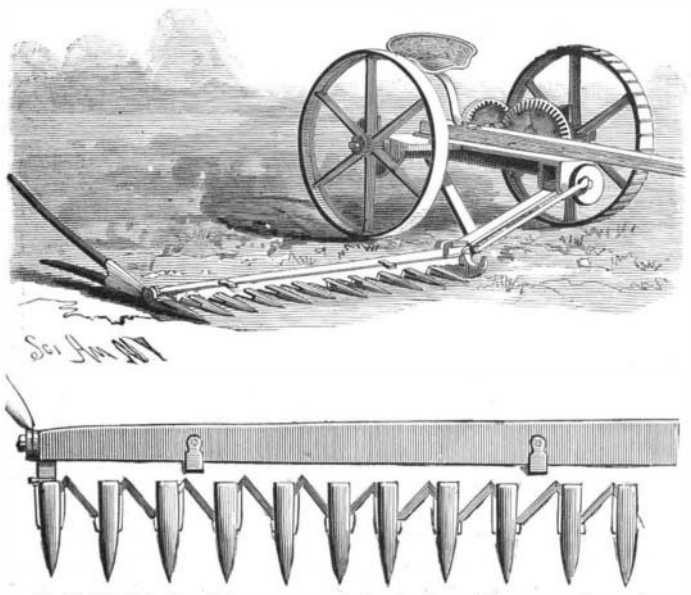
IMPROVED CUTTER BAR FOR MOWERS AND REAPERS.

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.

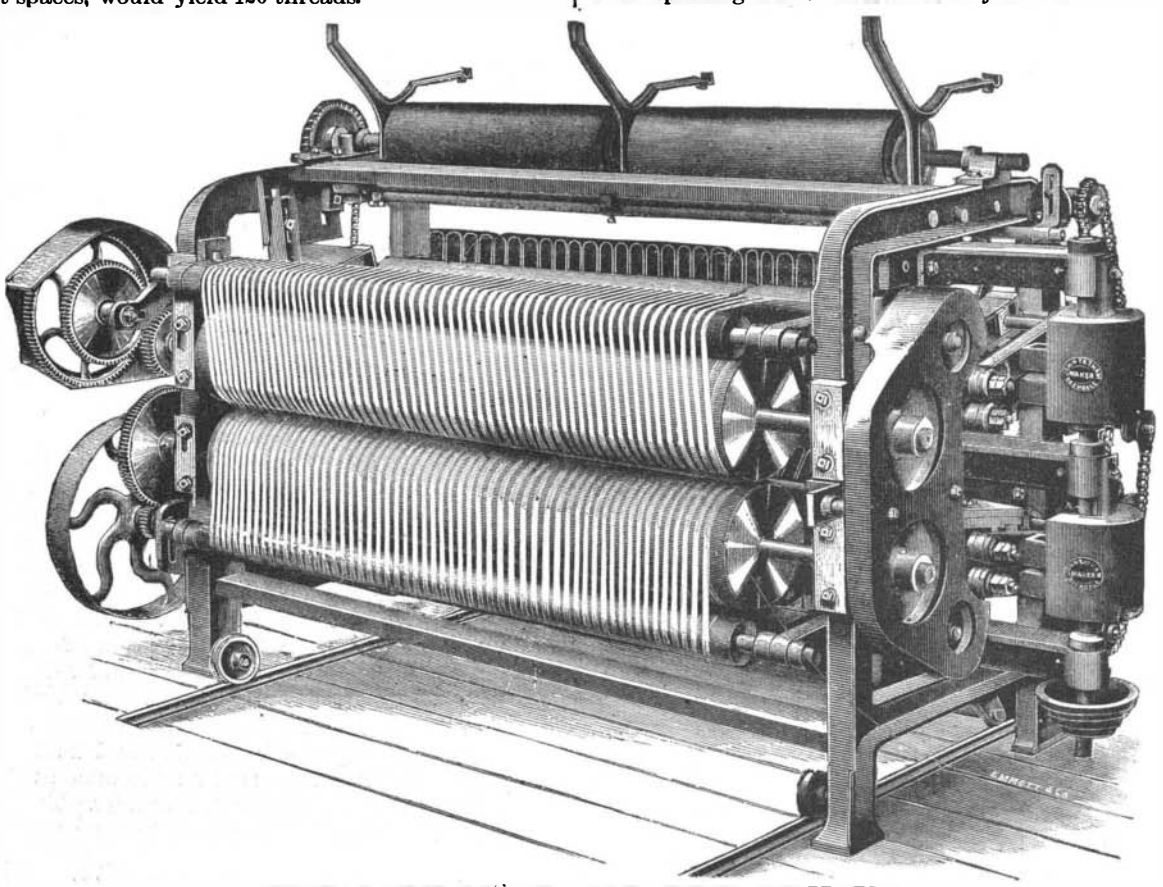
IMPROVED CONDENSER FOR WOOL, COTTON, COTTON WASTE, ETC.

