

IMPROVED PONY PLANER.

In our issue of October 31, 1874, we published an engraving of a novel machine in which an emery wheel was used for the first time for surfacing files and sadirons, finishing anvils, nuts, gibs, keys, slide valves, straps, crossheads, and, in short, for accomplishing the majority of work usually surfaced on the planer, milling machine, and shaper. The mode of operation consisted in adjusting the object to be surfaced in the chuck to proper elevation, when it was carried under the wheel, and at the same time the latter was drawn across it. This motion continued until the table carried the work out of the action of the grinder. Then, by means of suitable mechanism, the operator slightly elevated the object and caused it to run back again under the wheel. Of this machine the invention herewith illustrated is a modification. The main difference is that the planer bed, A, is made to slide to and fro on its ways by the action of the crank, B, the work being thus moved to and fro in the line of the emery wheel's revolution, while the wheel also has a cross motion imparted to it by the crank, C. This new motion of the table corrects the inaccuracy resulting from gradual decrease in the wheel's diameter, there being a perceptible wear in the wheel, so that it grinds a long flat piece taper instead of plane, when the work slowly passes under it; while, by this crank throw, the whole length of work is brought in contact with the wheel at each throw. The chuck, D, rests on four springs, and rises and falls vertically in planed ways. E E are adjustable stops. When these stops have been adjusted, and the wheel no longer cuts, the work must be plane. The springs force the (chuck) work against the wheel, and yet act as safety appliances against over-friction and pressure. The whole table and bed has a vertical adjustment by the screw, F. Three belts are needed: one to the wheel mandrels, one to the suction fan, and one to the driver. The gears, G, being interchangeable, allow the proportion of speeds between the wheel shafts and the table to be altered in various ways.

The machine stands 32 inches high, and is 2 feet 8 inches each way. It will grind work 9 inches long by 5 inches wide. It is adapted to all small flat work, especially to dies of hardened steel and chilled iron, to parts of gun and pistol locks, sewing machine work, small levels, machine keys, locks, etc. Lastly, it is claimed that thousands of small parts can, by this means, be finished to a gage with greater exactness than can be done in any other way. The remaining portions of the device are similar to those in the device first alluded to above. H is the driving pulley, and I is a small suction blower used to draw away the dust from the machine.

For further information, address the Tanite Company, Stroudsburg, Pa.

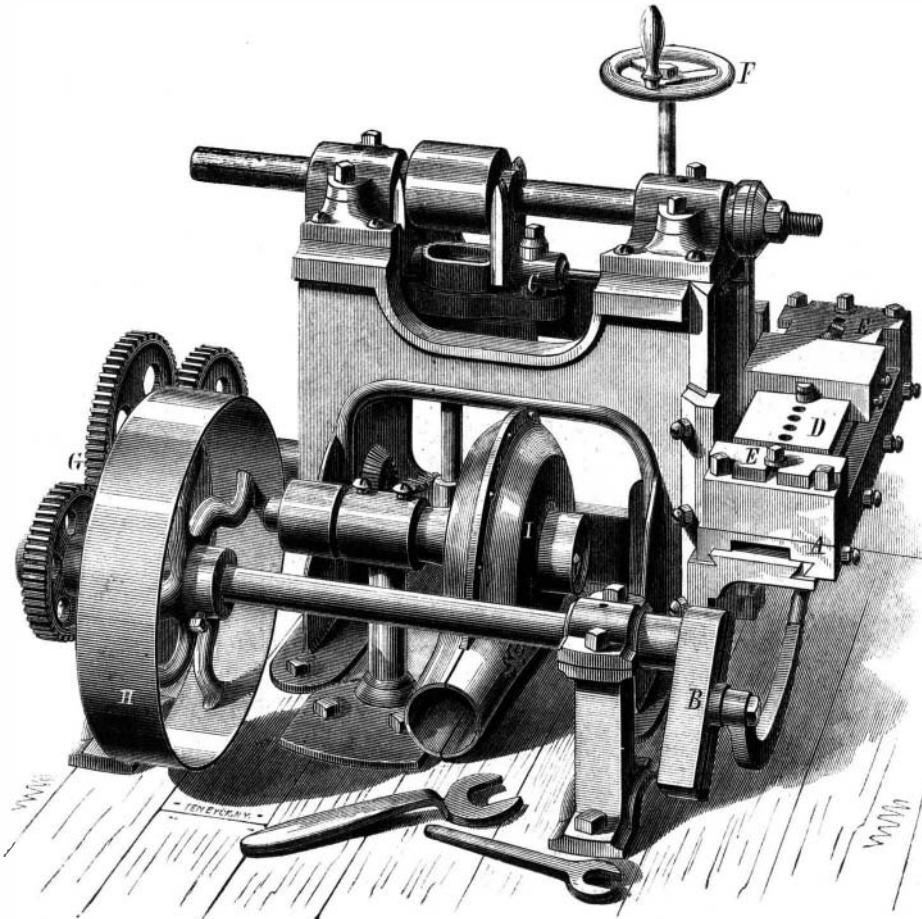
UMBRELLA SUPPORTER.

