American Cotton in China.

Speaking of the increased sales of American cotton goods in China, the British Consular report for 1876 states that "America seems bent on imitating Great Britain in her products, and has actually shipped to China large quantities of heavy cottons termed continental sheetings, but in reality a cross between a good gray shirting and a T-cloth. Although hitherto these sheetings have resulted in loss only, both to the importers and manufacturers, yet they are genuine articles, free from over-size and all the other adulterations employed in the Lancashire mills, and not being liable, therefore, to mildew, they bid fair to assert a front place in the foreign trade with China. It will be a long time, however, before it utterly supplants the British textile which it seeks to resemble. China clay and the other deleterious substances are less costly than pure cotton; the cost of production in England is far below that in America, and until lately the Chinese have always run after the cheaper commodity, as long as it possessed sufficient cohesiveness and held together under the needle, and did not fall to pieces in a shower of rain."

Now that the Chinese are learning to "run after" goods that are durable as well as cheap, the Lancashire process of loading cottons with China clay bids fair to bring its practicers to grief. It is to be hoped that no American manufacturer will be so foolish as to follow the English example.

NEW COTTON SPOOLING MACHINE.

We illustrate herewith an improved spooler devised by S. F. Cobb, of Alberton, Md., who claims the said spooler can be run 25 per cent faster than those ordinarily constructed, without causing any breakage of the yarn when nearing the barrel of the bobbin, as is commonly the case with the majority of spooling machines, and thereby securing the yarn upon the spool that is usually wound off into waste; also that all knots, bad piecings, and double ends are removed by the thread guide. The spool, A, is rotated in the usual way by frictional contact with a rotating drum, B; the ends of its spindle enter vertical guide grooves in the arches or transverse frames, C, so that as the spool becomes gradually filled with thread wound thereon from the bobbin, D, it will rise in said grooves until the ends of the spindle fall into lateral recesses communicating with the grooves. The thread passes off the bobbin through the slotted guide, E, Fig. 2, which is attached to the traversing bar, F. The said guide differs from those ordinarily used in spooling machines, in that the respective arms of the same are provided with barbs or hooks, *a a*, projecting inward from their upper ends, and caused to press together by reason of their own elasticity; the object being to prevent the thread being raised or lifted out of the guide by the attendant. The frequent temptation to the attendant to thus remove the thread from the guide arises from the formation of bunches or knots in the thread, which are too large to pass through the guide, and should be broken out, and the thread neatly tied. This construction of guide effectually prevents this, and compels the operator to remove the bunch or knots and tie the thread so that it may continue to be drawn through the guide. The traversing bar, F, is arranged to work in guides formed by slotting the sides of the arches, C, to receive the bar, thus bringing the bar close to the side of the cam, H. The cam is in the form of a hollow cylinder having an endless slot which extends diagonally nearly the length of the cylinder on two sides, thus having a V shape at the points where the grooves return, or passes from one side of the cylinder to the other. An arm, G, carrying a friction sleeve, projects from the traverse bar and works in the said groove. The bar is caused to traverse a distance of the length of the spool, A, between its heads, thus laying the threads thereon evenly and perfectly. A traverse bar, F, is arranged on each side of the cam, the form of the slot causing the respective bars to reciprocate in opposite directions, and winding the thread upon two different sets of spools operated simultaneously by the same drum. The cam is secured upon a short shaft, I, by means of a set screw, so that it may be adjusted longitudinally, as required by the wear of the edges of the cam groove, or the guide, or other cause. A spur groove is formed on the outer end of the same, and meshes with a pinion, J, which forms part of the gearing by which motion is communicated to the cam shaft, and thereby to the cam itself, and likewise secures a more compact arrangement of gearing, greater economy in the manufacture of the machine, and less friction in its operation.

This machine can be seen in operation at the Alberton Mills, Md. Patented through the Scientific American Patent Agency. For further particulars address the inventor, as above.

A NEW WORKING GLOVE.

