

the same depending upon the weight and character of the goods under operation, it being readily regulated by the adjustment of the friction plate on the draft roll shaft. Sometimes the effect of this friction is destroyed by not taking proper care of the friction plate. The leather on the friction plate may get too hard and dry, and when such is the case, take off said leather and carefully rub into the latter a small amount of good oil, so as to soften it, but under no circumstances oil the friction plate in a common way of oiling, since such is apt to destroy its usefulness. Be careful that no oil from the roll bearing works through into the friction wheel.

In order that the operator of the shear can see all that needs looking after, he must stand himself in a position where he can see the whole width of the cloth as it passes before him, being at the same time near enough to the shipper handle (*Z* Figs. 1 and 2) to stop or start the shear conveniently. A side view against the light is better than any other position for him, in order to detect any unevenness in the shearing. It is not necessary for the shear-tender in connection with shears where the lever arrangement previously referred to is not provided, for the lifting of the revolver, to use both hands for this purpose, by taking hold of the top bar in the centre, as there is no necessity for using both hands; in fact, it is much better for him to use only one hand for this operation, leaving him in turn a free view of the cloth as it is shearing. For this reason, when being on the left side of the shear and the revolver has to be lifted to permit a seam to pass, lift the latter with the left hand, and when standing on the right side, do the lifting with the right hand.

With reference to cutting the nap, the revolver should be lowered very gradually between the runs, especially in connection with fabrics where the nap is very heavy, and where it is impossible for the blades to cut level, all the way across the fabric, otherwise it will be found advisable in connection with any number of fabrics to rather give them two or more extra runs at one point of the shearing process, more particular towards its finish. Never push the shear for work by close setting, it will not pay in the end, it will result in an imperfect finish to the cloth; it will frequently result in goods sheared too closely, *i. e.*, in a hard handle to the goods thus treated, whereas several additional runs in the process, with one or two notches higher and the shear blades consequently brought less closely into contact with the fabric, will often bring out the pattern just as clearly, and still leave a slight nap on the face of the fabric thus treated, and what will be the means of imparting to the fabric at the same time a soft feel.

**The Rest.** There are two kinds of rests met with, *viz.*: the steel rest and the rubber rest. The first mentioned rest is the one shown in connection with our illustrations and the same is either met with as a common or a plain steel rest or in connection with a list saving attachment. The latter is the rest more frequently met with, the same referring to a rest in which the thick or curling selvage is guided away

### PRACTICAL POINTS ON THE SHEAR AND THE SHEARING OF WOOLEN AND WORSTED GOODS.

Introduction—The Object of Shearing—Preparing Goods for the Shear—The Construction of a Shear—The Single Shear (Illustrated)—The Double Shear (Illustrated)—A Few Practical Points—The Rests—The Plain Steel Rest (Illustrated)—The List Saving Steel Rest (Illustrated)—The Rubber Rest (Illustrated)—The Ledger Blade—The Revolver—The Operation—The Material Used and the Condition of the Cloth—Slack Selvages—Oiling—Grinding and Setting of the Shearing Mechanism (Illustrated)—A Shear Grinding Machine (Illustrated).

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Experience will soon teach a wide-awake shear-tender how to do this raising and lowering of the revolver in order to have a seam pass the cutting device of the machine in less time than he would at first have considered possible. A lever arrangement is provided with the modern shear and which is a great improvement over what is met with on the old style shears. It consists of levers and toggle joint connections, arranged in such a manner that by simply pulling the lever on either side, towards the operator, the whole cutting arrangement is raised. No special exertion is required, in fact, the levers and toggle joints make the work of lifting the blades a very easy job for the shear-tender.

The tension to put on the cloth during the shearing process is not uniform for all kinds of fabrics,

from the path of the blades on the shear cylinder, by means of a self-operating mechanism which automatically extends or lessens the effective edge of the cloth rest.

The plain steel rest is shown in its outline section in Fig. 3 and in which *A* indicates the rest, *B* the ledger blade and *C* the revolver or shear cylinder (having 14 edge fly blades). The run of the cloth (as shown by means of dotted line in connection with Figs. 1 and 2) has been omitted in this illustration

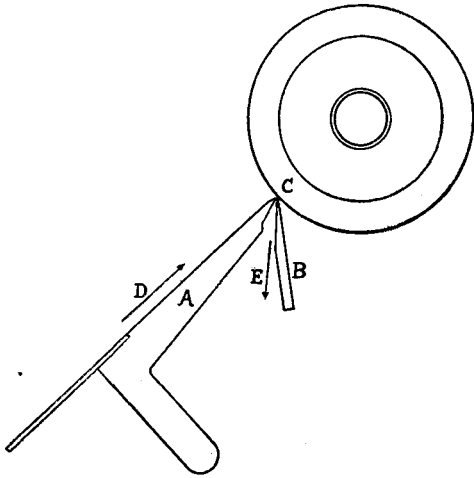


FIG. 3.