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.

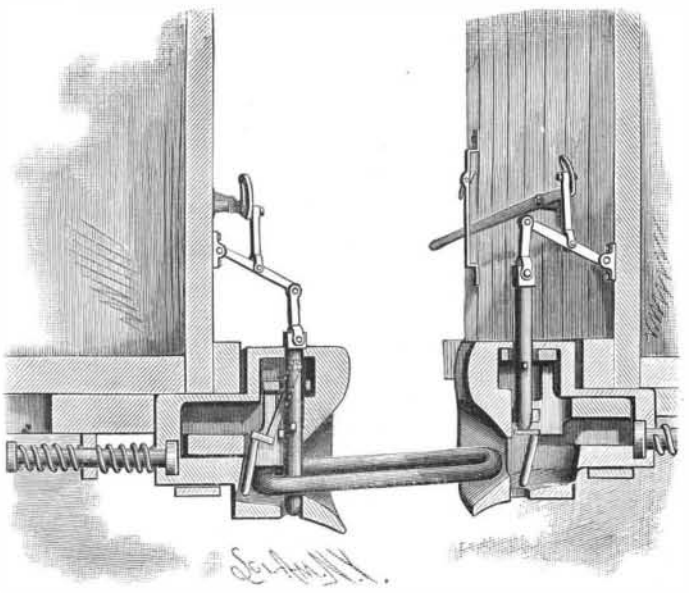
As compared with many condensers now in operation, the new one is a very substantially constructed and beautifully finished machine, with numerous improvements in details that need not be dwelt upon here, but which will at once strike the observer. The great fact to be dwelt upon is that the improvement 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.*



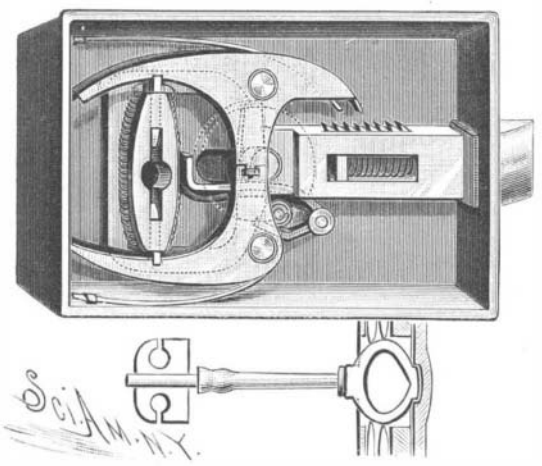
IMPROVED CONDENSER FOR WOOL, COTTON, WASTE, ETC.

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.



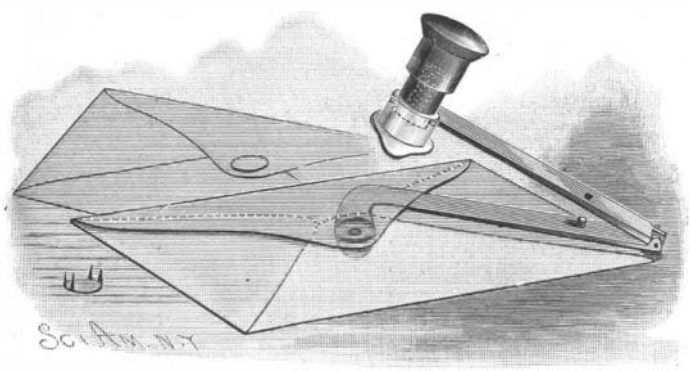
ADAM'S COMBINED LATCH AND LOCK.

