

steel produced has proved to be very satisfactory.—Mr. J. D. Weeks, Secretary of the Western Iron Association, who has just returned from an examination of the iron ore-beds in the vicinity of Lynchburg, Va., pronounces them to be the greatest he has ever seen, not even excepting the Iron Mountain or Lake Superior districts.—At present writing, nearly 400 men are reported to be at work on the Cape Cod Ship Canal. Its undertakers expect to have the work finished within two years. The length of the water-way will be about 8 miles; the canal will have a width at bottom of 66 feet, and at top of 250 feet. The cost of building is estimated at \$2,500,000.—The French patent of MM. Barbieux & Rosier, under the title of *Savon de Benzine*, describes a method of saponifying all the natural mineral oils, as well as those obtained from schist, asphalt, and similar sources, by adding to the oils in question about 15 per cent. of stearic acid, and then three parts of animal grease to two parts of the acidified petroleum. Such a process, if it works smoothly, should possess great practical value.

#### HOUSE DECORATION.

The rage for house decoration which now extends to every part of the country, and makes itself felt in every village and hamlet even, has created an extraordinary demand for stuffs rich in color, whether cheap or costly, with which home and foreign manufacturers are stocking the market. Perhaps the new fever will not last long, for already it is carried by some people to an absurd extreme which presages a reaction, and here, as in England, the danger is that a wholesome improvement in the taste for decoration will be replaced by a vulgar desire for display.

We see nowadays city and country houses which look rather like shops for the exhibition of bric-à-brac and rich hangings than homes in which people expect to get comfort. The rooms upon which some famous upholsterer has lavished the resources of his stock may remind one of the modern scenic sets on the stage of a theatre, and there seems to be little provision for the substantial enjoyment of their occupants. Everything in them is harmonious enough, perhaps, except the people. In color and composition they suggest a picture, but the inmates of the house are out of place as the living figures in it. They don't belong among such surroundings, and they can't be comfortable amid all this tasteful and splendid display.

But unquestionably people's houses are looking better than they formerly did, and particularly those of people of moderate means. For the happiest thing about the moderate decoration is that its effects are produced rather by colors than by materials, and very inexpensive fabrics will serve the purpose. Cotton stuffs, as, for instance, cotton flannel will take the most delicate dyes, and yield tints of remarkable beauty. And our own wall papers, which are now in unexampled demand, may be bought for a small price, and yet be of patterns and colors which will satisfy artistic taste.

This prevailing desire for house decoration is keeping upholsterers busy, and the work of refurnishing or freshening houses in town goes on so rapidly that all the trades concerned in it are now closely occupied.—*American Cabinet-Maker.*

#### SCREW-CUTTING MACHINERY.

The following arrangement of machinery has been designed by Mr. H. E. Russell, of London, and formerly New Britain, Conn., U.S.A., for holding a screw blank in the jaws of a screw-cutting machine, so as to prevent it from slipping in the jaws during the operation of cutting a thread upon it. This improvement is particularly applicable to machines used for making machines or fine threaded screws, and in which a die is employed instead of a chasing tool for cutting the thread. In the ordinary machines of this class, the holding pressure is applied to opposite sides of the screw head, and to the shank directly under the head in the line of the transverse axis. The result is that many heads are crushed, particularly those whose nicks happen to stand while held in a plane parallel, or nearly so, with the plane of the faces of the jaws. Again, if the metal of the blank is not of uniform density, or if the jaws do not exert an equal degree of pressure, the axis of the blank is liable to be thrown out of line with the axis of the cutting die. Moreover, the extreme pressure which is exerted upon the blanks frequently cause their adhesion to one of the jaws after they open to discharge a blank, thereby exposing the machine to injury when the feeding fingers come into action to introduce the succeeding blank to the spindle. In the new arrangement, the screw blank is held in the jaw spindle of the machine by pressure applied

