

NEW QUICK ADJUSTING VISE.

We give perspective and sectional views of an improved form of quick adjusting parallel bench vise with screw clamp, recently patented by Mr. John Thomson, No. 9 Spruce street, New York city. This tool is made by the Colts Patent Firearms Manufacturing Company, of Hartford, Conn. The general appearance of one style of this vise is shown in Fig. 1, while Fig. 3 shows a longitudinal section, and Fig. 2 an end view. The two jaws, *ab*, are similar to each other, and are connected and guided by two parallel round rods. The lower rod, *d*, is forced tightly into the front jaw, but is free to slide through an accurate bearing of ample length formed in the fixed or back jaw. The upper rod, *f*, is flattened on a portion of its lower side, and is provided with ratchet teeth, engaging in which is a pawl, *h*, housed within the back jaw and retained in the mesh by a spring, indicated in the engraving by *i*. To the pawl shaft two disengaging handles are secured, one on each side of the device, which are shown in the end view, Fig. 2. The forward end of the upper rod is fitted in the front jaw and forms the nut for the clamping screw, *e*. The screw is made one-eighth of an inch pitch, and square thread. The action of the screw is limited to $1\frac{1}{4}$ inches by a stop piece, *g*. This prevents subjecting the threads of the screw and nut to a strain when having but a slight bearing, and also prevents the rod from turning with the screw. The arrows stamped on the ratchet rod are for indicating the relative location of the screw in the nut.

In clamping and unclamping work of nearly uniform size, say within one inch, the device is used as an ordinary screw vise. To make a quick and extreme adjustment, one hand is placed on the clamping lever and the other hand on either of the disengaging handles. At practically the same instant both hands are drawn forward, which disengages the pawl from the ratchet and permits the withdrawal of the front jaw to the limit of the stop pin. When in this position the work is inserted against the face of the back jaw, and, with the hand on the clamping lever as before, the front jaw is forced up to meet the work, the ratchet teeth sliding idly past the teeth of the pawl. At this point the action of the hand is changed into a rotative movement with the clamping lever, which instantly secures the work. Some of the advantages claimed for this vise are as follows: All the advantages of a screw vise, with instant adjustment for varying sizes of work; the screw being used only to secure the final pressure permits the use of a fine pitch and short hand lever, and this insures a rapid and firm clamping of the work by the application of moderate pressure. Two disengaging handles being employed, the adjustment of the jaws may be effected with equal facility, from any position that the operator may occupy, with either hand. In material the jaws are of cast iron; the slide shaft, ratchet-shaft, pawl, pawl-shaft, screw and clamping lever, and also the face of the jaws, which are welded to the iron, are of steel. This vise is manufactured as a machine tool, and all the parts are interchangeable. The bearings and working parts are finely finished.

NOVEL CARPET STRETCHER AND CARPET FASTENER.

We give engravings of some novel devices for stretching and fastening carpets, recently patented by Mr. William E. Henderson, of Iron Mountain, Mo. The stretchers are of two forms, one operated by a lever, the other by a windlass or crab. Figs. 1 and 2 show the crab stretcher, and Fig. 3 represents the lever employed in some cases instead of the crab. The stretcher plate in its under side and toward or at its rear edge has a series of teeth or points inclined or curved forward, as shown, and at or toward its forward edge it has two teeth or points near opposite ends. A cord attached to the stretcher plate leads from the under side and is connected with a crab having teeth or points in the under side of the base plate. A cord leads from the crab shaft and connects with the cord attached to the stretcher.

In use the stretcher plate is connected with the carpet by means of its teeth. The crab is fixed in front of the plate by inserting its teeth in the floor and holding the end of the base plate down. Then by winding the cord on the crab shaft the stretcher plate is drawn forward, the carpet being lifted slightly from the floor and stretched in the desired direction. If the carpet needs a second stretching, the stretcher plate is fixed and the carpet prevented from slipping back by pressing the forward

edge of the plate down, so as to fix the points in the floor. When this is done the crab is moved and readjusted and the stretching operation repeated.

When the lever shown in Fig. 3 is employed, the same stretcher plate and draught cord are used; but the lever replaces the crab. The lever is pointed at its lower end to engage in the floor, and is slotted to receive the draught cord of the stretcher plate.

