The present invention relates to a method of preparing semifinished materials, for example, wire or rod stock, for a subsequent drawing operation.

For drawing wire or rod stock, it is first necessary either to sharpen the front end of each piece of material for a sufficient length so as to pass it through the drawing tool until it can be gripped by a drawing-out device or to ram it into the drawing tool by force. Such an insertion by ramming is, however, frequently not possible because of the danger that the material might then buckle or bend. For many years it has therefore been conventional to sharpen the front end of each piece of material by a cutting or grinding operation. For doing this in a sharpening machine, for example, by means of sharpening cutters, the piece of material must first be fed in one direction into the machine and, after being sharpened, it must be withdrawn from the machine and thus moved in the opposite direction. Thereafter it must be shifted vertically to its feeding direction toward one side and then the direction of movement must be changed again for feeding it into the drawing tool. Prior to the drawing operation it is in many cases additionally necessary, either before or after the sharpening operation, to remove a layer of scale from the surface of the material by passing it through an additional descaling machine. It is quite obvious that, entirely apart from the actual machining operation, the various movements of the material consume considerable time and energy.

It is an object of the present invention to provide a method of preparing semifinished materials, for example, wire or rod stock, for a subsequent drawing operation much more efficiently and economically than it has previously been possible. These savings are very considerable especially if the individual pieces of material which are to be drawn are of a short length since the preliminary operations may now be carried out so quickly that the drawing operation will no longer be held up by them. Consequently, the output in drawing stock within a given period of time may be increased considerably.

For attaining this object, the invention provides that, after the piece of material has been moved into the sharpening machine and its front end has been moved past the sharpening tool or tools for the distance necessary to reduce the diameter of this end for the required length, the material is not again retracted from this machine, but the sharpening tool or tools are quickly opened or retracted from the material sufficiently to permit the material to be moved further in the same direction toward the drawing machine without engaging with these tools.

In the event that prior to the drawing operation it is necessary or desirable also to descale the surface of the piece of material, it is another object of the invention to eliminate the need for an additional descaling machine and for passing the material therethrough by an additional movement, and to carry out this descaling operation by the same forward movement in the same machine and by the same tool or tools which are used for the sharpening operation by automatically retracting the sharpening tool or tools immediately after the sharpening operation is completed for the distance which is required for descaling the surface of the material.

Since both operations of sharpening the front end of the material and of descaling the surface thereof by removing a very thin top layer thereof should be carried out very quickly and in proper proportion to the length of time required for the drawing operation, and since both operations should also be carried out without chattering, it has been found according to the invention that the most suitable machine for this purpose consists of a sharpening machine in which the sharpening blades or cutters are first employed for the so-called sharpening operation to reduce the diameter of the front end of the piece of material and are then automatically retracted without any interruption in the longitudinal movement of the material for the exact distance as required for continuing the sharpening operation so as to descale the surface of the material by cutting off a thin sliver of the latter.

According to the invention it is also possible to carry out both operations at least in part simultaneously by providing two sets of sharpening blades behind each other, as seen in the feeding direction of the material, so that while one set carries out the sharpening operation on the front end of the piece of material, the other set carries out the descaling operation on the first part of the subsequent surface. When the material has been moved for the required distance to reduce the diameter of the front end thereof for the required length, the first set of sharpening blades is quickly and automatically retracted without interruption of the feeding movement of the material, while the second set continues to cut so as to descale the remainder of the piece of material until it has been drawn entirely past this set.

The present invention therefore permits both operations of sharpening and descaling a piece of material, which previously required two separate machines, to be carried out by a single machine, and by moving the material through this machine in only one direction, it also saves the additional retracting movement and subsequent lateral movement of the material which were previously required after the sharpening operation was completed as well as the feeding movement to move the material into the descaling machine as well as at least a part of the feeding movement toward the drawing machine.

Since the method according to the invention may be carried out by various machines of conventional types and essentially consists in employing such a conventional machine for carrying out certain operations more quickly, economically, and efficiently and in a manner so as to eliminate the need for another machine of a similar type, and since this method has been described in such detail as to enable any person familiar with the art to carry it out by means of one of the known machines or to convert such a machine by conventional means so as to carry out this method automatically, a drawing of such a conventional machine has been omitted not only because it is believed to be superfluous but also because it might mislead a person familiar with the art to believe that the invention might be restricted to the particular type of machine as illustrated.

Having thus described my invention in detail, what I claim is:

1. A method of preparing unfinished materials such as wire, rod stock or the like, for subsequent drawing operation, comprising the steps of imparting a feeding movement of said material in one direction into a sharpening machine having sharpening tool means, utilizing said sharpening tool means for firstly performing a sharpening operation on the forward end portion of said material, continuing said feeding movement, and secondly utilizing said sharpening tool means for performing a sharpening operation upon a further portion of said material upon continuation of said feeding movement.
2. A method as defined in claim 1, in which, after the front end portion of said material has been sharpened, the sharpening tool means are retracted for a distance such that by a continuance of said feeding movement of the material the same sharpening tool means will descale the surface of the remainder of the material.

3. A method as defined in claim 1, in which said sharpening operation is carried out by a revolving scalping tool.

4. A method of preparing unfinished materials such as wire, rod stock and the like, for subsequent drawing operation, comprising the steps of imparting a feeding movement of said material into a sharpening machine having a plurality of sharpening tool means disposed one behind the other in the direction of said feeding movement, one of said plurality of tool means performing a sharpening operation on the forward end portion of said material, the other of said plurality simultaneously performing a descaling operation on a further portion of said material, said one of said plurality of tool means being retracted from said material upon the completion of said sharpening operation, while said other of said plurality continues said descaling operation.

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JOHN F. CAMPBELL, Primary Examiner.
THOMAS H. EAGER, Examiner.