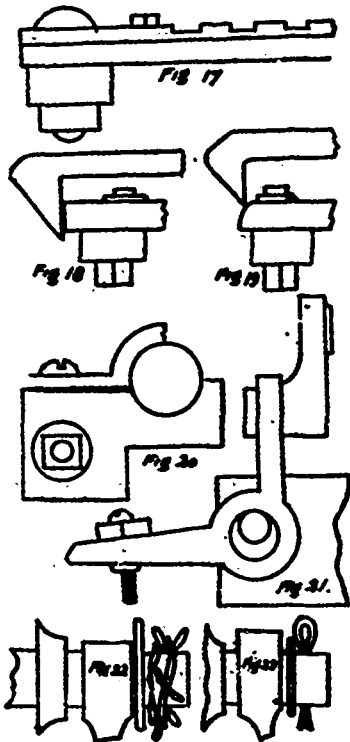


get the head motion of the loom set a little too early or a little too late with the result that the fingers of the jacks are raised in too soon on the plate and there occurs scraping due to frictional contact for a brief period in every turn of the loom. The period is enough to gradually wear off either the fingers or the plate and the plate seems to go first. I have seen plates cut into and seriously grooved in a few months when the head is not rightly set. The only way out of the trouble is first to restore the grooved plate with a new one, then set the head over again so that the jacks will not close down on the plate until the plate is clear and in proper position.

But there is as much skill needed in setting the fingers as in regulating the plate. The plate may be worn to the condition referred by the jack fingers slipping off after once gripping, due to improper adjustment of the chain cylinder. If the cylinder is right, so as to bring the fingers at proper level to get a good and full grip on the plate as in Fig. 18, no trouble is liable to occur. If, however, the chain cylinder is so set that the finger is elevated too high, as in Fig. 19, the chances are that the finger will slip over the edge of the plate frequently, resulting in a very short while in wearing off the edge to a rounded condition, as shown.



Showing Defective Condition of Parts of Head Motion of Looms.

**Look to Your Boxes.**—The head motions of all looms of modern make and in fact of olden types are provided with effective bearings and journals when they are shipped from the builders. But some one may rap a cap with a hammer, or screw down the set screws so far as to fracture a cap, as in Fig. 20, leaving the bearing exposed to lint, dust, etc. The foreign matter gets into the lubricating oil, gums the parts and trouble occurs. I have seen choked parts due to gummed oils with flyings causing endless bother. Such caps as here shown should be removed and new ones put on.

**Lost Motion.**—The head motion of the pattern or fancy weaving looms will not permit of very great loss of motion. You can have loss of motion to considerable degree in the plain cam loom or the four harness twill loom, but when you

get to using 6, 8, 10 or more harness with pick and pick or with any intricate work at all, you must look out for loss of power and motion in all parts. In Fig. 21 we present a common place in which lost motion occurs, due to the wearing of the bearing on which the lever operates. The fact that this bearing is worn compels the lever to be lifted and depressed considerable space before it begins action on the parts operated by it. During this interval, the other mechanical parts of the loom are moving forward, and the loss of motion in the worn part is seriously felt. If it is in excessive degree, the loom will make numberless mispicks, which can be rectified only by restoring the worn part with new. I would look to the levers and the studs upon which they operate whenever mispicks occur.

**Don't Be Too Free With Strings and Wires.**—The builders of modern power looms put about the best descriptions of power weaving machinery on the market that it is possible for one to conceive. The looms of modern build are marvels of perfection in every particular.

Old fixers need not be told this, for they who struggle with cams and tappets for years, are now able to produce perfect patterns by changing filling and harness chains. There is no need of spending all day examining tappets as formerly. Still we can pass through the weave room of a mill and find that the fixers have not forgotten how to use strings and wires too freely, even on high-class looms. A pin breaks out of the end of a stud, for example, and sometimes, instead of getting a nice, new pin to replace the old one, the fixer grabs a bit of wire and tangles it through the pin bore and wraps it about the stud end, as shown in Fig. 22. The wire holds the washer on and the washer sustains the lever, but it is a poor piece of work. In Fig. 23 is the proper way, showing the pin. Strings are sometimes used to tie up things and this ought not to be. Take time to do the work right and it will pay in the end.—Southern and Western Textile Excelsior.

### SOMETHING ABOUT WOOLS.

To the average man, a sheep is simply a sheep. He knows the meat is good to eat, and he probably pictures it in his mind like Mary's lamb—"whose fleece was as white as snow." He has learned that sheep are sheared, that it is a peaceful animal, and that in a body they follow a leader blindly, beyond this, he has probably very few ideas on the subject.

Wherever the climate is not too cold, or too hot, if protected from savage beasts, sheep will be found. In Asia, the fat-tail variety prevails, and has remained practically without change, in breed, for generations. The wool has a long, coarse fibre, with a short, finer undergrowth, in the colder sections. It is a striking fact that where the climate is severe, nature gradually supplies a fine silky undergrowth for the better protection of the sheep. This is shown particularly in Iceland wool.

The Chinaman, as a rule, combs the wool off the sheep with his fingers, when the warmer season causes their sheep to shed its wool, and he twists it into short rope, which is then twisted into a ball. Bret Harte has said that "for deeds that are dark and for tricks that are vain, the 'Heathen Chinese' is peculiar," and it is not surprising that dirt, gravel and inferior wool are frequently found in these little balls, when they are opened by the manufacturers here. In Western China, India and other sections the wool is twisted into long ropes about as thick as the wrist and in this form is transported to the seaport markets, where in some cases it is