

THE WIRE MOTION.

The wire motion is a very important mechanism of the Brussels carpet loom, it being situated at one end of the loom, and has for its object to actuate several long wires (see Fig. 4) upon which the loops of the fabric are formed. These wires vary from 31 to 31½ inches in length. Wires for weaving Wilton carpets, and which will be dealt with later on, are slightly shorter on account of the knife end varying from 30½ to 31 inches in length.

The number of wires used in connection with the motion at weaving varies, as a rule, from 26 to 28, covering about three inches of fabric being employed. Suppose 26 wires are employed and the loom is working, and the 26 wires have been operated upon, that is to say, 26 loops or picks of the pattern have been formed. The twenty-sixth wire being operated upon, the loops of the fabric being formed upon the wire, then at the same moment this has been done, the first interwoven wire in the set is automatically drawn out of the fabric, and, when quite clear, passed forward and inserted in position, that is, taking the twenty-seventh position of a wire in the fabric, and upon this wire the next pick of the pattern is formed. This feature is repeated over and over again, every one of the twenty-six wires in turn being inserted over and over again.

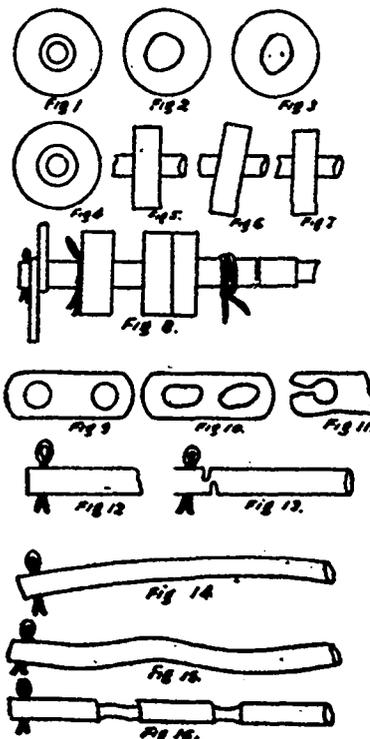
(To be continued.)

LOOM FIXING POINTS.

Some Mechanical Reasons for Imperfect Work in Weaving.—Poor weaving has been the cause of the failure of many textile enterprises, as is well known to interested persons. We will undertake to illustrate some of the chief causes of defective work in the line of mispicks, double-picks, shed-snarls, etc., which are often seen in the finished goods. In Fig. 1 we present the ball of the warp chain in its perfect order. The ball sets evenly on its bar or shaft and no trouble results. After the loom has been in service a few years, the chances are that the bearing of the ball on the shaft will become worn, or the bearing of the ball itself may wear down, as shown in Fig. 2, so that the action of the ball becomes uneven. The result is that the finger of the harness jack is not lifted properly and we have mispicks. Again, if the bar of the ball wears oblong, as frequently happens, as shown in Fig. 3, we get another type of irregular motion which produced mispicks. In Fig. 4 is shown the way some machinists bore out the bearing of a worn ball and make it suitable for further service by inserting a ring. But it is better to put in a new ball, and then we will get the even, firm stand as shown in Fig. 5. Otherwise, if we attempt to run the ball in a wabby shape, it may assume the attitude shown in Fig. 6, by which the fingers of the jacks may slip off. In Fig. 7 is the position ordinarily taken by a ball in which the bearing is worn so large that the ball is permitted to drop below its proper level. In Fig. 8 we show a very neglectful way in which fixers sometimes tie up the harness and filling chains of looms, to the detriment of effective work. The chain blanks and balls have become so worn at the edges that they do not fill out the space as originally intended, with the result that they are loose on the bar and permit loss of motion and wobble. The fixer finds it to be an easy way out of the trouble to tie in the cords or threads between the blanks, thus filling out the void. But it is a shiftless way and ought not to be done. The proper way is to substitute new balls and blanks for the worn ones.

As to the Links.—Links of chain bars are also neglected more or less in loom work to the disadvantage of perfect weaving. All inspectors have had trouble with harness skips

and the like due to the use of worn links on chains. In Fig. 9 is a chain in good order. In Fig. 10 is a chain which has seen so much service that the holes are worn oblong, with the consequence that the bars are elongated and the chain made too extended for sure work. The proper bar may not be pulled over in time for the jacks and we get mispicks in numberless order. In Fig. 11 are the final or worn links. The best way is to make careful examination of the links whenever it is being found that mispicks are being caused. All extended portions of chain ought to be looked into, and new links put on to take the place of the worn ones. Put on the new links in pairs, for if you put a new one on one side only, that side will be drawn up closer, providing the link of the opposite side is worn.



Illustrating Mechanical Points for Loom Fixers.

Bars.—The chain bars also require notice. In Fig. 12 is a bar in good order, the section end being shown only. In Fig. 13 is the end of the bar which has had a few years' service. The links have cut grooves in the ends and the bar is about ready for the waste heap. If used, the chances of causing mispicks are very great. I would remove bars in this shape and restore with new ones. Sprung bars are the horror of the fixer, one of which is represented in Fig. 14. It is hard to detect a bar like this without close watching. It will take a mispick almost every run, and yet it may require some time to find it. Then substitute it with a new one, unless you can straighten it. I have seen bars in as bad order, as shown in Fig. 15, due to the "wrapping" or "doubling up" of chains. Such bars cannot well be restored. In Fig. 16 is the familiar sight to old fixers of bars worn by ball, in which definite grooves appear and permit the ball to sink too low to operate in the head motion. The only remedy is a new bar.

When the Plate is Cut.—In Fig. 17, reference is made to the condition in which the finger plate head is often found in harness motions. The plate is of the best of steel and calculated to last for years. But careless fixers sometimes