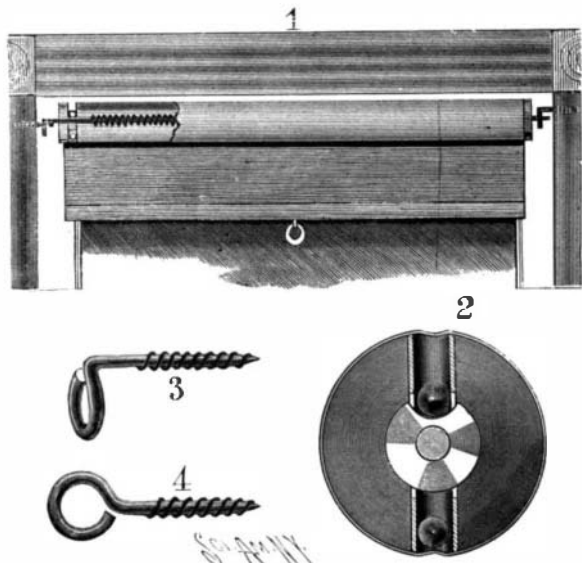


A NEW SHADE-ROLLER ATTACHMENT.

A patent has been granted to Herbert W. Mower, of 98 Cutler Street, Newark, N. J., for a shade-roller which is so constructed that it may be hung either from the upper portion of a window-frame or from the sides, and which is provided with a novel, positively-acting brake for the spring-controlled trunnion.

Fig. 1 is a front elevation of the upper portion of a window-frame, showing the roller in position. Fig. 2 is a cross-section of the roller. Figs. 3 and 4 are perspective views of brackets for hanging the roller.

The roller consists of a metal tube provided at one end with a fixed trunnion, and at the opposite end with a spring-controlled trunnion, bent at an angle to its body to form a pendent bearing. A transverse tube is secured in the roller near the pendent bearing of the spring-controlled trunnion, by indenting a portion of the metal of the roller into the ends of the tube. At its center the tube is longitudinally slotted to receive a



MOWER'S SHADE-ROLLER ATTACHMENT.

disk which is firmly attached to the spring-controlled trunnion. The disk is provided with a recess to receive balls, one of which is located in each end portion of the transverse tube, as shown in Fig. 2. When a ball enters the recess, the disk is prevented from turning until the ball has been dislodged.

The shade is secured to the roller by springs passed at one end through apertures in the shade and through corresponding apertures in the shade-roller, the other end of the spring engaging with the outer surface of the roller.

The hangers, as illustrated in Figs. 3 and 4, are screw-eyes. The eye of one of the hangers is in alignment with the screw-shank; but the eye of the other hanger is at a right angle to its screw-shank.

These hangers enable a shade to be hung from the upper portion of a window-frame or from the sides, and permit a roller to be fitted to a window-frame in which an ordinary roller of the same length could not be hung. The pendent bearing of the spring-controlled trunnion passes through the bent eye; while the fixed trunnion enters the straight eye.

A RAPID WAY OF MARKING OUT CLOTH PATTERNS.

The marking out of cloth by machinery, although it has engaged the attention of many an inventive mind, has not kept abreast with the development of other branches of the clothing and tailoring trades. The particular form of marking out which has attracted most garment cutters is a method in which stencils or perforated "lays," as they are technically known, are employed. Most attempts in this direction have failed because the material for the lays was unsuitable; because the perforations were imperfect; and because there was no satisfactory way of fixing the pattern upon the cloth to be cut.

These defects have been overcome in a method which although originally patented in part in the United States, up to the present time has found its greatest application in Great Britain and in France. The method in question is employed in connection with a patent process marker, and is the invention of Mr. James Marsden, of Wigan, England, a large clothing manufacturer.

The material used for the lays is a durable and inexpensive fabric, the meshes of which are closed by a filling insuring the production of sharply cut perforations. Upon this filled fabric a skilled designer plans and marks out the various patterns ("lays"). After having been thus marked out, the filled cloth is ready to be perforated on the lines of the pattern.

