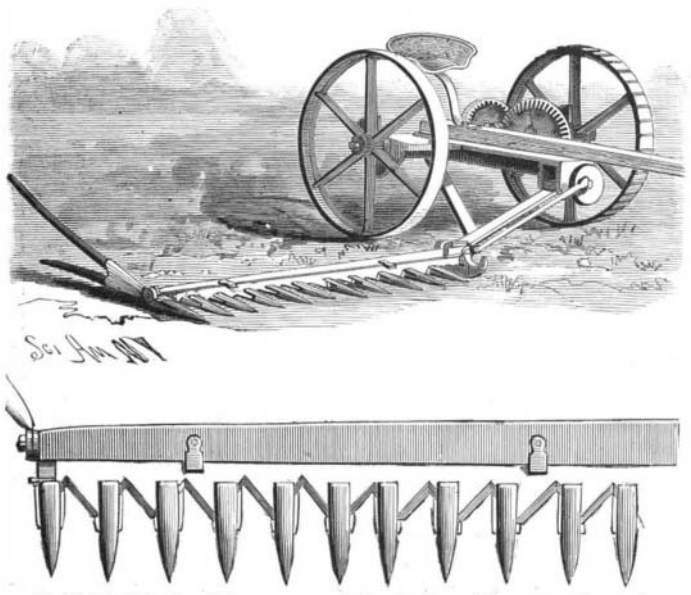
IMPROVED CUTTER BAR FOR MOWERS AND REAPERS.

The great advantage derived from the use of the improved cutter bar for mowers and reapers which is here illustrated is that it makes old machines run very much easier. The improvement is exceedingly simple, and the saving in power to be derived from its use is apparent. The middle or intermediate fingers of the guard are arranged somewhat closer to each other than the remaining ones on each side. The middle cutting teeth, or single tooth, where the fingers are of an odd instead of an even number, are made wider at their base ends than the others on each side. This arrangement virtually amounts to lengthening the cutter bar and shortening the finger bar at their centers. By this construction the cutting teeth throughout one-half of the length of the bar, when moving in either direction, are made to complete or nearly complete their cut before the teeth of the other half come into cutting position with the fingers, thus dividing up and easing the cut in both directions of the cutter bar's travel. This improvement has given great satisfaction wherever used, and even when applied to old and hard running machines has made them run easier than when new. It also does away with clogging.

This improvement is the invention of Mr. L. Rundell, of Grapeville, N. Y., who will furnish further particulars. It may be applied to any machine for five dollars.



RUNDELL'S IMPROVED CUTTER BAR FOR MOWERS AND REAPERS.

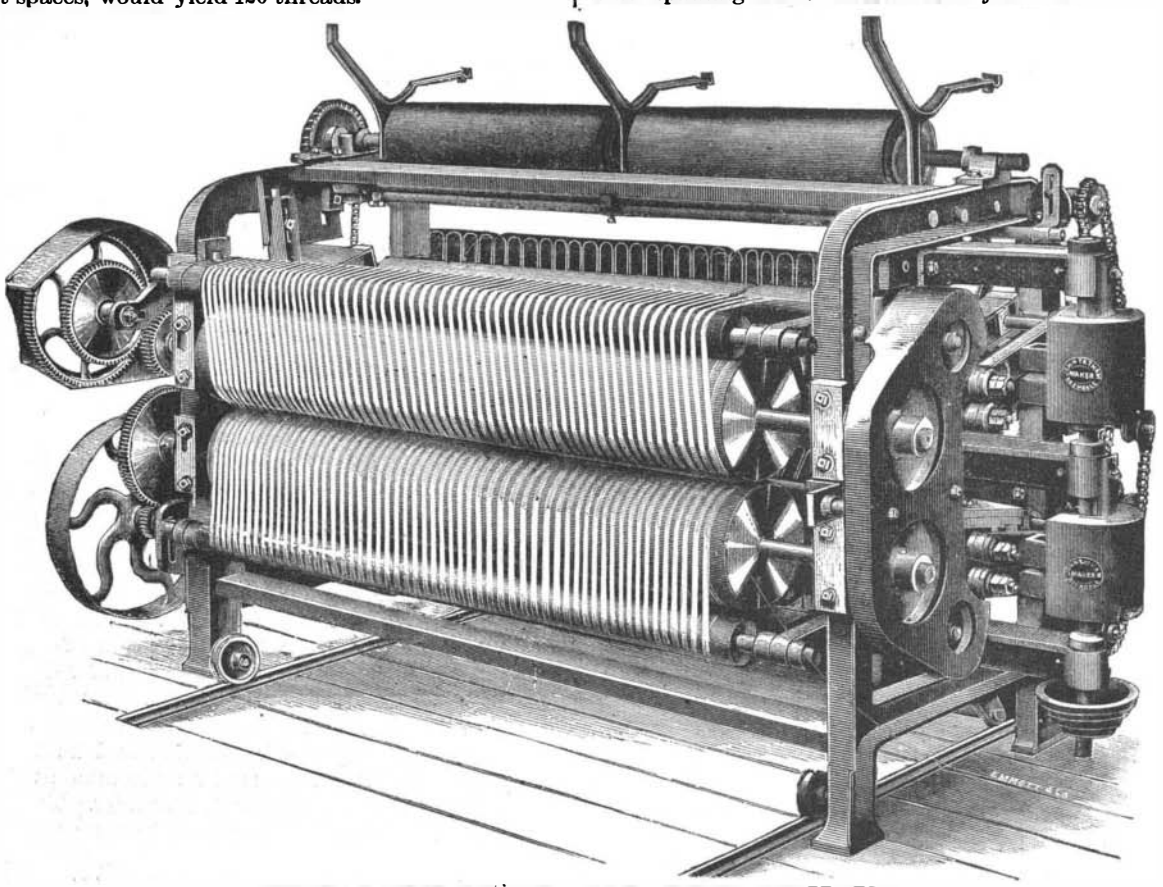
IMPROVED CONDENSER FOR WOOL, COTTON, COTTON WASTE, ETC.

