peg to get between the fingers. This will, of course, make a mispick. The remedy is to take out and replace with one of right size.

Barrel Not Turned Over Far Enough by Pawl.—If the pawl is not set on the rocking arm in its right position to turn chain barrel over far enough, the pegs in chain will not be in their right position for the next pick, the result is a mispick. Remedy, add a little more leverage to pawl. By watching the chain barrel when being turned over it will readily be seen if this is the cause of the mispick. Often the chain barrel is not turned over far enough, but the check forces it to its right position, but if the check should fail to do this a mispick results.

Chain Stuck.—If the chain should get stuck from any cause, the chain barrel will not turn, and mispicks will result. Sometimes from this cloth will be woven, but it will be readily seen that the cloth will bear no resemblance to the original cloth, and the cloth at that part will be spoiled. Of course the same will have to be picked out. One of the principal causes of this is a chain bar that fits tight in the chain barrel and instead of dropping from the barrel is taken around with it and the chain gets stuck. To prevent any breakages, on some of the dobbies there is a chain in the pawl which will expand when this happens.

When called to a loom for a mispick it is advisable to ascertain, if possible, which of the harness shafts it is that is not working correctly. This can often be done. For example, suppose a warp sateen strip is being made on a plain ground and a mispick was taking place occasionally. It will readily be seen which of the harness shafts are weaving sateen. The question will then be, which of these harness shafts is making the mispick. By examining the strip the thread that is not working right can be picked out and the harness shaft will then be found. If the mispick happens only occasionally, it may be difficult to find out right immediately what is the cause of it. If the fixer has any reason to suppose that it is in hook, it is advisable to take a piece of chalk and mark the end of the hook, start up the loom and watch the hook work. The reason for putting chalk on the end of hook is because if this is not done it is a difficult matter to watch the hook, the chalk simplifies this considerably.

Another common cause of mispicks or broken picks is poor filling. Often the filling will break at the beginning of a pick and catch again, this shows a broken pick in the cloth. The cloth will be all right at both sides, but in the middle the broken pick will be clearly seen. This is often the case in very fine work where the filling is tender, and causes a great amount of trouble.—"A. M. C.", in Southern and Western Textile Excelsior.

SPINNING AND WEAVING ASBESTOS.

Asbestos is one of the most remarkable substances found in nature, and is classified by geologists as a peculiar species of the hornblende family of minerals. Its composition is chiefly silica, magnesia, alumina, and ferrous oxide, and it is consequently unconsumable; hence its name. The fibres formed by the chemical combination above given are perfectly smooth, and in this respect are different from all other known fibres. Paradoxically, it is the link which completes the chain between the vegetable and mineral kingdom, and is, in fact, a mineralogical vegetable possessing the curious properties found in both, for it is at once fibrous and crystalline, elastic and brittle, heavy as a rock in its crude state, yet as light as thistledown when treated mechanically. Added to this, its fibres, soft, white and delicate, have, by their inherent quality of indestructibility, withstood the action of the elements since the world began; and through all the countless ages, during which the hardest rocks surrounding it have been reduced, this mineralogical mystery has remained intact, having successfully resisted the assaults of fire, acids, and time. Asbestos is found widely distributed throughout the world, although the principal supply of asbestos, suitable for manufacture, is found in Canada, about 75 miles from Quebec.

The Italian mineral has a fine, silk-like fibre, but is lacking in the essential characteristic of strength. The product obtained from South Carolina has a soft, woody, yellowish fibre, which quickly powders under pressure. The South African asbestos, as one might naturally infer, is of a dark slate or black color, with exceptionally long, strong fibres, but owing to its stiff and horny texture it cannot be manufactured into a fine fabric; hence the superiority of the Canadian asbestos. The mining of asbestos differs radically from the mining of other minerals, since no shafts are sunk, but excavations are made in the open, somewhat after the manner of a stone quarry. Canadian asbestos, however, is found in narrow veins or seams about an inch and a quarter in thickness, and embedded in rock, which is easily severed from it. The strata of asbestos, which may be vertical or horizontal, are found in practically detached deposits, are as elusive as those of zinc-bearing ore, and can only be determined by exploring for them. The rock to which the mineral is attached shows on fresh fracture a serpentine mineral of a green shade, containing finely-divided particles of chromic and magnetic iron. The asbestos on cleavage presents a brilliant, dark-green surface by reflected light, but the fibres after they are detached are perfectly white. The act of separating the mineral from its matrix of rock is termed "hand cobbing," and after this process the mineral is shipped to the various factories where it is to be worked up.

The process of manufacture begins by placing the asbestos mineral in a chaser mill, a machine comprising a rotating edge wheel revolving at the end of a radial arm in a trough, which crushes the mineral, dividing the fibres without destroying them. The result is a snowy mass of mineral wool ready for winnowing, a treatment for removing the minute particles of rock still clinging to the fibres very much like the winnowing of grain. This is done by means of a blast of air, which separates and blows away the foreign matter, leaving the fibres in a refined state and in proper condition for the third stage of manufacture. This is termed air fibre raising, and, as the name implies, the fibres are raised by a current of air produced by a blower of large dimensions through a vertical pipe inclined at a small angle. The object of this procedure will be obvious when it is stated that the air blows across the fibres causing those of coarse texture to be deposited in a compartment near the bottom of the pipe. The medium fibres will be projected a little higher, and these will fall into a second department. The finer fibres will be blown to a higher point, and there collected, while the dust will be carried to the top and deposited. The fibres are in this way sorted into different lots according to their texture, and are then ready to be made into the articles for which they are best adapted. The stuff now goes to the carding room, just as though it were genuine wool sheared from a sheep, or pure cotton fresh from the plant on which it grows, instead of a mineral substance that in its original state was mined like a lump of anthracite coal.