The machine used for this purpose differs in no essential from the usual sewing-machine, except that the needle-bar, instead of holding the usual needle, carries a punch, fitting accurately one of a series of holes formed in a disk sunk flush with the machine-table. These holes are conical in shape; and the end of the punch is similarly formed. By reason of this construc-

tion the punch is cleaned at each stroke, and the minute portions of cloth removed drop into a receptacle below the machine table. The holes are circularly arranged in the disk for reasons of economy; for when a hole has been worn out, another can be swung into place by rotating the disk through the proper distance. In size these holes vary from a perforation so exceedingly fine as to be hardly perceptible to an opening equal to the diameter of a pipestem hole. This perforated disk insures the production of sharply cut perforations and the cleaning of the punch. It is by means of this modified sewing-machine that the marked-out cloth is pierced to form the stencil-like lay.

In order to mark out the cloth to be cut, a glutinous powder is used which is rubbed over the lay, so that an imprint is left on the cloth wherever the powder has passed through the perforations. In order to fix these marks a hot roller machine provided with an automatic folder is used, whereby the powder marks are fixed by the action of the heat on the glutinous ingredients. Thus fixed, the marks cannot be rubbed out during the process of machine cutting. For hand cutting or for linen, cotton and close-grained fabrics, this heating process can be dispensed with.

A lay once made can be used over and over again. It corresponds in effect with the type of a printing press, from which as many prints can be made as may be desired. Not the least remarkable feature of the whole process is the great rapidity with which patterns can be reproduced. A lay which originally required one hour's work of a skilled cutter can be reproduced by means of the process more than twenty times within the same period. The process marker has been applied to every branch of the clothing trades, even to "custom tailoring."

The Excavation of Babylon.

German archæologists are busy with plans for the excavation of Babylon. The late Sir Austen Henry Layard, the explorer of Nineveh, was the first one to do anything in the way of excavating Babylon, then Sir Henry Rawlinson followed. The excavations, it is claimed by the Germans, were done in a half-hearted way, and they are determined that their work shall be thorough. It will be very costly, and it is estimated it will occupy five years. It will be carried on by the Orient Society jointly with the Directors of the Royal German Museum and the leader of the expedition is Dr. Robert Koldewey, who has already had much experience in such work. The expeditions will start from Beirut, going from there to Aleppo, whence they will travel by caravan to Bagdad. Babylon itself is two days' journey from Bagdad, and consists of rough mounds scattered on the banks of the Euphrates, under which lie the ruins of a great city. The excavators will begin with the fortress which is what remains of Nebuchadnezzar's palace, where Alexander died. In addition to their excavating upon the city site proper they will investigate a number of other ruins situated near.

A DEVICE FOR REMOVING DENTS FROM GUN-BARRELS.

In order to provide a means for removing the dents or depressions from gun-barrels, Henry H. Hotz, of Cuero, Tex., has invented a simple device which, by means of an expander-rod and expanding-tube, forces the indented portions out-

wardly.

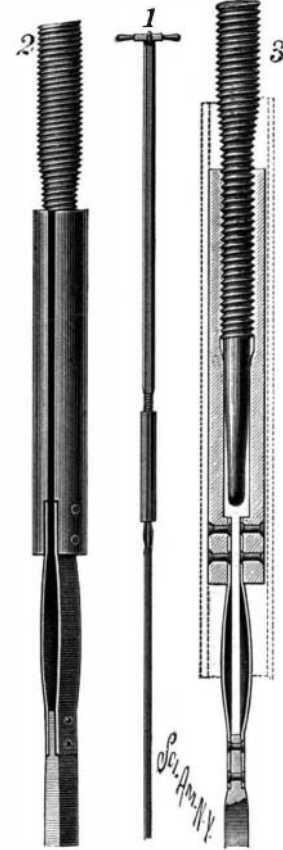


Fig. 1 shows the expander-rod and expanding-tube screwed together. Fig. 2 is a perspective view showing part of the device. Fig. 3 is a longitudinal section through a gun-barrel with the device in operative position, the gun-barrel being shown in dotted lines.