The somewhat crude state of much of the woolen machinery still in use finds many exemplifications. It is well known that, in order to divide the sheet of carded wool into threads, a large amount of the surface of the doffer card is lost through the necessity of spacing it in order to effect the division. Hence the actual capability of the machine is reduced this much. A 60 in. doffer, through this necessity, can only, on the old plan, give about 60 threads, while the effective work it could do under ordinary circumstances, without spaces, would yield 120 threads.

The raw material is usually passed through three cards—the scribbler, the intermediate, and sometimes two finishers. These differ only in the details, consequent upon the treatment of a different fiber, from those of a cotton mill, and in this respect it is mostly in the methods of feeding and doffing that the variation is principally made. As observed above, it is in the doffer of the finisher card where the chief difference is made. By the alteration introduced here, the woolen and cotton waste trades are enabled to dispense with the drawing, slubbing, and intermediate roving frames, or any machine analogous thereto. In fact, drawing in the woolen manufacture is avoided wherever possible, and where not possible, is only carried to the extent necessary to secure the desired attenuation. Hence th requirement of doffing from the finisher card in the form of thin tapes of wool, which in the condenser, by the transverse action of the rubber leathers between which these tapes pass, are rolled or condensed—not twisted, because the action is a backward and forward movement—into threads, and wound upon the condenser bobbins, ready for the drawing or spinning mule, accordingly as they have to undergo further attenuation or be made into a finished thread at once.

The machine we illustrate herewith is a new condenser, which works equally wool, cotton and cotton waste, by Mr. John Tatham, of Rochdale, and which is a decided improvement upon the old form, as it economizes the capability of the card to its full extent by permitting the doffing cylinders to be covered throughout with an ordinary fillet card without spaces, as described above. Hence a 60 in. doffer is made to yield 120 good condenser threads, as against 60 on the old plan. This is accomplished by relieving the doffer of the duty of dividing the wool and carrying this a stage further into the condenser, where, by the introduction of a pair of rollers (shown in the front of our illustration), having their peripheries grooved into spaces of the desired sizes, and in which the projections of one roller fit into the corresponding grooves of the other, the whole space is utilized and the production doubled. These are termed tape rollers, because of the series of tapes with which they are furnished (as shown), and which carry the sheet of wool from the doffer cylinder, where it is divided into the required number of threads by the action of the grooved rollers, and thence delivered to be condensed in the ordinary way by the rubbers. This is the main feature of the improvement, the remainder of the condenser not having been materially altered.