Mrs. Eliza M. Arnold, of Houston, Texas, has invented a new parasol and umbrella supporter, of which we give a perspective view, illustrating its use.



A A are two rods, curved to fit upon the forward side of and pass over the shoulders of the wearer. The lower ends of the rods, A A, are attached or hinged, as shown at a', to an

open metallic ring, B, of such a length as to pass around, or nearly around, the waist of the wearer, to be secured to a belt, E, buckled or clasped around the waist. The upper parts of the rods, A A, curve toward each other, have a coil formed in them to give them elasticity, and are bent upward; they are connected with or are coiled to form a sock-

**NEWMAN'S PONY PLANER.**

et to receive the handle of the parasol or umbrella. To the rods, A A, are attached straps, C C, to be passed around the arms or across the breast of the wearer, to keep the said rods in place. D D are elastic straps, which are attached to the frame of the parasol or umbrella, the free ends of which are provided with loops or rings to catch upon buttons, a', attached to the belt, E, so that by adjusting the straps, D, the parasol or umbrella may be tilted or inclined forward or backward, or to either side, as circumstances may require. The device may be worn with the rods, A A, passing down in front of the shoulders, or in the rear of the shoulders, or one in front and the other in the rear of either shoulder, as desired.

A New Phase in Gold Mining.

Since the discovery of gold in talco-slate a few months ago, and the active development of a mine of that description in El Dorado county, by the Old Hickory Gold Mining Company, a great interest in that peculiar formation has been displayed by our miners, and we will therefore give a short description of the material and its constituents.

Talco-slate, or the slaty formation of steatite, is of primary period, and is generally found in large ledges and deposits in the slate range. It is ordinarily called soapstone, and consists of silica 62.6, magnesia 32.5, water 4.9. It is perfectly fireproof, and of the same class as asbestos; and considering that its hardness is only two, to seven of quartz, we dare say that the stamping or rather grinding of it can be done very easily. The company now developing the first mine of that description on this coast have 22 feet of a ledge, the assays of which run from \$50 to \$200 per ton; and we are credibly informed that the ore, on account of its softness, will work by pan amalgamation with alkalines for \$2.00 per ton. The sulphurets contained in the ore assay \$329 per ton, and constitute about five per cent. As the ledge is traceable for miles, we may shortly look for interesting developments in that quarter.—*Mining and Scientific Press.*

Elastic Dammar Varnish for Photographs, etc.

An elastic flexible varnish for paper, which may be applied without previously sizing the article, may be prepared as follows: Crush transparent and clear pieces of dammar into small grains; introduce a convenient quantity—say forty grains—into a flask, pour on it about 6 ozs. of acetone, and expose the whole to a moderate temperature for about two weeks, frequently shaking. At the end of this time, pour off the clear saturated solution of dammar in acetone, and add, to every four parts of varnish, three parts of rather dense collodion; the two solutions are mixed by agitation, the resulting liquid allowed to settle, and preserved in well closed phials. This varnish is applied by means of a soft beaver hair pencil, in vertical lines. At the first application it will appear as if the surface of the paper were covered with a thin white skin. As soon, however, as the varnish has become dry, it presents a clear shining surface. It should be applied in two or three layers.

This varnish retains its gloss under all conditions of weather, and remains elastic; the latter quality adapts it especially to topographical crayon drawings and maps, as well as to photographs.—*Pharmazeutisches Centralblatt.*

Photo Portraits with Borders.

