mentioned, can be put upon the plate without impairing the impression, various colors may be obtained during the fixation. It is impossible for me to give any definite rules concerning this last process, but I will state, in a general way, that my best results were obtained by giving the plate such a coating of copper as to change the tone of the picture, that is, give it a coppery color, and then heating it over a spirit lamp until it assumes the color desired. I have now an exposed picture treated in this way at the same time with the two above mentioned, and it remains unchanged. It is of a beautiful green color, and the impression has not suffered in the least by the oxidation. Should this process be perfected, so as to render it generally available, it will be greatly superior to the present inartistical mode of stippling dry colors upon the impression; for the color here is due to the surface of the picture itself. For pure landscapes, it has a pleasing effect, and by adopting some of the recent inventions for stopping out the deposit of copper, the green color may be had wherever desired. In some pictures a curious variety of colors is obtained, owing to the varying thickness of the deposit of copper, which is governed by the thickness of the deposit of mercury forming the picture. In one instance a clear and beautiful ruby color was produced, limited in a well defined manner to the drapery, while all other parts were green. To succeed well in the first process, viz., that for fixation and the production of the pearly appearance, the impression should be carried as far as possible without solarization, the solution of the hyposulphite of soda should be pure and free from the traces of sulphur;* the plate should be carefully washed with distilled water, both before and after it receives the deposit of copper, in fact, the whole experiment should be neatly performed, to prevent what the French significantly call *taches* upon the plate, when the copper comes to be oxidized.

Description of an Improved Loom for Weaving Horse-Hair. By
Mr. HENRY POTTS.

The object of Mr. Potts' improvement on the ordinary horse hair loom is to enable the weaver to dispense with the attendance of a server, whose business it is to place the ends of the horse hair in the hook, which draws them into the shed, where they are secured by the weaver striking up the batten with his left hand.

The parts of Mr. Potts' improved loom are so arranged, that the batten may be worked by the harness treadles, while an extra treadle is added for the purpose of passing the hook into the opening.

* The presence and deposit of sulphur, is a fault of most of the hyposulphite of soda of commerce, and it is the action of this sulphur upon the silver, that puzzles so many Daguerreotypers, by clouding, staining, and marking the plates in various ways. It may be obviated by repeatedly filtering the solution, or by keeping it in lightly corked bottles a long time before it is used.

In addition to the above I may state that exposure, of the coppered picture, to the vapor of hydrosulphuret of ammonia, produces sometimes a pleasing effect, but usually spoils the impression.

It is necessary that the weaver should have the use of both hands, for the purpose of taking up each shoot, doubling it, and laying it in the hook, the short end being held by the hand, while the hook carries, or guides, the other end to the opposite side of the opening, and finally leaves it lying straight across the threads of the warp.

In the accompanying view the framing which supports the several parts of the machine is purposely omitted.

The harness treadles, A and B, are attached by cords of equal length to a common lever C, and by the slack strings, as shown in the cut, to two other levers D and E, which, being tied to the lams, open the shed; while the lever C, draws back the batten by a cord passing over the pulley F, to the back of the batten; and, from the same point of fastening, another cord passes over the pulley G, in front of the batten to the helical spring H, which is attached to the floor, the object of which spring is to pull the batten forward; thus, when either of the treadles, A, or B, is down, the shed is open, and the batten held back; the treadle I, being then depressed, draws down the fourth cross lever J, which is connected by a cord with an equal lever K, pulling its back end down, while its front end rises with the string L, pulling round the small pulley M, which is fixed to the hinder part of the larger pulley N, to increase the motion, a cord

from which passes by the pulley to the near end of the slide P, and pulls it across the batten. The slide P, conveys the hook Q, at sufficient height to enter the shed, so as to pass through it, when the hair, being laid on to the hook, the treadle I, is released. The hook then flies back, its slide P, being drawn laterally by the spring R, and string S, which, after passing partly round the pulley T, is fixed to the under part of the slide. The slide moves freely in a trough V V, under the staple U, the object of which staple is to keep it in its place on the batten W W.

The hook Q Q, as shown in the cut, moves as much more than the treadle I, as the pulley N, is larger than the pulley M.

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Description of an Improved method of Casting Screws. By Mr. WILLIAM BOWSER.

The difficulty of casting square threaded screws by the ordinary method, is owing to the nature of the spiral curve of the thread, which, presenting its angle of inclination parallel with the axis in opposite directions on each side thereof, prevents the possibility of removing the pattern without displacing some of the sand. To remedy this defect, Mr. W. Bowser has contrived a plan by which the patterns of square threaded screws may be withdrawn from the sand, and still leave perfect impressions for casting.

Instead of using only two flasks in casting any particular pattern, Mr. Bowser forms the mould for the screw in three flasks, two of which contain the upper and lower halves of the mould for the body of the screw, and the third one that for the mould of the head.

A metal plate of size sufficient to cover the end of the two long flasks when placed together, is attached to them, and has in its centre a screw nut which holds the pattern screw in its right position in the sand, at the division of the two halves, to form the required mould.

When the pattern of the body of the screw is to be removed from the sand, a key is introduced into the end of the pattern which passes through the nut, by turning which key the pattern is screwed out of the mould; the nut, which is firmly secured to the plate, affording the necessary resistance.

The plate and nut are then removed, and the third flask, containing that portion of the mould in which the head of the screw is to be cast, is joined to the two long flasks, when the whole is ready for casting.

Figs. 1 and 2, exhibit sections of the flasks and screw in the different stages of the process.

A A, fig. 1, is a board prepared to receive half of the pattern screw, by having a hollow formed in it, so that the remaining half projects above the top of the board; B, C C, and D, are the three portions of the pattern.

The portion B, is furnished with a pin E E, which passes into a