against the top surface of the blank head in the direction of its longitudinal axis, in combination with pressure applied nearly against the bevelled surface of the under side of the head. This is effected by means of two levers, somewhat similar to the ordinary jaws for holding blanks, which are mounted in the spindle head upon strong fulcrum pins, and work in recesses or slots. The rear ends of these levers are connected by links of equal length, having a common hinge pivot in a sliding central bar. This bar passes through a collar, and between the end of this collar and the face of a nut on the end of the bar is arranged a coiled spring, the tension of which can be increased by screwing up the nut, but which always tends to pull the central bar in a direction which will bring the links more nearly in a straight line, and consequently to set the rear ends of the levers further apart. The front ends of the levers are furnished with hook-shaped clamps of hardened steel. These clamps hold the screw blank by the under side of the head against a socket, in which the top side of the blank head is seated. For this purpose the inner edges of the clamp are so shaped as to conform to the bevelled or conical shape of the under side of the head, and each embraces a portion of the latter. This seat is set in a hollow cylindrical guide to keep it centrally in the spindle, and it is capable of a slight movement longitudinally. A spring may be applied in any convenient manner to give it an impulse forward, when the seat is released from the force which has pressed it backward. This seat serves a threefold purpose; it forms one of the members of the clamp to hold the screw blanks; its concave or recessed face acts in combination with these members to centralise the blanks; and it serves by its movement forward under the impulse of the spring to eject the finished screw when the same is to be discharged from the spindle. In a machine provided with this invention, a forward movement is given at the proper time to the central bar by any suitable device. The effect will be that the ends of the longer arms of the levers will be brought nearer together, and the hooked clamps will open. The feeding mechanism now inserts a blank, so that its head will bear against the seat, and the sliding bar being thereupon moved rearward by the action of the spring, or by other suitable means, the jaws of the holding clamps are moved towards each other, and, engaging as above described with the bevelled under portions of the head, force the blank against the seat, and carry it and the seat backward until the seat comes to a solid bearing. The blank is by this means firmly kept from slipping in the spindle by pressure applied against the top surface of the head of the blank, in combination with pressure applied in the opposite direction against the under side of the head.

**DRY ROT IN HOUSES.**—At the annual meeting of the Cryptogamic Society of Scotland, commenced in Glasgow recently, a paper by Mr. Young, architect, of Perth, was read by the Secretary, Dr. Buchanan White, on "Dry Rot Fungus in Houses, and the best Means of Eradicating it." The following were the conclusions at which Mr. Young arrived:—1. That wood is necessary for the root or first production of the fungus. 2. That the wood after a time gets exhausted of its nourishment for the fungus, and when this is the case the plant attached to it dies. 3. That if it has wood for its root its branches will luxuriate, where there is no wood, even in the heart of a well-built dry rubble wall; but when the wood at the root is exhausted it dies in the wall. 4. That where the conditions are favorable free ventilation is not against its growth; on the contrary, a draught aids in dispersing its spores. 5. The cure is to eradicate it as far as possible by burning the soil, applying a flame to the walls, and removing every particle of wood from its locality, and substituting stone, iron, or cement. 6. That upon perfectly dry and healthy wood it would not readily take root, but if it gets good root in dampish wood its growth will ramify over dry fresh wood and prey upon and destroy its tissues, thus ruining it for all structural purposes.

**CHEAP GAS.**—Much attention has of late been directed to some new processes of producing a cheap gas by the decomposition of water, which, in the form of steam, is brought in contact with incandescent carbon. The reports made by the scientific press states that the experiments in this direction in Sweden and Russia have been attended with good results, and various scientific authorities, some of them government officials, declare that the gas has been employed for welding wrought iron, for smelting in crucibles, both pig iron and steel—the effect being very satisfactory in respect to the heating power of gas. For illumination, this kind of gas is claimed to possess some peculiar advantages. When used for this latter purpose, the gas is conducted through a vessel filled with cotton moistened with benzine.