

before him : when they have reached a good result he will begin to take some notice of them."

In contrast to this he describes the American people as giving their attention to inventions tending to lighten the load of household duties, and for the quicker performance of mechanical and other operations; and says "It is in America therefore that we should naturally expect such great and useful inventions as sewing machines, clothes wringers, cooking stoves, hot-air furnaces, sleeping cars, luxurious steamboats, and the host of similar appliances which are so frequently and well illustrated in the pages of the *Scientific American*; nor is it but a step further to such as steam fire engines, breech-loading rifles and the like."

### New Mode of Glass Engraving.

We are indebted to Judge Paschal, of this city (late of Texas), for specimens of window glass engraved by a process patented by C. C. Stremme, of Austin. The process consists in forming the design upon ground glass with glue or other strongly adhesive and contractile paste, which in contracting detaches laminæ of irregular shape and thickness from the surface of the glass, and leaves the design wrought in a style of peculiar beauty, resembling hard frostwork. The design in glue may be formed by means of a stencil plate, and the work thus executed as rapidly as the brands on packing boxes, etc. Or, if the design be too complex to be stencilled in a satisfactory manner, the drawing or print to be copied may be laid under the glass and traced in *fac simile* with a lead pencil, after which the lights within and around the design may be covered with a protecting varnish and the glue then applied to the shades, giving the picture in frostwork; or the shades may be protected and the lights etched, leaving the picture in ground glass, set in frostwork. It will be seen that the requisite apparatus and skill are within the reach of every one. Glassware may thus be very chastely marked with the name or cipher of the owner, as readily as linen. So says the *Scientific American*. Try it.

### The Manufacture of Russia Leather.

Russia leather, otherwise called "juft leather," is inimitable; at least, hitherto nothing has been produced in any way approaching it. The pains taken by Polish, Austrian, French, and English tanners to imitate the juft leather has met with no success; and though some persist in their endeavours, it is evident that, unless they employ the same means and bestow a like care, their efforts must remain fruitless. This leather is not made of goats skins, only, as some suppose, but also of the largest ox, cow, or rams' skins, though the best quality is made from goat skins, which is preferred to all others for the manufacture of red leather, on account of its softness and smoothness. It is well-known that this leather emits a very peculiar and agreeable odour; this it derives from an extraction of the birch tree with which the skins are impregnated. The manufacturing process is as follows:—The hides or skins are put into running water for one week. Each day they are taken out and thoroughly beaten with a wooden brake, and then returned to the water. At the expiration of

the time named, they are transferred into a lye, made either of lime or ashes, where they are left for about a month or more, till they are ready for depilation. This done, the next care is to rid them of their alkaline properties, which is effected by putting them into the "Raksha" for twenty-four hours. The Raksha is "white gentian," diluted in fresh water, one pail of which is sufficient for twenty-five skins. The Russian tanners lay great stress on the swelling of the skins; for this purpose they prefer a solution of oatmeal and water, in which they soak the skins for four or five days, and then transfer them to a first solution of tannin, which is extracted from the bark of the willow tree.

In the first solution the skin remains three days; they are then taken out and beaten with the brake, and placed in the second solution which is stronger than the first. After eight or ten days, they are taken out and dried, leaving the fleshy side turned upwards. After being dried, they are again beaten, then greased, dyed, and finished. The red color is produced by uniting alum with logwood, and the dark by mixing alum with green vitriol.

Graining follows the dyeing. This is done with a notched stick passing through the length and breadth of the skin till small furrows are gradually produced. Previous, however, to this operation, the skins are greased on the fleshy side, and after the graining they are again greased, either with birch oil or the oil of linseed, and then they are put on the wooden horse to be smoothed. The Russians have a singular way of dyeing this leather. They sew up the skins together like a sack or bag, closed on all sides, and having but a small aperture through which the dyeing fluid is introduced. The bags are put in motion for some time, so that the fluid shall reach all parts, and the balance is left to run out; the skins are then dried, and again dyed with a sponge. This is repeated two or three times, always leaving them to dry first, before the next colouring is given.

It requires no particular knowledge to distinguish the real Russia leather from the many imitations, a good nose being all that is required. The agreeable smell is the property of no imitation leather, though why the others have it not we are unable to state.

Austria and the German States greatly patronize this staple article. At the yearly fair of Leipsic many Russia leather merchants change their commodity and go away heavily laden with hard cash. The prices are regulated by the sorts or qualities, of which there are three: first, or best; second, or middle; third, or inferior sort. The last two sorts are not subdivided; but the first is subdivided into four or five different classes, according to the suppleness and smoothness of the leather. Italy consumes the most of the heavier, or lower grades of this leather. The sales are effected by weight; the Russian pūd is 40-lb. weight. The best skins generally averages seven skins to the pūd, the other four or five, which are packed in small packages of ten skins each, and then ten packages are made up into a ball, and tied up into mats. When brought into the market they are examined, to see whether they have been damaged through the voyage. This is known by the white spots that appear on the surface.—*Stationer and Fancy Trades Reporter*.