

**AMATEUR MECHANICS.**

**EASILY MADE SLIDE REST.**

While the most of the work to be done on the foot lathe may be accomplished as expeditiously and quite as well without a slide rest as with it, yet there are some operations that are greatly facilitated by means of this tool. Boring, for example, a very difficult thing to do with hand tools, may be done quickly and accurately by using a slide rest. In gear cutting—which will be described in a subsequent article—a slide rest is essential.

In the case of this tool, as well as others previously described, the purchase of a well made article is recommended. Yet, if one has time and feels so inclined, he may make a really efficient slide rest with no other tools than his lathe and ordinary turning tools. Figs. 1 to 3 inclusive represent a slide rest that may be made in this way, Fig. 1 being a perspective view, and Figs. 2 and 3 respectively longitudinal and transverse sections of the tool carriage.

The T-shaped casting, A, has a longitudinal slot, which is made T-shaped in cross section to receive the head of the bolt that confines it in position upon the plate fitted to the lathe bed. The vertical ears at opposite ends of the casting are bored to receive the ends of the rods, B, upon which the tool carriage, C, slides.

The first operation in making the slide rest is to make one side of the casting, C, perfectly plane. It is then chucked in the lathe with the plane side next the face plate. Three holes are bored through it, two for the rods, B, and a smaller one for the screw, G. It is then chucked on an angle plate, so that the holes for the rods, B, are equally distant from the center line of the lathe, and the hole for the rod, D, is bored very carefully to insure the parallelism of its sides. The casting, A, is now placed upon a plane surface, and the casting, C, is clamped to the ear at one of its ends, and adjusted so that a line drawn through the center of the holes is exactly parallel with the bottom of the casting. The casting, C, is used in this manner as a template for drilling both of the ears for the reception of the rods, B. It will be necessary to exercise great care in drilling these holes, as it is of vital importance to have the rods, B, perfectly parallel.

The casting, C, may now be tapped to receive the screw, G, and the tool carrying bar, D, may be fitted to its place, and turned down and threaded to receive the internally threaded boss of the wheel, E. This boss is fitted to the base of the casting, C, and is grooved circumferentially to receive a split ring, F, the latter being drilled to receive the ends of three screws that project through the casting into it and prevent the boss of the wheel, E, from moving lengthwise of the hole, while the arrangement permits of the free rotation of the wheel. The bar, D, has a head which is drilled vertically to receive the tool post, and is provided with a heavy feather at the top, which is received by the slot formed by sawing into the upper portion of the casting, C. To render the bearing of the bar, D, somewhat adjustable, two screws pass through the casting above the feather. The tool post is of the usual description, having a loose collar above the head of the bar, D, and a nut below it. The mortise for receiving the tool extends a little below the loose collar, so that when the tool is clamped the post and ring will also be clamped. A slot is cut through the bottom of the casting, C, into each of the guide rod holes to permit of adjustment in case of wear by means of the screws which pass transversely through the slot. The

ends of the rods, B, are fastened by a similar device. The screw, G, is prevented from end motion by a shoulder on the outside of the ear at the crank end, and a collar on the inside. The rods, B and D, may be made of steel or of cold rolled iron; the latter will be true enough without turning. The casting may be either of brass or iron; a good quality of iron will perhaps prove the most satisfactory. The slots may be cut with the saws described in a former article. The tools to be used with the slide rest have also been previously described.

In Fig. 4 is represented a boring device which will be readily understood without special description. The casting, A, is fitted to the tool rest socket and provided with a sliding

bar, B, which is like the bar, D, in the slide rest above described, excepting that its back end is rounded and provided with a pin which slides in the slotted arm attached to the tail spindle of the lathe by which it is moved, instead of having a moving device of its own. With this tool, boring and some kinds of outside turning may be done. It is less expensive than the slide rest and answers a good purpose.

M.

**A Paraffin from a Pine.**

At a meeting of the London Chemical Society in April, a paper was read by Mr. T. E. Thorpe on "Heptane from *Pinus sabiana*." The author remarked that in the *Pharmaceutical Journal* of March 30, 1872, Mr. W. Wenzell described,

smell is due. The pure oil has the composition of heptane, containing 83.85 per cent carbon and 16.03 per cent hydrogen. The author has compared the heptane obtained from *P. sabiana* with the heptane from petroleum, and that obtained by treating azelaic acid with baryta. The specific gravity of the heptane from petroleum is .7301, that from azelaic acid is .700. These heptanes are believed by Schorlemmer to be identical. The author is at present engaged in an investigation of this point. It is very remarkable that a paraffin should be found in such a state of purity in a plant.