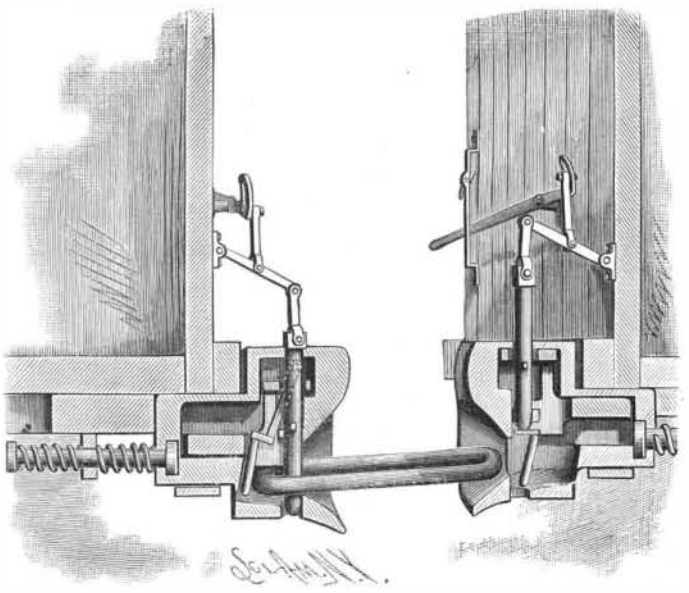
As compared with many condensers now in operation, the new one is a very substantially constructed and beautifully finished machine, with numerous improvements in details that need not be dwelt upon here, but which will at once strike the observer. The great fact to be dwelt upon is that the improvement increases considerably the production from the card, with the important results that this statement implies, and effects considerable saving in the subsequent operation in the spinning mule.—*Textile Manufacturer.*



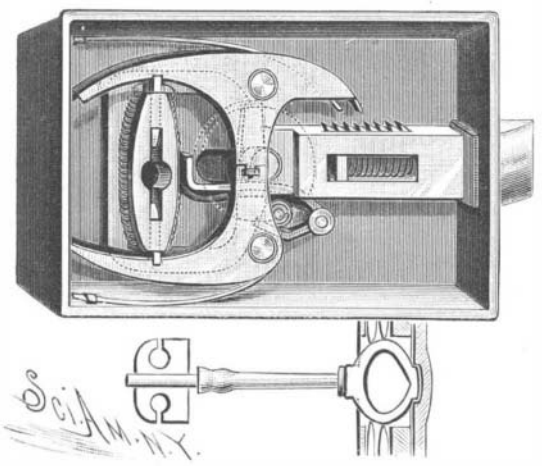
IMPROVED CONDENSER FOR WOOL, COTTON, WASTE, ETC.

THE KEYSTONE AUTOMATIC CAR COUPLER.

It is claimed that the car coupler herewith illustrated meets all the requirements of the convention held by the executive committee of the Master Car Builders Association at Buffalo in September, 1885—that it will couple with the standard link, and automatically with its own kind at a slow speed, and also when the cars are brought together sharply; and it can be set not to couple when the cars come sharply together. It will operate on a straight track or on a sharp curve, and will couple cars whether high or low. As the coupler can be operated from the side of the car by means of a lever, in uncoupling and also in setting the coupler to couple, there is no occasion for the brakeman to enter between the cars, and all danger of accident is thus avoided. The floor of the link recess slopes downward and backward, and when the link is inserted its outer end is raised in position to enter the opposite drawhead by a weight or dead block resting upon its inner end, as shown at the left in the engraving. To uncouple the cars, the latch of either car may be tripped from its lever, which will then fall to lift the coupling pin and dead block, leaving one end of the link free to allow the cars to be drawn apart. While the lever is in this position, the cars are drawn apart, and a gravity pawl swings forward under the lower end of the pin and holds it up. The outer end of the operating lever is lifted and held in its raised position by a latch; the coupler is then set to couple, and as soon as the entering link strikes the pawl, the latter is moved backward to allow the pin to drop through the link and couple the cars. In this coupler there are no springs or other delicate parts, and it is strong, reliable, and effective.



THE KEYSTONE AUTOMATIC CAR COUPLER.



ADAM'S COMBINED LATCH AND LOCK.

This invention has been patented by Messrs. N. T. Dundore, H. H. Sechrist, and I. M. Brubaker, of Dundore, Pa., to whom railroad companies, car builders, and others interested may apply for rights of manufacture and of use.

COMBINED LATCH AND LOCK.

The accompanying engraving represents a locking latch, the bolt of which may be fastened in an opened or closed position from the inside of the door, or left free to be operated by a key from the outside of the door. The stud of the knob of the lock passes through a slot in the face of the case, and carries at its inner end an arm which may be so set as to lock the bolt in its extended or withdrawn position; but when this arm is in a position at right angles to the bolt, the latter can then be operated from the outside of the door by means of a key. To increase the security of this latch, the key is formed at one end with nibs resembling those of an ordinary key, which will enter the lock, but will be unable to move the tumblers so as to permit of unlocking, while the opposite end is provided with a bow which will enter the lock, and will move the tum-