Machinery and Appliances.

IMPROVED SCUTHER.

MESSRS. JOHN HETHERINGTON AND SONS, VULCAN WORKS, MILLAR STREET, MANCHESTER.

Resuming our notice of the machines constructed by the above-named firm, we select this week the scuther, in which we have to draw the attention of our readers to a very considerable improvement, besides several of only a little less importance.

As observed in a previous article, the scuther is the original mechanical opener and lap forming machine, being only, we believe, preceded by the Oldham Willows, which did not form a lap. For a time it was a fairly efficient machine, but when the cotton trade began to expand and the freight charges upon the raw material became an item of consideration, cotton began to be compressed, and it was in opening it from this condition that the weakness of the scuther became apparent. This led to the introduction of the opener proper, which was constructed specially to deal with the matted masses of the cotton in its compressed form. It was placed before the scuther to prepare the cotton for it, which it discharged in a loose form ready to be fed to the scuther: the addition of the lap forming arrangement to the opener was a subsequent thought, the device being to ensure a uniform feeding of the scuther and economy in the cost. As competition originated a demand for the highest degree of excellence, to reach this the finisher lap machine was brought in, by which it was supposed perfection was attained. Quite recently, however, the heavy compression to which cottons are subjected, has led to the introduction of a fourth machine, the bale breaker or opener, into the series, this being placed first of all. A complete series of machines for opening and lap forming on the newest principle, now consists of four, though in many cases there are still only three, and where low numbers are open, and where the quality is not high, two only, the opener and scuther, are in use.

Whether the scuther be used as an intermediate or finisher, it is highly important that its work should be as perfect as possible. In order to ensure this, machine makers have devoted a great deal of attention both to its principle and details. Amongst these Messrs. John Hetherington and Sons must be awarded a prominent place. The scuther, as made by them, which we illustrate herewith, has been greatly improved in the most important details, as the following description will demonstrate.

First of all it has been the practice to supply one fan to each pair of cages, and the fan has been placed in the centre of the shaft, and has necessarily been subject, at its high speed, to a certain amount of unsteadiness, accompanied by an irregularity of draft. The makers have avoided both of these defects, by dividing the large fan into two small ones, putting one on each side, which distributes the draft better, and brings the cotton more evenly to the cages; the fans also work with much greater steadiness, as they are arranged so much nearer to the bearings, and can, therefore, be run at the highest speed without injurious effects resulting.

A second point to be noticed is an improved arrangement of the cages, in which the larger one is placed on the top, and the smaller one below, the former being considerably nearer to the heater than before. This gives a much greater effective area of grid bars and dust box, and of course correspondingly increases the cleaning power of the machine. The arrangement also provides a space for the cotton under the part of the top cage, against which the cotton first strikes, after coming from the heater. Thus the dirt shaken out at this point falls directly through the grid bars, and is not liable, as in the ordinary arrangement, to be caught and carried in between the two layers of cotton forming the lap, and from which it has to be shaken out in the subsequent process.

A third point, the one to which special reference is made above, and which is perfectly novel and probably the most important of the series, is the improvement made in the cage box, which has been rearranged in several respects. The cones themselves have been almost doubled in diameter, and the levers by which the strap is traversed have been made longer, and the fulcrum placed at one end. As a result, the strap fork at every point of its movement is kept much more close to the cone, and moves up and down with a steady vertical and parallel motion, the action of the fork and the movement of the strap being much quicker and more sensitive than previously. In the old arrangement with short centre the strap fork was carried away from the cone, and the action was slower and less certain.

The feeder is made either with a pair of ordinary feeding rollers, with piano motion, at the option of the purchaser. At the lap-forming end of the machine the sheet of cotton is compressed by four calender rollers placed one above the other, by which arrangement the unravelling of the lap without "sticking" is assured. The drawing cone is driven by a shaft and bevels from the lap-forming end of the machine.
Foreign Correspondence.

THE MCKINLEY CUSTOMS BILL.

(From an Occasional Correspondent.)

NEW YORK, U.S.A., March 6th.