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-

blers, so as to permit of unlocking by turning the key. The key is made in this form for the purpose of deceiving persons who are unauthorized to use it, the object being to convey the idea that the end of the key provided with nibs is to be employed for operating the lock, while it is impossible to operate it except with the bow end. When a key of this kind is lost, if the finder is disposed to attempt to use it he will naturally employ the nib end, and will be unlikely to try the opposite end. Should a key be inserted in the key nut, which will not move the tumblers sufficiently to release the levers, the key nut cannot be turned, and should a key having too great width be inserted in the nut, levers will be moved so far as to bring properly arranged pawls into engagement with a rack bar formed on the bolt, which will thus be locked, so that it cannot be withdrawn, even though the key nut be released.

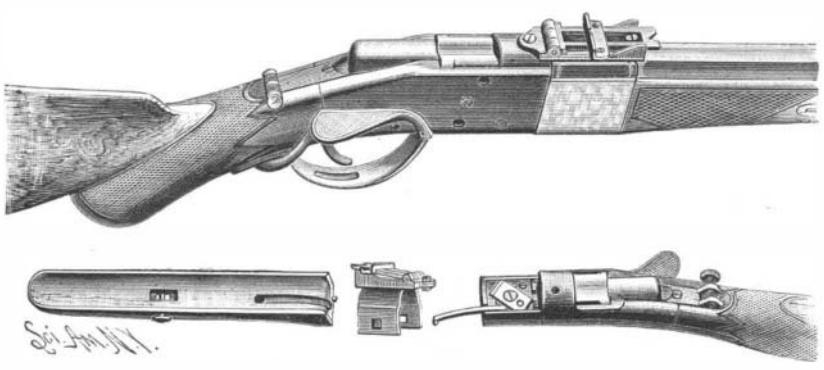


EDER'S DEVICE FOR SECURING ENVELOPES, ETC.

This invention has been patented by Mr. William C. Adam, 867 Washington Street, Buffalo, N. Y., who will sell the patent or receive offers to manufacture on royalty.

IMPROVED FIREARM.

Mr. Salvatore J. Buzzini, of 500 West 125th Street, New York City, has recently patented an improved firearm, which we herewith illustrate. By means of this invention the barrel of the firearm may be readily attached and detached, or replaced by another when necessary without having recourse to a gunsmith or other skilled artisan, which will be found a great convenience to sportsmen and others. It also provides for a more accurate return of the barrel to its normal position than is practicable when the barrel is secured by screwing it into the stock of the gun, and it also provides for the ready dismemberment and securing of the forearm and stock, as well as the barrel. The upper engraving shows the parts assembled and the lower one shows the parts separated, with the barrel removed. The rear end of the barrel is provided with flanges, and lies within the half socket portion of the stock, and may be provided with a rear smooth extension, arranged to fit within a smooth socket of the stock. This construction differs essentially from a screw-threaded fit. The barrel is held firmly at its rear end, and secured from forward or longitudinal movement by a locking cap, which is removably held in place. The top of the cap forms the base piece of the hinged and adjustable sight.



BUZZINI'S IMPROVED FIREARM.

This firearm is also provided with a lever for opening and closing the breech, and which serves as a trigger guard. The lever not only ejects the exploded shell, but cocks the arm, and the same motion automatically moves a safety catch which locks the trigger, thereby preventing accidental discharge. The arm cannot be discharged except by intentionally releasing the catch and pulling the trigger. In order to permit rapid firing, there is an adjustable device controlling the safety catch, so that the closing of the breech lever automatically releases the catch from the trigger. When rapid firing is not needed, the adjustable device can be set so as not to release the catch.

