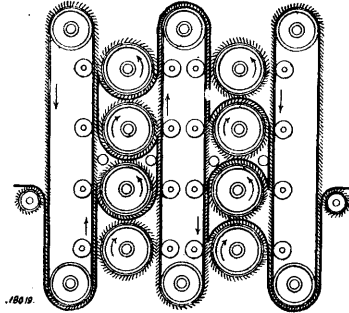


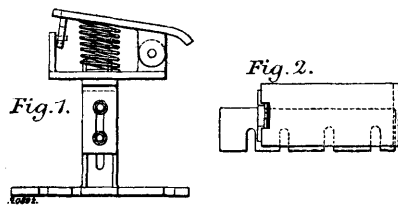
## TEXTILE MACHINERY.

**18,019. J. Leach and F. Hepworth, Huddersfield. Carding Machinery.** [1 Fig.] September 6, 1899.—A compact form of wool carding machine, according to this invention, comprises two endless bands, having carding surfaces, situated vertically side by side with their carding faces opposite each other. The space between the bands is occupied by carding rollers situated one above the other and with their opposite surfaces working against the card on the surfaces of the endless bands. The bands are run at a slow speed; the rollers at a greater speed and preferably at increasing speeds from the lowest roller to the highest roller, or *vice versa*. The card is set in such a direction that the first band after receiving a charge of fibre carries it past the first roller which gives it its first carding operation, and the second roller rotating in the opposite direction removes the wool



and transfers it to the card of the second band on the opposite side, where it is also carded between the second band and the second roller. The fibre now twice carded is carried up on the surface of the second band to the third roller, which removes it from the band and returns it to the first band, where it is again carded and passed on as before described. This operation continues according to the number of rollers contained between the two bands and the carded wool is finally carried up over the top of the second band, from whence it may either be conveyed to a second apparatus similar to the one before described or to a taking off roller as desired. (Accepted August 29, 1900.)

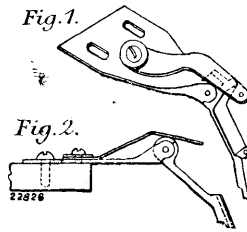
**20,892. H. Wrigley, Rochdale. Spinning Mules.** [3 Figs.] October 19, 1899.—This invention has reference to self-acting spinning mules, and has for its object to minimise or prevent the springing out of the mule carriage at the finish of the inward and outward runs. A bracket is secured to the floor of the room in which the mule is situated, directly opposite the mule carriage, and to this bracket is bolted a box bracket containing a spring having a brake plate attached to the box bracket by means



of a stud and snug placed in a slot. There are, by preference, four of these devices for each mule. It is stated that by the use of these devices obstruction to the starting of the carriage in either an inward or outward direction is prevented, and that, in fact, they tend to help the starting of the carriage, and to relieve the driving bands from undue strain, wear, and tear, and to prevent undue stretching and breaking of the yarn. Auxiliary and accessory devices are provided. (Accepted August 29, 1900.)

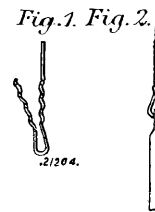
**22,826. W. Spiers and T. S. Grieve, Leicester. Knitting Frames.** [4 Figs.] November 15, 1899.—This invention has reference to knitting frames of the straight bar type and embodies a construction of thread carrier adapted to automatically adjust or move itself free of or above any obstacles or irregularities of surface in the track over which it passes, so that frictional or sudden contact between the nose of the thread carrier and the adjacent part of the knitting frame is avoided and the continued free working of the carrier is insured. The carrier is formed in two parts jointed or hinged together and controlled by a spring, so that in the event of the nose of the thread carrier (during its to-and-fro motion across the frame to lay the thread) coming into contact with any irregularity of the surface, the resistance offered by such contact would be sufficient to move the carrier on its hinge or pivot above such irregularity so as to be clear of it in future movements and the spring would prevent a too free movement of the carrier so that

it would not be held in the raised position, but would be prevented moving too unnecessarily high for working purposes, or



dropping again on to the low level at which the irregular surface is situated. (Accepted August 29, 1900.)

**21,204. J. A. Granwood, Bradford, Yorks. Jacquard Loom Mails.** [2 Figs.] October 21, 1899.—This invention relates to improvements in or appertaining to wire mails, and particularly tinned or soldered wire mails for Jacquard looms, and its object is to facilitate the attachment of the weights or lingoes directly to the mails. For this purpose the wire mail has the lower part (below the central eye for the warp) sufficiently long



to permit it to be directly attached to the weight, and the bottom eye for the attachment of the weight is left open. Immediately above the bend for the bottom eye is formed a short spiral twist and a similar twist is formed on the "tag" or turned-up end of the mail, and the two twists are of such relative formation that they are readily intertwined to close the eye after the weight has been attached. (Accepted August 29, 1900.)