It may be of interest to the manufacturers of Great Britain to know that the measure now pending in Congress, and popularly known as the "McKinley Customs Administration Bill," this measure has passed the House of Representatives, and it is now before the Senate for treatment. In its present form it contains many important—indeed, radical—modifications of the Customs administration. The official statement made by that department of business at the Custom-houses, to obtain uniformity in appraisements and in the assessment of duties, and to provide a thorough and impartial enforcement of the Customs and Tariff laws.

The principal feature of the Bill is the change in the method of appraisement and reappraisement. Reappraisement is afforded in a sort of roll call upon the part of the importer with the valuation placed upon his goods by the Government officials, called appraisers, and it is effected through the action of a Board of Reappraisement, composed of a merchant and a general appraiser. That the result of this decision is satisfactory may be doubted, when we remember that the merchant acting as an appraiser is generally interested in the question as a trader; but regardless of that section of the constitution which reads that "no person shall be deprived of life, liberty, or property, without due process of law." It might add that if he is to be deprived of life, liberty, or property, without due process of law, the proposition is now made to have nine general appraisers for all the ports of entry, three of whom constituting a board of general appraisers. Section 12 of the Bill is as follows:

The real motive appears to be, according to many observers, that as the Protectionist movement, for the first time in many years, at once the House of Representatives, the Senate, and the President, would be compelled to grapple with the question of tariffs, to get some measure passed by the Senate, as to the want, how much they would exercise, as benefits of the duties, that provision of laws, that it would not be left in the hands of the President or the legislature.

That this attempt to embarrass and impede the progress of the tariff measures of the United States and foreign commerce and industries to radically modify, without the gratest resistance of a national and general and system of Customs law, all procedures, with the experience of a century, should meet with so little opposition, and that the President may not be made known when the bill is reported to the Senate. The right of trial by jury will not be taken away so easily by the President. 10 is intended to restore the duty on various charges incidental to merchandise, which are found under this present law.

Sect. 19. That whenever imported merchandise is subject to an ad valorem rate of duty, or to a duty based upon or regulated in any manner by the weight or measure of the goods, as may be conveniently found upon the actual market value or price of such merchandise, as bought and sold in usual wholesale quantities, at the time of exportation to the United States, in the principal markets of the country from whence imported, and the condition in which such merchandise for bartering and selling, and for exportation to the United States or consigned to the United States for sale, including the value of all cartage, cases, crates, boxes, sacks, or packages, and all other charges, and expenses incident to placing the merchandise, shall be levied and collected upon the duties, and, if there be, used for covering or holding imported merchandise, which is free of duties, or imported specifically duty, or any other material article other than the usual or necessary covering, or covering or holding such merchandise, duty shall be levied and collected upon such material or article at the rate to which the same would be levied and collected upon such material or article at the rate to which the same would be subject if separately imported and entered as a "specific duty," whenever used in this act or in any law relating to the appraisement of imported merchandise, and is intended to mean the actual market value or wholesale price as hereinafter defined.

Under the present law, if the invoice or the entered value be advanced 10 per cent. by the U. S. appraiser, that fact is declared by law to be positive evidence of fraud, and the value is subjected to the full amount of the tax. In such case, and if the fact of fraud is established by the evidence, and the bill is not, the duty is doubled, and if the entered value is 1,000 dollars, and the appraiser increases the value to 1,100 dollars, the duty collected, say on silk goods, the duty on which is 50 per cent., would be:

<table>
<thead>
<tr>
<th>Entered Value</th>
<th>Appraiser Value</th>
<th>Custom Duty</th>
<th>Total Duty</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,000 dollars</td>
<td>1,100 dollars</td>
<td>550 dollars</td>
<td>650 dollars</td>
</tr>
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</table>

Total duty collected: $650.

It would obviously be best not to assume guilt, but to let the importer, as suggested, in common with the other citizens of the United States, be considered innocent until after he has been tried and convicted.

The McKinley Bill would appear to regard imports as a crime; it holds that a person who is not in the customs service is, without due process of law, deprived of life, liberty, or property, and that the Bill is intended to be the provision of laws, that it is the provision of laws, that it is the provision of laws, that it is the provision of laws, that it is the provision of laws, that it is the provision of laws.