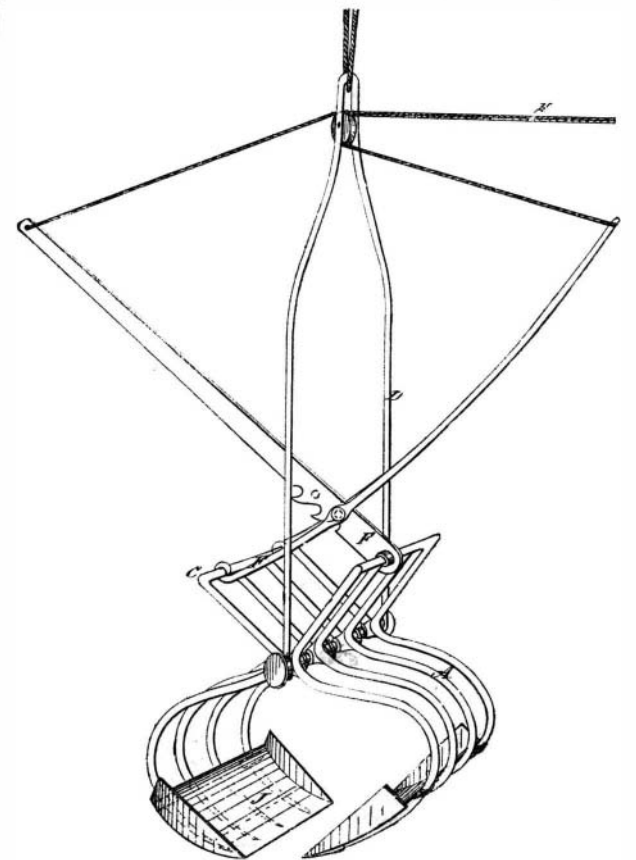
M. C. Quesnay, of Lille, France, gives the following for producing in one printing a portrait combined with a border in any design, and in the same or two different tints. In taking the portrait, the glass is first cleaned and treated with an ethereal solution of wax; it is then collodionized, sensitized, and exposed in the usual manner. Upon the ground glass of the camera an oval is traced of the exact size the portrait is required, and between the prepared plate and the shutter of the dark slide is fixed a mask, cut to the exact size of the oval upon the focussing glass. By this means the photograph is produced with a transparent border. After washing the negative, flow over it a fifteen grain solution of gelatin to the depth of about one twentieth of an inch, and set it aside to dry in a place free from dust. When quite dry, it is coated with ordinary transfer collodion, and strips of paper are gummed upon the borders; when the latter have become dry, the pellicular negative is detached from the glass by cutting round the edges with a sharp penknife. A second negative is then produced of the object or surface intended to be used as the ground for the border, a mask being employed in such a manner as to leave a transparent opening in the center, the exact size of the portrait previously produced; the two negatives are then superimposed and printed from in the ordinary manner. If the background or border be required in a different tint, the print, upon removal from the frame, must be washed thoroughly to remove free silver. With a brush dipped in solution of hyposulphite of soda, go carefully over the portion representing the border, and again wash thoroughly. After toning, the portrait will have the usual purple or violet brown tone, while the border will be represented by a sepia tint. This plan may be modified by cutting out the portrait from the pellicular negative, and gumming it, together with an open mask representing

the pattern of the border, upon a piece of glass or mica, and proceeding as in the former case.

CHAFFIN'S IMPROVED HAY FORK.

Mr. David S. Chaffin, of Vinton, Iowa, has patented through the Scientific American Patent Agency (April 25, 1876) the new grappling fork represented in the annexed engraving. The apparatus is adapted for handling hay, manure, and like materials by horse power. It also may be employed for removing stones, etc., from the bottoms of shallow ponds, and will find various other convenient utilizations about a farm.

The curved tines, A, are pivoted to each other, and upon their upper ends are formed rigid balls. To the ends of the pivot bolt is pivoted a clevis, D, to which the hoisting rope is attached, as shown. To the balls of the arms are connected the pivoted levers, F, the lower end of one of which is slotted to admit of the passage through of the other. The inner lever has several notches formed in it to receive the pivot bolt, so that the fork may be locked with the points of the tines close together or at any distance apart. The levers, F, are governed by ropes, H. By this construction, the weight of the fork and load is entirely supported by the clevis, D, so that the levers may be easily operated by the trip ropeto



cause the discharge. In handling mud and other fine substances, the plates, J, are easily attached to the tines, and act as shovels.