. With this an average man can put 9,000 plants into the ground in a day. The time required to secure a crop of beet seed does not vary materially from that necessary to obtain it from cabbage, and the same is true of several other vegetables of a similar character.

The seed harvest is now in active operation on Bloomsdale. Several of the earlier crops have already been gathered. The first one taken in is corn salad. This is followed by the gathering of the turnip crop, with which 135 acres of ground were planted. The crop of cabbage seed has also been gathered. The seed from 40 acres of spinach has been harvested. The crop of parsnip seed this season amounted to nearly 400 bushels. Last week the harvesting and threshing of the crops of beet and onion seed were in progress. Thirty-five acres were planted with beets and fifty with onions producing seed this season. The sickle is the implement generally employed in cutting the ripened plants containing the seed. As the seed stems are cut off by the reapers they are carefully placed in piles on large square sheets of canvas. The four corners of the canvas are then drawn together, and the bundles of seeds are placed on wagons and hauled to the barns or drying houses, of which there are fifteen. In addition to the threshing floors, they are fitted up with a succession of scaffolds of boards, arranged a short distance apart and placed one above the other at suitable distances, on which the seed, if wet when cut, is placed to expose it to the air to dry it for threshing. The extent of drying surface afforded by these buildings is four acres of ground. Some of the seeds, among which are Lima beans, are threshed with the flail, the rest are run through machines similar to our ordinary threshing machines, varying in their internal arrangement to suit the different kinds of seeds to be threshed. They are propelled by steam, and for this purpose *five engines* are employed on the various farms. One of these is an eighteen horse power stationary engine. This is used for threshing, for grinding corn and other feed for stable use, and for grinding fertilizers.

The harvest season begins about the first of June and continues till the middle of September. During this period one, and sometimes all five, of these engines are constantly at work. The work of separating the seed from the hulls or chaff which remains after the bulk of the straw and refuse material has been removed during the process of threshing, is performed by the ordinary grain fan, or machines constructed on the same principle. These are variously arranged so as to adapt them to the different size and weight of the seeds that are to be cleaned. During our visit some of the workmen were engaged in the large main barn, in the middle

of the farm, in putting the finishing touch on a portion of this season's crop of parsnip seed, already alluded to. On one side of the barn floor was a huge pile of the raw material just as it remained after threshing. This was being shoveled into the hopper of the fan by one of the men, in the manner of oats or wheat, and from the machine, which was turned by another person, the seed ran out nicely cleaned. On the other side of the floor there was a heap of the pure seed, which would open the eyes of the person who, in his observation of seed growing, has not gone beyond the small ten cent papers of the articles that come from the warehouse in Philadelphia.

After the seed is threshed and dried it is put up in sacks of convenient size for handling, and part shipped to the warehouse in Philadelphia, the rest deposited in storehouses on the farm. The storehouse for small seeds is a large fire-proof building, 210 feet long by 40 wide, and three stories high. There is here an apartment devoted to putting up seeds in packets. Here girls are employed in filling the small papers familiar to all, and which have been previously labeled for the retail trade. When filled and sealed up they are tied together in bundles of a dozen packets each. They are then packed in bins and held subject to orders. A large part of the work is performed at the warehouse in Philadelphia, to which large quantities of the seeds are forwarded as soon as they are ready for sale. Sales are made in the city, and all correspondence there attended to. Great care is employed in planting, cultivating, and threshing, to keep each kind of seed and the several varieties of the same sort separate. To prevent hybridization among so many varieties of plants, extended areas of land are necessary and careful calculations as to the location of crops.

Among the crops to be harvested are thirty-five acres of radishes, now almost ready for the sickle, and the remnant of forty acres of onion sets. There are also thirty-three acres of Lima beans, in addition to which there are large areas out on contract. The quantity of peas and bunch beans annually sold by the firm amounts to about seventy car loads.

The storehouses used as drying-houses for unthreshed seeds in summer have floors capable of sustaining any weight, and in winter furnish warehousing space of vast extent. In them are stored heavy and bulky seed, such as peas, beans, corn, beet seed, onion sets, etc.

The tomatoes, now growing for seed, cover an area of fifty acres. It requires *thirty thousand bushels* of this vegetable to produce enough seed for their yearly sales. As they ripen the tomatoes are pulled off, put in barrels, and hauled to the Delaware for the purpose of washing out the seed. They are first mashed in the casks with stamps until well broken to pieces; this mass is then put into coarse wire sieves working in water; these are of sufficient size to allow the seed and smaller portions of the pulp to pass through into a box prepared to receive them, leaving the larger pieces of the tomatoes in the sieve to be thrown away. The seed and finer particles of pulp are then put into a finer sieve, by which another portion of the pulp is got rid of. This is continued with successive sieves of a finer grade, until the last is reached, which is of just the right size to retain the seed and allow the remaining portion of the pulp and useless matter to pass through. All that is required to complete the operation is to dry the seed, when it is ready for the fan.

Six or seven acres are taken up with peppers. About two thousand bushels of these are necessary to supply the yearly wants of the establishment. There are now forty-five acres of beets growing on the farm for seed in April, 1883, with about the usual proportion of the other biennial root crops under cultivation for the same purpose.

Corn, potatoes, and the common grains and grasses are not raised on the farm. Such of these as are wanted for seed are grown by outside parties, under the supervision of the firm. Only the tender plants, and such as require a long season to mature, are started under glass, but these are of sufficient amount to require sash enough to cover more than an acre of ground.

To us the most interesting part of the farm was the "*trial ground*," covering three acres.