**MISCELLANEOUS INVENTIONS.**

Mr. A. P. Peabody, of Holden, Mo., has patented an improved animal trap for catching rats, mice, and other small animals. It is automatic in its operation and very simple in its construction.

An improved instrument for cleaning combs after they have been used for combing the hair, has been patented by Mr. Samuel E. Hibbert, of Lowell, Mass. It consists of a spindle united to two disks, between which are stretched twisted or crimped wires.

Mr. Thomas Cunningham, of Nashville, Tenn., has patented an improved mail bag fastener, which consists in a fork to which the rope is attached after being reeved through the mouth of the bag so as to have a looped end, which, when the bag is to be closed, is drawn tightly and doubled over the fork, so as to be held firmly in place.

An improved farm gate has been patented by Mr. L. C. Pope, of Paola, Kansas. This gate is constructed so that it may be conveniently opened and closed by a person on horseback or in a vehicle.

The gates are supported by rollers which

run upon rocking rails. An improved fire-wood drag saw has been patented by Messrs. T. B. Fagan and M. W. Henry, of Van Wert, O. The invention relates to a frame and the manner of hanging the saw therein, so that the sawing is done more rapidly and with less exertion than with the ordinary hand saw.

Mr. L. O. Winans, of Newburg, N. Y., has patented an improved plating machine, which consists of a rectangular frame or box made of a single piece of tin, having in the top parallel slots, and having the edges at the slots bent downward so as to form a lip under each slot. The plaits are formed by forcing the goods down through the slots with a flat blade.

Mr. Enoch Lord, of Portland, Me., has patented an improvement in reclining chairs, which consists in bent and pivoted bars, and catch bars pivoted to the back and arranged so that a person sitting in the chair can raise both catches with one hand and adjust the chair back at any desired angle.

Messrs. Alfred E. and William E. Feroe, of Madalin, N. Y., have patented an improvement in processes and apparatus for fining fermented liquors. In this process the yeast is separated from the ale and lager beer in a very short time, and the flavor and the appearance of the liquors are improved.

Messrs. Alanson Cary, of New York city, and T. S. Blair, of Pittsburg, Pa., have patented an improved metallic fence post, the design of which is to arrange the materials of which it is composed so that pressure against the post will always be opposed by the tensile strength of the materials, thus making the post very light but strong.

An improvement in milk coolers, patented by Mr. John White, of Lisbon, N. Y., cools the milk by a current of water and retains it at a

proper temperature. It consists in a double vessel having hinged double leaves or covers through which the water circulates.

An improvement in wrenches for making screw connections between pipes, couplings, etc., has been patented by Messrs. J. G. and O. G. Johnson, of Girardville, Pa. The wrench jaws are pivoted to the handle, and they are held together by straps.

A tap, consisting of a grooved tapered body, threaded through a portion of its length, and provided with an internally threaded ring, for confining cutters in the grooves, has been patented by Messrs. L. D. Castle and J. W. Strong, of Bridgeport, Conn.