In the carpet fastener shown in Figs. 4, 5, and 6, the carpet is held in place upon the floor by means of a strip or plate pressed downward on the carpet, binding it down to the floor sufficiently to hold the carpet from slipping, the strip or plate in turn being held down upon the carpet by means of screws, that are held by a strip, attached to the wall or base board of the room where the carpet is laid.

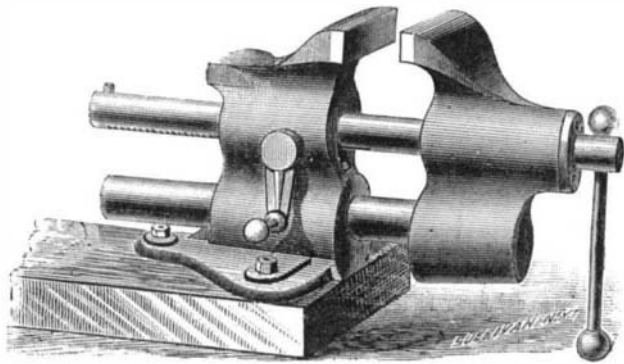


Fig. 1.—Thomson's Quick Adjusting Parallel Vise.

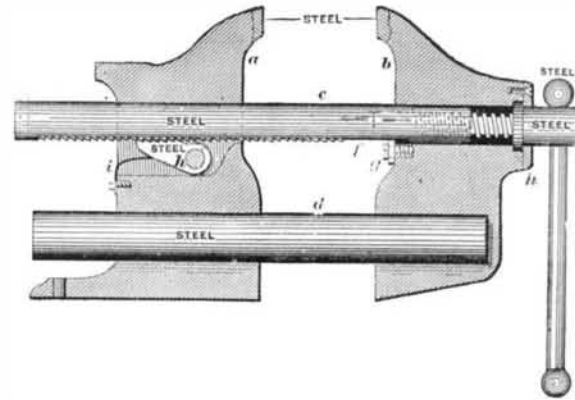


Fig. 3.—Longitudinal Section through the Vise.

In Fig. 4 the complete fastener is shown. In Fig. 5 the method of fastening the holding strip to the base board is represented, and Fig. 6 shows the screw pressing downward on the top of the strip, which bears upon the carpet and holds it securely. This fastening is much neater than the usual method of fastening by tacks or ordinary fasteners, as it does not permit of the accumulation of dirt between the edge of the carpet and base board. It excludes bugs and moths, and furnishes in connection with the stretcher a complete method of putting down carpets.

The stretcher may be made of any desired width to adapt

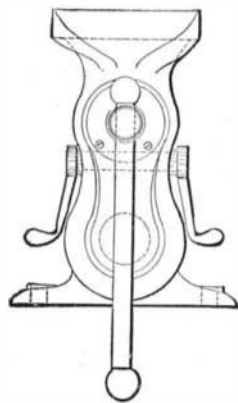


Fig. 2.—End View of the Vise, showing the Disengaging Handles.

it to the size of the carpet, and the design of the fastening may be made to correspond with the other woodwork of the building in which it is used.

Castor Oil Plants as Fly Killers.

Observations made by M. Rafford, a member of the Société d'Horticulture at Limoges, show that a castor oil plant having been placed in a room infested with flies, they disappeared as by enchantment. Wishing to find the cause, he soon found under the castor oil plant a number of dead flies, and a large number of bodies had remained clinging to the under surface of the leaves. It would, therefore, appear that the leaves of the castor oil plant give out an

essential oil or some toxic principle which possesses very strong insecticide qualities. Castor oil plants are in France very much used as ornamental plants in rooms, and they resist very well variations of atmosphere and temperature. As the castor oil plant is much grown and cultivated in all gardens, the *Journal d'Agriculture* points out that it would be worth while to try decoctions of the leaves to destroy the green flies and other insects which in summer are so destructive to plants and fruit trees.

Discoveries and Inventions the only Stable Capital.

In the *Atlantic Monthly* for May, Mr. Edward Atkinson says: "There is one form of fixed capital, which has been steadily increasing for all time, but which has accumulated more rapidly during the last century than ever before. It

is the only kind of capital that has any stability, and the only kind that is of any permanent use in the world. It becomes in a very short time the common property of all, and is therefore one of the most substantial examples of communism which can be cited.