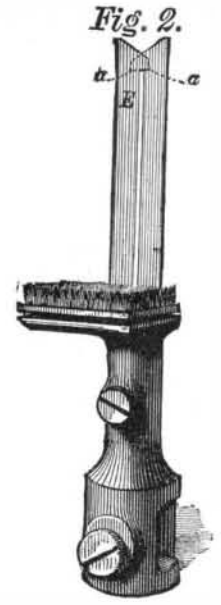
Ordinary gloves, such as are used in husking corn and doing other similar kinds of work, wear out first upon the tips of the fingers and thumb, and upon the ball of the thumb. To obviate this unequal wear, and to render the

TOWNSEND'S WORKING GLOVE.

glove more serviceable, Mr. Cyrus M. Townsend, of Standing Rock, Dakota Ter., has devised the glove shown in the engraving.

The body of this glove is of the ordinary form and materials, and to its inner or palm side are attached pieces of cloth upon which, in places subjected to the greatest wear, there are surfaces that are covered with a protecting coating of sand and rubber. Instead of applying the protective coating to the cloth in this manner, it may be applied directly to the face of the glove.

Fig. 2.



Spooling Machine Guide.

The rubber coating protects the glove and renders it waterproof at the points to which it is applied, and the sand assists materially in removing the husks from corn; it also renders the glove more effective in grasping objects of any description.

Patented through the Scientific American Patent Agency, May 21, 1878. For further particulars address the inventor, as above.

Public Heating by Steam.

Auburn contemplates the introduction of the Holly system of steam heating, and at a recent meeting of citizens to consider the project some very interesting statements were made by Mr. Holly and others relative to the working of the system in Lockport last winter. To test the system financially some three miles of main pipes had been laid through sparsely settled neighborhoods, and several houses heated by steam. Each consumer contributed the amount of his previous year's coal bills, and the amount reimbursed the company for expenses.

This was thought a thorough test, since in a thickly settled district the system would work more economically and profitably: the extreme mildness of the winter, however, may have been an element worth considering. The mains ran up hill and down, and the loss from condensation was small, less than three per cent on a mile of pipe when the full capacity of the main was used; the water so formed was carried along with the steam into the houses, where it was collected, with that from the service pipes, in reservoirs, giving a supply of pure soft water for domestic purposes. The cost of fitting up a house of "good average size" with radiators, pipes, etc., ready to be heated by steam, was one hundred and thirty-five dollars. The cooking done by steam heat was highly commended.

Lighter and Keener Tools and Implements.

As implements made of steel are lighter, stronger, and keener than those of iron, so are they better adapted to use by manual labor, by horse power, or by the power of water and steam. A man walks easier with light shoes, light clothes, and spends his time more directly upon the work before him in proportion as there is less labor between himself and that work. Give a man an iron ax, and he, besides becoming discouraged, finds his blows to tell less efficiently and with less precision than when there is an edge of sharp steel between his hands and the tree. The same applies with all kinds of blunt, unscientifically shaped implements. A hoe of right inclination will go under and lift the soil while another will drag over it. A lipped drill will go under the grain of a Bessemer steel rail, while such a drill as is ordinarily used in boring cast iron will only operate to render the fibers more compact, and will have about the same difference of effect in boring as a blunt and a sharp edged ax do in cutting. Every carpenter knows the difference in a properly and improperly filed saw, and in two different lipped augers. A sloping plowshare will scour and run lightly under the soil, while a blunt one will clog and drag through it with difficulty. The same is true of the cutting edge of a turning tool for iron, wood, or steel, or the plane for either of these.

With the discovery of a process for cheaper steel, it is practical to give a very much diminished weight of metal in carriages and carts as well as in railroad cars and any other machinery requiring strength and lightness. The chief success of American manufactures in competition with the older nations, where labor is cheaper and manufacturing longer and more economically established, is their lightness, strength, and peculiar adaptability to the labor they are to perform.

A ditch digger handling a shovel weighing but five pounds and lifting five pounds of dirt will work with much more animation and to much more purpose than if raising five pounds of dirt on a shovel weighing ten pounds. The same is true in all mechanical appliances and powers, whether of a pump, a steam engine, a water wheel, or any other. The cost of raising dead weight is often the difference between failure and success.

New Mechanical Inventions.