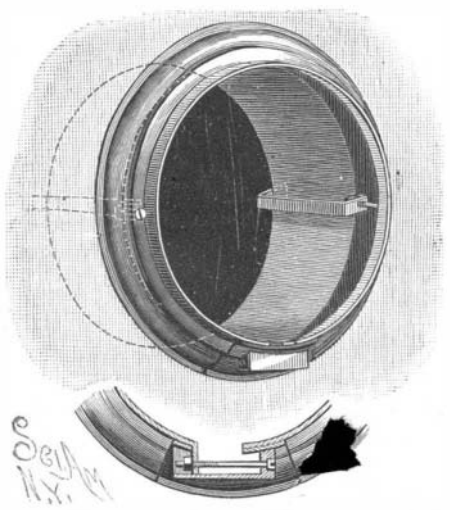
DEVICE FOR SECURING ENVELOPES, ETC.

The simple device which the accompanying engraving illustrates is designed for securing or sealing envelopes, binding bills or statements, etc. The device consists of two flat bars bent to the shape shown, and hinged together at the ends of their long arms. Near the end of one short arm a concavity is formed, over which rests, when the bars are closed, a tubular section secured to the other short arm, which is formed with an aperture the same size as the tube. Fitted to slide in the tube is a follower, which is normally pressed upward by a spring. To use the device for sealing an envelope, the flat arm is inserted in the envelope, between the back and contents, when the flap is then folded down. In the tube is placed a disk of thin sheet brass or other suitable metal formed with sharp spurs bent at right angles to the disk. This arm of the device is then turned so that the spurs rest upon the envelope flap, when the follower is struck a light blow with the hand, driving the spurs through the flap and back of the envelope. The spurs strike the concavity and are turned inward toward the center of the disk, so as to fasten the two sheets of paper securely together. By turning the arm as it is drawn out, it may be removed from the envelope without danger of tearing the paper. It is evident that sheets of paper of any description may be fastened together in the same way. If desirable, the disks may be stamped with a trade mark, firm name, or suitable device.

This invention has been patented by Mr. James M. Eder, of 27 Holborn Viaduct, London, England.

IMPROVED STOVE PIPE COLLAR.

The object of this invention is to provide a simple and efficient device for clamping a stove pipe, and holding it in its position in the flue. The collar is of the usual form, and is divided at one side by cutting out a segment. This opening is covered by a segmental plate, of the same form in cross section as the collar, and which overlaps the ends of the collar. The plate is secured to one end of the collar so as to slide over the opposite end. Upon the face of the plate is formed a projecting chamber, open on its upper side and at one end, and from the free end of the collar an ear projects into the chamber. A bolt passes through an opening into the chamber, through an opening in the ear, and receives a nut beyond the ear, so that, by turning the bolt, the collar may be contracted or expanded as required, as will be understood from the lower figure in the annexed cut. The collar is held in place on the flue by L-shaped straps, the long arms of which are inserted behind the wall of the flue and the short arms are apertured to receive bolts which pass through the front of the collar, through the short arms and into nuts behind the arms. The divided collar is placed against the wall of the flue, the angled plates are inserted and their bolts are tightened sufficiently to hold the collar in place. The stove pipe is then passed through the collar and into the flue, when the collar is contracted around the pipe by turning its bolt until the pipe is clamped tightly in the collar. The bolts in the angled plates are then further tightened to draw the collar closely against the face of the flue, and thus hold the pipe firmly in place.

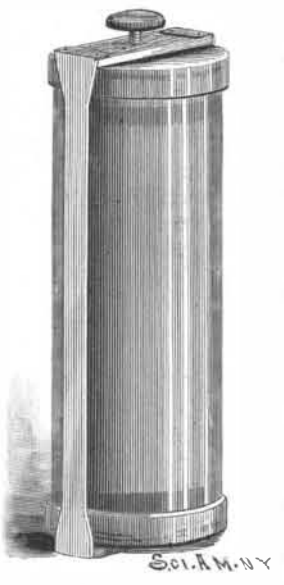


MATHER'S IMPROVED STOVE PIPE COLLAR.

This invention has been patented by Mr. Edgar Mather, of Matherton, Mich.

IMPROVED BUTTER JAR.