"The entire list of vegetables from A to Z is here on trial, not one sample of each, but comparative lists of sometimes two hundred of each sort. Samples of their own, samples from the counters and seed lists of American seed merchants, samples from Canada, England, France, Holland, Germany, Italy, all classified, ranged side by side, and numbered consecutively from one up into the thousands.

"Two hundred and fifty trials of peas, one hundred and thirty of turnips, one hundred and fifty of cabbage, one hundred and ten of mangolds and beets, fifty of sugar corn, one hundred and sixty of beans, and so on to the end of the chapter.

"Neatness, next to the unexpected display of numbers, was the striking feature; the land was laid out in parallel beds, two hundred yards long and six feet wide, with paths between. Across these beds were sown the seeds on trial, four to five rows of each, and upon the entire area not a hatful of weeds.

"Each family of vegetables is planted the same day and under precisely the same circumstances, each trial distinguished by a label bearing specific numbers; these recorded in a book giving date of planting and origin of sample. Into this book, at proper periods, four series of observations are recorded bearing upon vitality and habit.

The books of record are volumes of practical systematic observation, and may be seen in the office stacked away, ex-

tending far back into the years; ready at all times to testify to the merits or demerits of every vegetable known to the trade."

This is the science of our times, when most is learned by experiment, extended over a long period of time and numerous tests. All conditions and disturbing causes are taken into account, and in this case the whole history of the growth and characteristics of the plant are discovered by means of the comparative method. They know the history and quality of what they sell. The trial ground is at once a "sample room," a "register" of kinds of stock, a "laboratory," a record of kinds sold, with dates and particulars.

The "packing room," to which the seeds are taken, packed, and stored, is two hundred and ten feet long. It is kept clean, dry, well ventilated, at a uniform temperature, and possesses the sweet odor of the harvest. The seed is primarily measured into grain bags and hung up in rows. This is done to avoid the tendency, when stored in large compact masses and consequently away from free circulation of air, to heat, and become mouldy.

In small quantities and for retail sales, seeds are filled into little paper packets, with label, address of the firm, and colored illustration of the plant. These bags are filled by hand, and it is a singular fact that, after numerous attempts, they have, up to the present time, failed to invent a machine to do the work as well. We are tempted to suggest to some of our subscribers to try their inventive skill on the subject.

The girls, however, fill them with wonderful rapidity and accuracy. It is said that any selected at random out of the fourteen or fifteen millions will not perceptibly vary in weight.

Bloomsdale Farm, with its immense annual production of "pedigree seeds," is known to every agriculturist. Landreth & Sons have done more to improve the taste for fine vegetables than any other parties in the Union, and from the manner in which the firm goes steadily forward, yearly increasing the shipments by tons upon tons, their future will be still more remarkable success than their past and present. Next year they complete their one hundred years. We trust they may see a second centennial.

DECISIONS RELATING TO PATENTS, ETC.

United States Circuit Court.—District of Connecticut.
MEYER et al. vs. GOODYEAR'S INDIA-RUBBER GLOVE MANUFACTURING COMPANY.—PATENT RUBBER SHOE.

Shipman, J.:

This is a bill in equity to restrain the alleged infringement of reissued letters patent granted to the plaintiffs on November 17, 1874, for an improvement in India-rubber shoes. The original patent was granted to Christopher Meyer and John Evans, as inventors, on February 21, 1871, and was reissued to the same persons on July 16, 1872. Infringement is not denied.

The claim in the patent was for—

"One or more transverse ribs in rubber shoes or sandals, formed by thickening the substance itself in the lines or directions thereof while in the sheets, by means of rolling dies, as and for the purpose described."

Before the invention the edges of the mouth of the shoe were strengthened and made to present a finished appearance by being turned over by hand and cemented. Sometimes cords or strips of rubber were placed by hand upon the edge and were cemented. As a part of the invention, but not included in the original specification, claim, or drawings, the inventors ribbed the edge of the mouth of the shoe with a rib formed in the manner which has been described. The first reissue was obtained for the purpose of including this rib within the patent.

The claim was as follows:

"As a new article of manufacture India-rubber shoes with strengthening or other ribs homogeneous with the substance of the body, formed by thickening up the said substance in the forming of the sheet, substantially as specified."

The validity of the first reissue was then tested in this circuit in the case of *Meyer v. Pritchard*, which was tried before Judge Blatchford (12 Blatchf., C. C. R., 101). The court held that there was no patentable novelty in the invention in view of the patent granted to Silas C. Hyatt and Christopher Meyer, January 17, 1854.

The first and third claims of this patent were as follows:

"1. Producing a shoe sole or other analogous manufacture in India-rubber or gutta percha in one piece, having variety of thickness in its different parts, by the use of rollers whose surfaces present the reverse of the forms to be produced at a single operation, substantially as herein described.

"3. We also claim such soling or analogous manufacture in continuous sheets, at one operation, by rolling, as described."

The present reissue was thereupon granted, in which the claim is limited to the rib around the mouth of the shoe, and is in these words:

"As a new article of manufacture, India-rubber shoes having a strengthening rib around the top or mouth of the shoe (whether with or without similar ribs on other parts of the shoe), formed not by turning over the edge or lapping one piece upon another, but thickened up from and homogeneous with and forming a part or portion of the body of the upper, substantially as specified."

Divers defenses are set up in the answer. The two which are relied upon are the invalidity of the reissue, because it is for a different invention from that described in the original patent, and lack of patentable novelty in view of the Hyatt and Meyer patent of 1854.