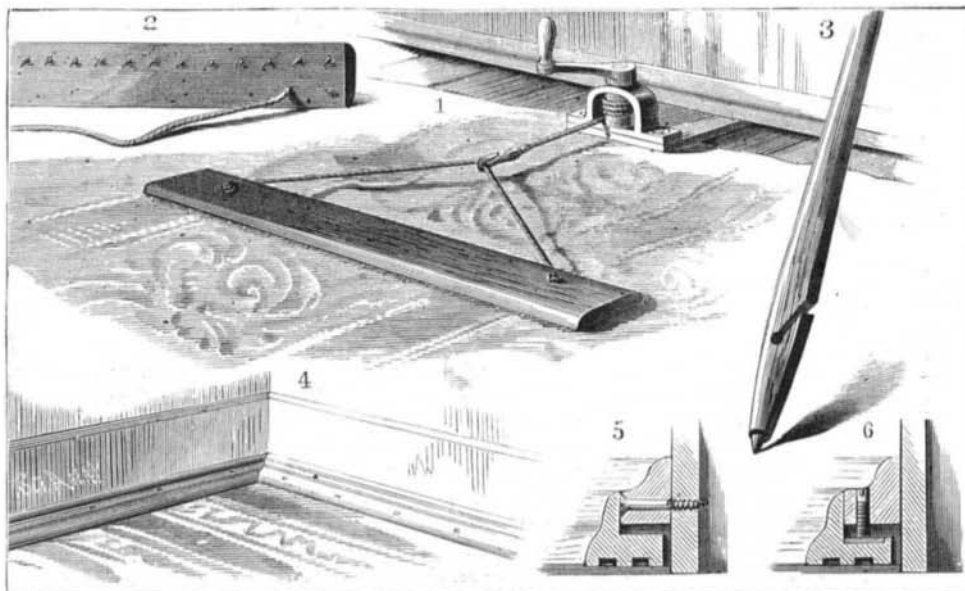
This capital consists in the inventions and discoveries in applied science—the immaterial capital of the world. The representatives of this work,

without whom those who are known as great capitalists would be powerless, are the theorists in science; the men, who, having combined the results of observation, first indulged in bold hypotheses, then venture upon experiments, and lastly construct true theories, in accordance with which practical men work out the applications of science to art and industry. These men are the great instruments for promoting the common good of humanity; and they, together with those who level the ways and remove the material obstructions to commerce by carrying the rails over mountain sides, through tunnels and across the great plains, or who send ships across the sea, 'weaving the web of concord among nations,' are the chosen prophets, the elect among men, who are surely bringing about the solidarity of nations, rendering subsistence easy and certain, and bringing to the people of all lands the common enjoyment of the gifts of the Creator."

Quinine Trees.

During the last two or three years a bark containing quinine and quinidine has been imported into England from Columbia in such enormous quantities as to equal or even sometimes exceed the whole of the importations of cinchona bark from all other countries. The botanical source of this bark, which is known in commerce under the name of *Cuprea Cinchona*, on account of its peculiar coppery tint, has hitherto been a mystery. M. Triana, the well known quinologist, has recently succeeded in tracing it out, and has stated, in the *Pharmaceutical Journal* for April 22, that it is derived in great measure from two species of the nearly allied genus *Remijia*, none of the members of which were previously known to contain quinine. Several species of *Remijia* have leaves resembling those of the true cinchonas, and of these M. Triana has determined that *R. purdieana*, Wedd., and *R. pedunculata*, Karsten, certainly yield cuprea bark; the former being the species which contains the alkaloid cinchonamine, recently discovered by M. Arnaud. It appears probable that other species also yield the cuprea cinchona of commerce, but definite information on this point is still wanting. The value of this bark has led, according to M. Triana, to great devastation of the forests in which the trees grow, and has produced a financial stagnation, business being neglected in order to follow the more profitable occupation of collecting the bark. Fortunately seeds of the tree have been received and are now in cultivation at Malvern House, Sydenham. The tree is likely to prove valuable for cultivation in countries where malarial fever abounds, since it grows at an elevation of 200-1000 meters above the sea, at which even red cinchona bark will not flourish.

UNUSUAL hail storms are reported from various parts of the South, the hail stones being of exceptionally large size. In one or two instances men have been killed by the pelting blocks of ice "as large as a man's fist." Still worse storms have been reported in Europe. The *Sicilian Gazette* tells of one which wrecked a village. When it was over it was found that eleven persons had lost their lives, their bodies being found disfigured beyond recognition; horses and cattle were killed, and many buildings so badly injured that they had to be torn down.



HENDERSON'S CARPET STRETCHER AND CARPET FASTENER.