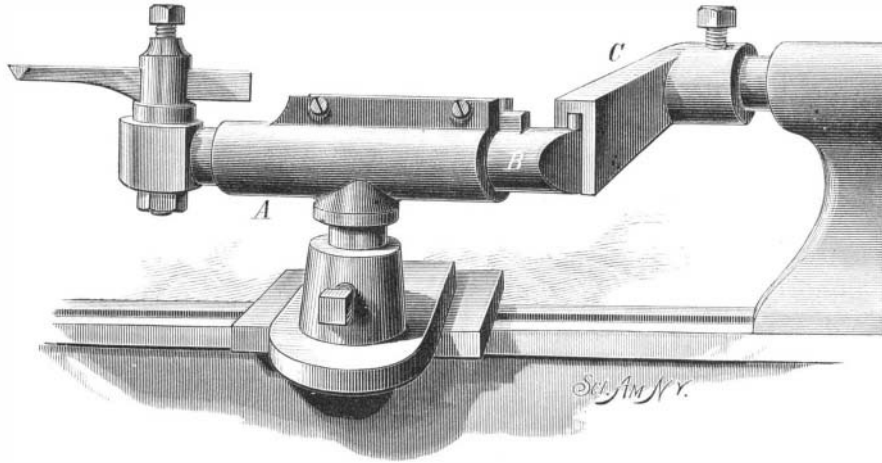
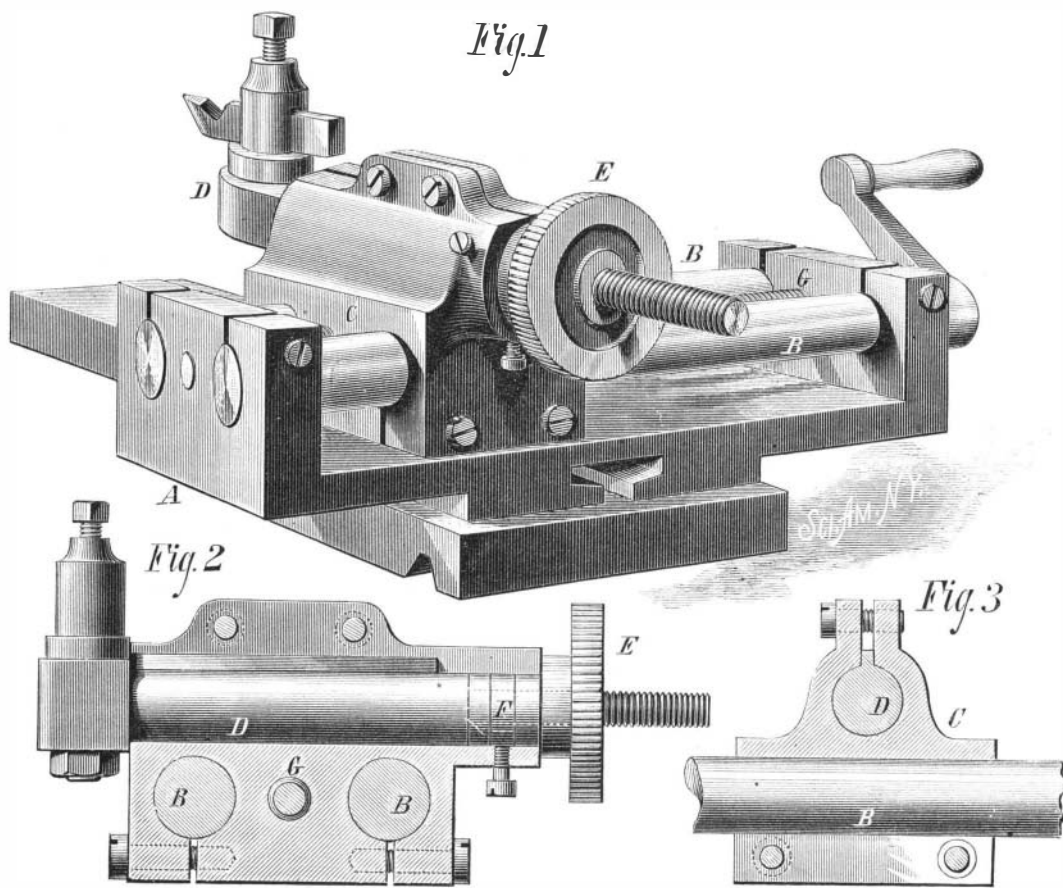


Fig. 4.—BORING ATTACHMENT.

under the name of "abietene," a new hydrocarbon obtained by distilling the exudation of the *Pinus sabiana*, a tree indigenous to California, and known locally as the "nut pine" or "digger pine." To procure the exudation, the tree, during winter, is notched and guttered at a convenient height from the ground. The resin on distillation yields a liquid hydrocarbon. The crude oil is met with in San Francisco as an article of commerce, under the names of "abietene," "erasing," etc., as a substitute for benzoline in removing grease spots, etc. It is a nearly colorless mobile liquid of a powerful aromatic smell, resembling that of oil of oranges.

Wenzell contrasts its character with those of terebenc from *Pinus sylvestris*. Abietene has a specific gravity of 0.694,



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boils at 101°, dissolves but a small quantity of hydrochloric acid gas, and is but little attacked by cold nitric acid. From a consideration of the general properties and behavior of this hydrocarbon, the author of the present paper (Mr. Thorpe) concluded that it was likely to be a paraffin. The occurrence of a paraffine playing the part of oil of turpentine in the vegetable kingdom was a thing hitherto unheard of, the only natural sources of this hydrocarbon (heptane) being petroleum and fish oil. The author therefore obtained from Mr. Wenzell two gallons of the abietene, and subjected it to a most exhaustive chemical and physical examination, the details of which are given in the paper. The crude oil is slightly contaminated with a resinoid matter to which its