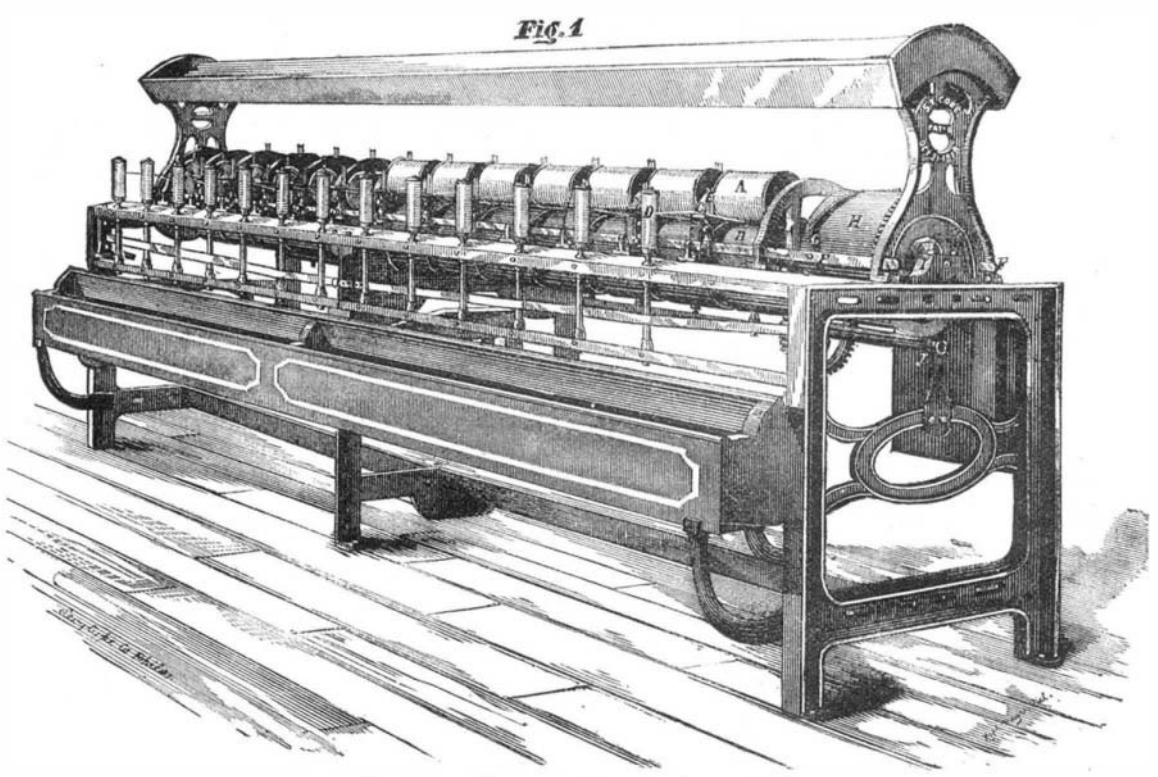
An improved Double-acting Pump has been patented by Henry J. Humphrey, of Grundy Center, Iowa, and Luther C. Humphrey, of Augusta, Wis. This invention relates to double-acting lift and force pumps, and it consists in a barrel containing two double pistons, the rods of which pass through slots in the side of the barrels, and are connected with a lever fulcrumed at the top of the pump stock.

George J. Kautz, of Emporium, Pa., has patented an improved Device for Rolling and Turning Logs in sawmills. The log is rolled by the engagement of teeth with its outer surface, and the bar which carries the teeth is constantly drawn forward into engagement with the log by a weight.

Gaylord Bell, of Cheyenne, Wyoming Ter., has patented an improved Driving Attachment for sewing machines, lathes, scroll saws, and other light machinery, by which the same may be run evenly and effectively by the pressure of the foot, avoiding dead centers, and the possibility of running backward so as to break the thread.

Wilhelm Meissner, of New York city, is the inventor of an improved Music Box, having a cylinder provided with pins and a screw wheel. The cylinder, when rotated, operates a set of hammers which strike upon the plates of a "metallophone," and produce clear bell tones.

Fig. 1



NEW COTTON SPOOLING MACHINE.