sary, one to carry the pile warp for the formation of the loop, and the other to carry the ground warp for forming the body of the fabric. Only one system of filling is used.

In the process of weaving these fabrics, the terry series of the warp is weighted much looser than the body series, or its warp beam is arranged to let off the proper length of pile warp required at every third or fourth (the tight) pick, so as in either case to allow the loops to be formed on the surface of the fabric, by the lay being driven fully up to the fell of the cloth every third or fourth pick; the two or three previously inserted picks are driven only partly home by the reed. The three or four picks so interwoven, slide on the ground warp, which is let off with a more or less tight tension during the entire process of weaving.

The interlacing of the pile threads correspond to the last pick of the preceding, and the first pick of the successively following ground pick. When high the loop will be driven on the face, when low the loop will be driven on the back of the fabric.

Provided you want to change the position of the loops from face to back, at least four picks must be used before the change in the weave occurs.

This system of pile weaving, in connection with narrow ware fabrics is used for the trimming of plush slippers, velvet and loop pile belts, etc.

Fig. 102 shows one of these loop pile weaves, the arrangement of the filling being three picks for each loop. The arrangement of warp is two ends ground warp to alternate with one end pile warp. Warp-threads 1, 2, 4 and 5, see *full* type, are the ground warp-threads; warp-threads 3 and 6, see *cross* type, are the pile warp-threads.

Pile thread 3 forms loops on the face of the fabric, on account of interlacing 2 *up* 1 *down*, whereas pile thread 6 forms loops on the back of the fabric, on account of interlacing 1 *up* 2 *down* in the repeat.

Fig. 103 shows us a loop pile weave, arranged with four picks for each loop. The arrangement of the warp is one end ground (see *full* type), to alternate with one end pile (see *cross* type).

Every pile warp-thread, when driving up the picks, rests once on the face, the next time on the back of the structure.

Fig. 104 shows us the pile warp-threads (see *cross* type) arranged to exchange face and back after a checkerboard motive, the loops forming themselves according to this motive either on the face or on back of the fabric. Three picks are used for each group, with four picks at the change of the effect.

Fig. 105 shows us loop piles arranged to form stripe effects, both sides being reversible. The pile threads are shown by *cross* type, and *dot* type.

The heavy horizontal lines drawn in all four weaves thus quoted, show where the lay beats up close to the fell of the cloth, in order to form the characteristic loop, either on the face or the back of the fabric, as previously explained.

Weighting Silk.

In weighting silk, according to a new process just patented, use is made of a mixture of titanium salts with salts of tin, or zirconium, or of the rare earths, or of any two or of all three of these. Rare-earth metals mentioned are cerium, didymium and lanthanum.

IMPROVEMENTS IN FABRIC STRUCTURES.

Chenille Fabrics.

In weaving chenille carpets, rugs, mats, etc., in connection with the new fabric structure, as shown in Fig. 1, two picks *i, h* of plain filling are inserted after each pick *j* of round chenille filling.

In the body of the fabric, the two picks *i, h* are inserted in the same shed, but the shed of the selvedge is changed after each pick.

The filler warps *f* are woven with a greater tension than the binder warps *e*, thus causing most of the chenille filling *j* to appear on the face of the fabric.

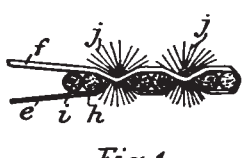

Fig. 1

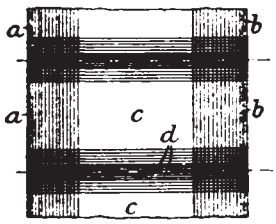

Fig. 2

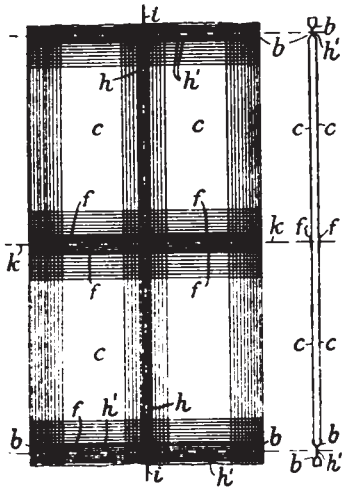

Fig. 3 Fig. 4

Weaving Sacks.

By this construction, sacks or bags having special strengthened mouths and bottoms are produced by weaving above one another two fabrics connected at certain parts.

In one form, the fabrics *c*, (see Fig. 2) are woven together at one side *b* to form the bottoms of the sacks, etc., and have selvedges at the other side *a* forming the mouths. The fabrics are also woven together at parts *d*, which are subsequently cut through and form the sides of the sacks. The latter are woven with more warp-threads per inch at the bottoms, in the selvedges, and in the parts adjacent thereto than are present in other parts.

In another form, the fabrics *c*, (see Figs. 3 and 4) are woven together at each side, at the middle *h*, and at parts *h'* situated at distances apart equal to the length of two sacks. The sacks are formed by cutting the fabrics along the lines i—i and k—k, and they are woven with more picks per inch at the bottoms *b* and at and near the mouths *f* than are present in other parts. To ensure extra strength, the fabrics where they are woven together and cut through may be bound by stitching.

Velvet in Fashion.

It is many years since velvet and all allied fabrics, such as ponyskin, broadtail, and miroir plushes were as much in demand as they are this season. For hard-wear tailored suits nothing is better than the new corduroy velvets, or those woven to produce a striped effect. The best colors for these are dark pansy, rifle-green, raven-blue, mole, beige, and black.