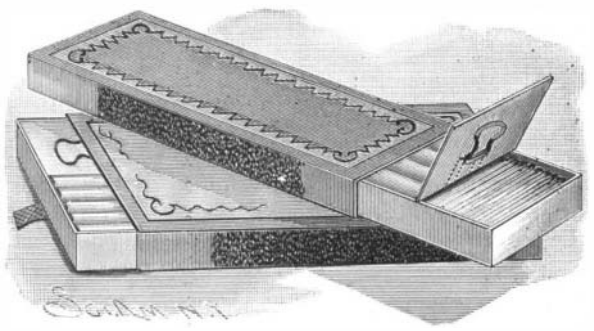
This butter jar consists mainly of a cylinder made of glass and two end caps or covers which are fitted to the outside of the tube and are adapted to press on packing placed at the ends of the tube to make air tight joints. The clamp frame consists of top and bottom cross pieces and side pieces, and is made to receive the cylinder with its caps on. In the top cross piece is fitted a screw, which may be screwed down hard upon the cap, to press together both caps, and draw their packings tightly to the ends of the tube. The clamp frame may be made of any material having the requisite strength. As here illustrated, the top and bottom pieces are made of wood and the side pieces of a metal strap in one piece, bent under the bottom piece and fastened at its ends to the top piece. Within the tube are placed one or two plungers, the inner faces of which, next the butter, may be formed with any desired design to imprint the butter as or before it is removed for use. It is obvious that when the clamp frame is removed, either of the plungers may be pressed against to force the butter from the opposite end of the tube in any desired quantity, and the butter projecting from the tube will have smooth, true sides, and may be cut off easily by a knife passed closely to the end of the tube. Butter not used may be returned to the tube. The tubes may be made of any desirable shape in section, and of such size as to hold a given quantity, thus obviating the necessity of weighing the butter when selling it. The name of the producer of the butter may be marked upon the tube. This jar makes a convenient package to handle, allows the butter to be cooled, by putting it in cold water or ice, and the butter in it remains sweet and fresh for a long time.



This invention has been patented by Mr. H. E. Hinman, of Ravenna, Ohio.

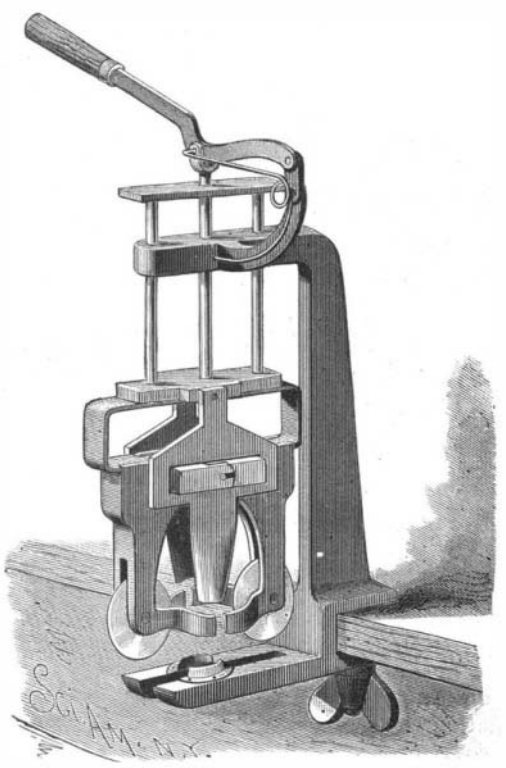
COMBINED CIGARETTE AND MATCH BOX.

At one end of the interior box, which is adapted to slide in a casing of the usual form, is a transverse partition, having an upper integral portion, which may be bent over to form a lid for the end compartment, which is designed to hold matches. The other compartment is purposed to hold cigarettes. As the inner box is drawn out, by means of a piece of tape attached to its bottom, the lid of the match compartment is opened by a simply arranged rubber band. The interior box can be pushed or, preferably, drawn into the casing by grasping the opposite end of the tape. The upper box shown in the engraving is designed to hold ten cigarettes, while the lower one holds twenty, and is provided with a compartment for matches at each end.



SAVAGE'S COMBINED CIGARETTE AND MATCH BOX.

This convenient article for smokers' use is the invention of Mr. Reavel Savage, of 47 Lexington Street, Baltimore, Md.



SMITH'S IMPROVED PEACH STONER.

[FOR DESCRIPTION SEE PAGE 276.]