for the sake of clearness; the cloth passing in the direction of arrow *D* over the cloth rest, coming under the action of shearing mechanism, where cloth rest,

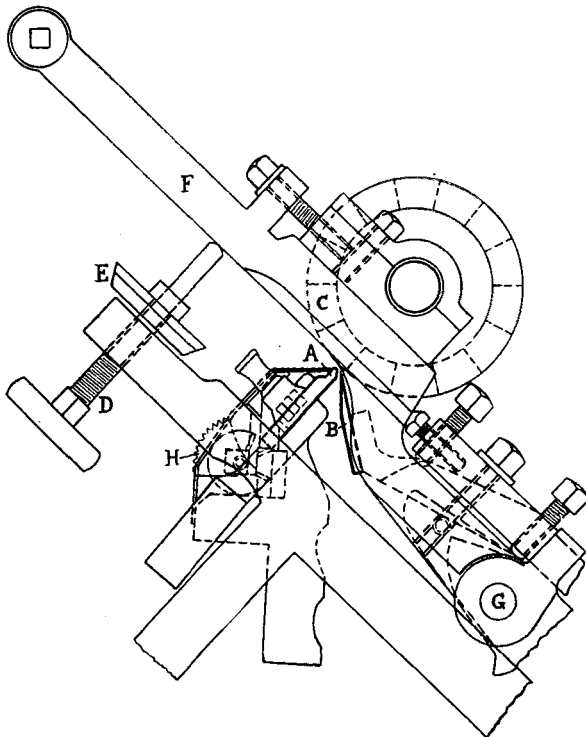


FIG. 4.

ledger blade and fly blades nearly meet, and leaves the shearing mechanism, passing between cloth rest and ledger blade, in the direction of arrow *E*.

The list saving steel rest. An illustration in sec-

tion of this rest, showing also position of ledger blade and shear cylinder to the rest, is given in Fig. 4, and in which *A* indicates the cloth rest proper, *B* the ledger blade, and *C* the shear cylinder (having 14 edge fly blades). *D* indicates the dial screw for setting the shear cylinder nearer or farther away from the cloth rest according to amount of shearing to be done, *E* is the dial, *F* indicates the frame for carrying the shear cylinder or revolver, being pivoted at *G*. The feeler of the list saving attachment is shown at *H*. The passage of the cloth to be sheared (and as shown by dotted lines in Figs. 1 and 2) has also not been shown in this case, in order to better show up the various parts composing this shearing device.

With reference to the setting of this rest, the builders give the following details: Lay the rest centrally right and left in its place on the top end frames. Test its edge, the slides being pulled out of their end positions, with the straight edge and dry tissue paper, both on top of the edge and on the back of the edge toward the blades. It should pinch the paper equally at every point. If there are a few high places and these are slight, they can be worked off with a fine flat file, drawing it lengthwise. If the inaccuracies are considerable, the rest must be trued on a planer. Screw in the binder screw as situated, one screw in each attachment, in about the centre of the latter, loosely. Turn out the two elevating screws as situated, one screw in each attachment, at the bottom of the latter, until the rest is high enough to allow the outer ends of the feeler catch holders, as screwed to the slides, to escape the horns of the top end frames, said slides being in their outermost positions. Turn in the two set screws as situated in each arrangement, one above and one below the binder screw previously mentioned, until the rest is level, right and left on its edge, and also level on its top flat, front to back. When once the rest is set, leave it alone, and in turn adjust the blades of the revolver and under no consideration the rest to the blades. Ordinarily, and for close shearing, the edge of the ledger blade should be brought up exactly level or "at sight" with the top of the rest edge, making this adjustment with the elevating screws of the blade frame pivot boxes on the top of the back end frames. Lower the knife close to the rest edge so it will barely pinch thick letter paper, by turning back the dial screws so the blade frame arms rest evenly on their points. Test this by placing your finger at the junction of the blade frame arm and dial screw point, and hitting the blade frame arm with a light upward blow with the fist of the other hand. The feel of the give, will enable one to adjust it evenly after a little practice. Being assured that the ledger knife is dead true, by testing with the straight edge and dry tissue paper, both on the face and scarf bevel, see if thick letter paper pinches evenly the whole length between the rest edge and the ledger knife. If the paper chances to draw a trifle loosely in the middle, due to the sag of the rest, this can be corrected by turning in the screw driver set screws, one with each attachment—situated just above each binder screw—a little. On heavy-weight face

finish goods, it is often the practice to set the ledger knife edge a little below the rest edge. If the knife edge is set above the rest edge there is danger of pinching the goods, making them fluff up in front of the blades and cut the face. Never run the rest, if the slides work hard, since in such a case the list motion needs either cleaning and oiling or refitting. Don't try and run the rest with worn feeler catches or ratchets, but renew these parts. Keep the list motion free from flocks, dirt, and well oiled. The sheet steel guard in front of the rest and over the flock brush should be straight at its front lower edge and the flock brush should barely touch it.

*(To be continued.)*

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