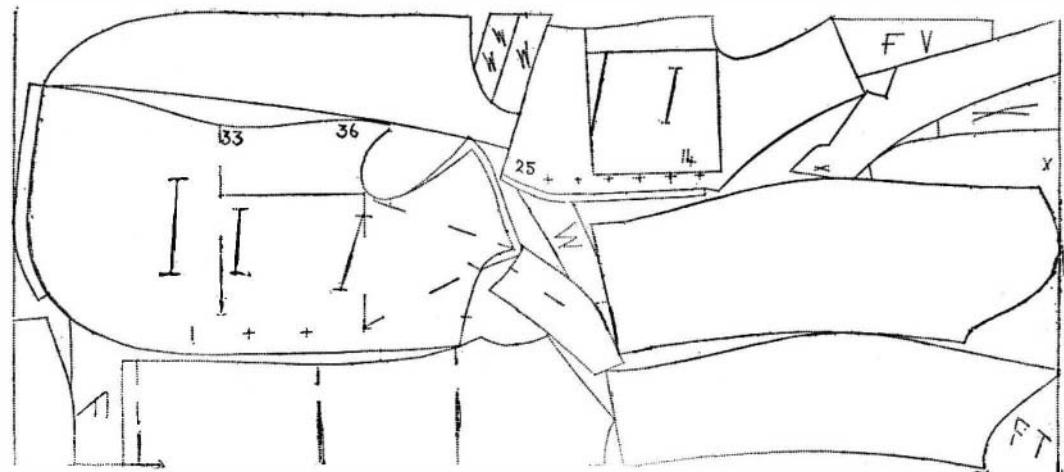
The expanding-tube is constructed in semicylindrical sections which are provided at their upper ends with a threaded bore communicating with a reduced smooth bore, and which are connected by two spring sections secured to a handle.

The expander-rod at its upper end is provided with an operating-handle. The lower end of the expander-rod terminates in a conical tip, surmounted by a reduced plain surface, above which a threaded surface is formed.

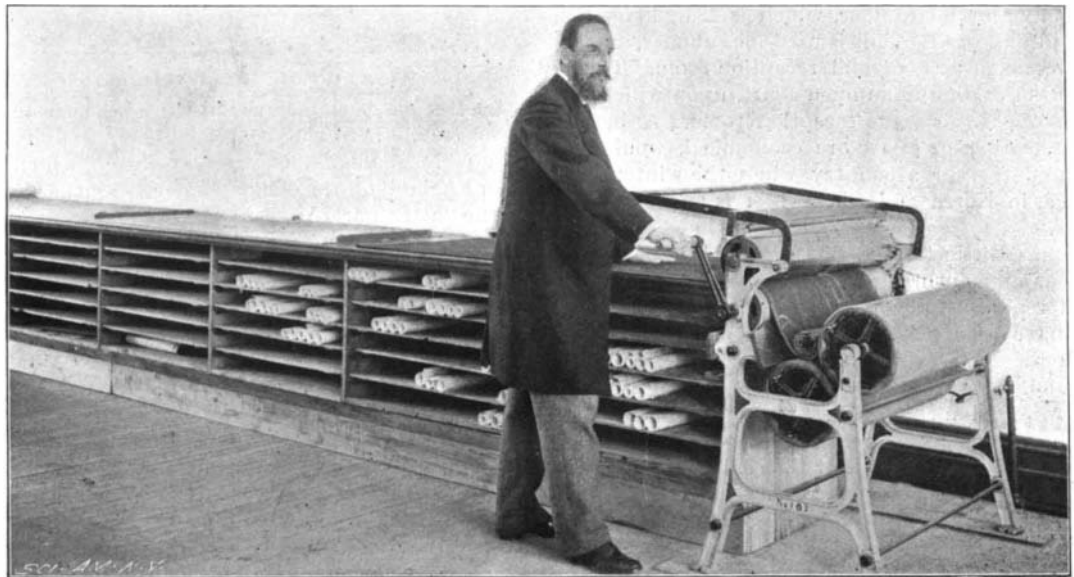
In operation the expanding-tube is inserted in the gun-barrel with the semicylindrical sections opposite the indentations to be removed. The expander-rod is then entered at the opposite end of the barrel; and the tip of the rod is inserted in the tube until the threaded surface of the rod engages the threaded bore of the tube. By turning the operating-handle, the expander-rod is screwed into the threaded bore of the tube, thus causing the reduced plain surface of the rod to engage the smooth bore of the tube and force it outwardly against the depressed portions of the barrel.

The device can be employed to remove the indentations in organ-pipes and other tubes as well as from gun-barrels.

A MEMBER of the faculty of a Western university has announced that he has succeeded in very materially reducing the cost of lithium. The full details of the method have not been disclosed, but electricity is the method by which the metal is separated.



A PERFORATED LAY.



FIXING THE PATTERN-MARKS UPON THE CLOTH.