

New Inventions.

New Alloy.

The French chemists have discovered a new alloy which will answer well as a substitute for pure silver. It is composed of silver, nickel and copper; these metals may be combined in any suitable proportions—as silver twenty parts, nickel from twenty-five to thirty-one parts, and therestup to one hundred parts in copper. By these proportions an alloy is formed that contains twenty per cent silver, and equaling the third degree of fine silver. The copper employed must be pure, and the nickel should be entirely free from cobalt.

Incrustations in Boilers.

Messrs. Editors:—The inside of my boiler is as bright as when new; and for the last three years I have done nothing but put into it a stick of oak timber as long as the boiler, or several of them if I had not one long enough; said sticks being large enough not to fall through between the flues. I throw the old ones out, and put in new ones as often as I clean out the boiler, which is, perhaps, after every thirty or forty days running. The water I use is, probably, not the worst to be found, but it is bad enough to form a considerable crust; the first six days I used it without doing anything for the prevention of crust.

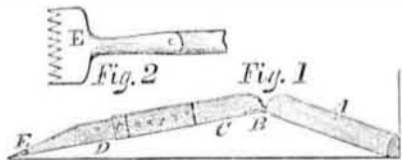
H. GOEPFER.

[This arrangement is very simple, and may be of use to some of our boiler-owning subscribers, who will, no doubt, try it, and let us know the result. For any information on super-heated steam we must refer our contributor to the correspondence column, where, in an answer to S. W. R., of Vt., he will find our opinion on the subject.—Eds.]

Carpet Stretcher.

A correspondent (Mr. P. H. Tyler, of Richmond, Va.) has sent us a drawing of an improved carpet stretcher, which we engrave for the benefit of our readers.

Fig. 1 is an end view of it, and Fig. 2 an end view of the toothed end. A is a piece of wood having a cushion at one end, and a hinge, B, at the other, by which means it is connected to another piece, C, having a number of holes and a strap, c, through which slides the piece, D, having the toothed iron, E, at its extremity. The operation is very simple. All that is required is to place the cushion on A against the wall, and the teeth



on E in the carpet, having the whole in the position shown in our engraving, and then by pressing on the hinged part, the carpet will be stretched. The pieces, D and C, can be connected, and the whole lengthened or shortened to suit any carpet, by sliding them against each other through the strap, c, and fastening them by passing a pin through corresponding holes in each. It has been successfully used for two years, and can be made by any carpenter for two dollars.

Improved Box for Carriage Hubs.

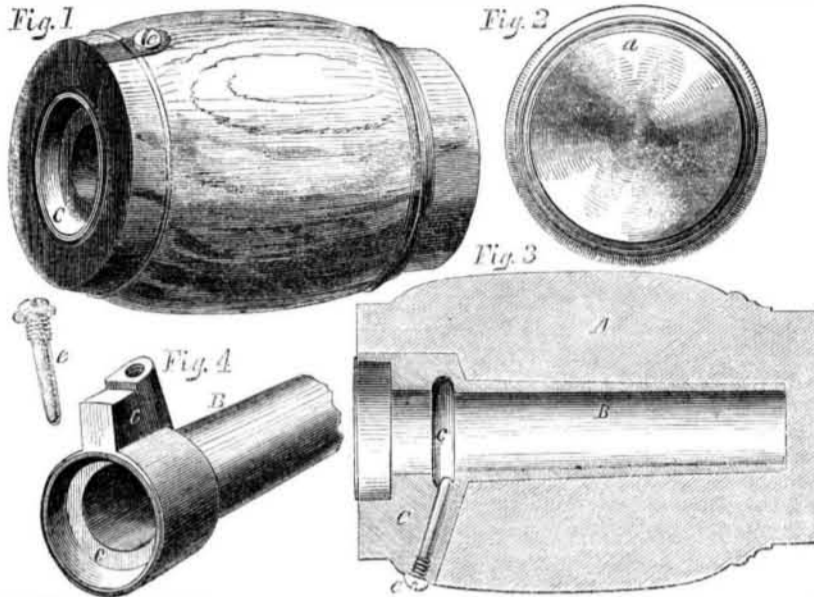
The great inconvenience attending carriage hubs is that there is always a difficulty in keeping them well greased; and the boxes are, when arranged so as to be easily accessible, very liable to become filled with dirt.

Our engravings represent a device which, it is said, overcomes these evils, and is particularly adapted for the English mail axle, although it is applicable to light or heavy wheels. Fig. 1 is a view of the hub with the invention applied; Fig. 2 shows the outside end of the hub, a; and Fig. 3 a section through it.

A is the hub, B the axle box, c the lubricating groove, and C a piece cast into it, which is let into a corresponding slot in the hub; through a hole in this passes a semi-cylindrical tube having at the end a screw,

(seen at e,) and separated at Fig. 4, which also represents the box. The advantage of this is that the screw can be easily removed, and oil supplied, and in the removal it brings with it a small quantity of dirt, and by its

GARRATT'S BOX FOR CARRIAGE HUBS.



shape it always tends to keep the channel in which it lies clean.

The firm who have purchased the English patent have called it the "United States Axle Box," and by this name it will become generally known, thus taking the place of the

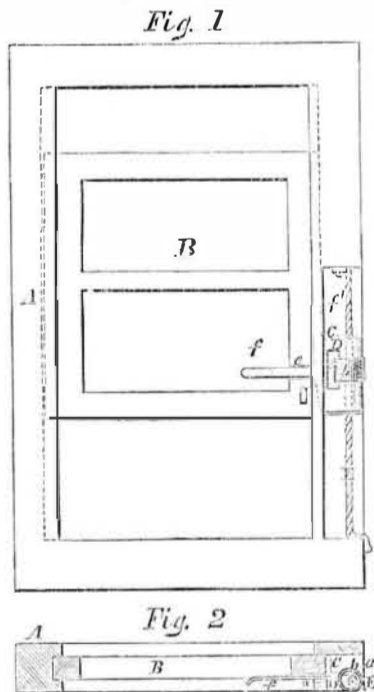
English axle box, which is at present considered the best.

It is the invention of Dr. A. C. Garratt, No. 83 Eustis street, Roxbury, Mass., from whom all further particulars can be obtained. Patented February 26, 1857.

Baker's Sash Supporter.

This supporter for sashes acts by friction, although not in the ordinary way, which is to let the friction of the sash against the jamb hold up the window. This invention is particularly adapted to the windows of railroads, omnibuses, and to other small sashes. In the arrangement shown in our engravings, Fig. 1 is front view, with part of the jamb removed, to show the supporter, and Fig. 2 a section through the invention. The same letters refer to similar parts in each.

A is the window frame or jamb posts, and B a sash, having a vertical movement. In a



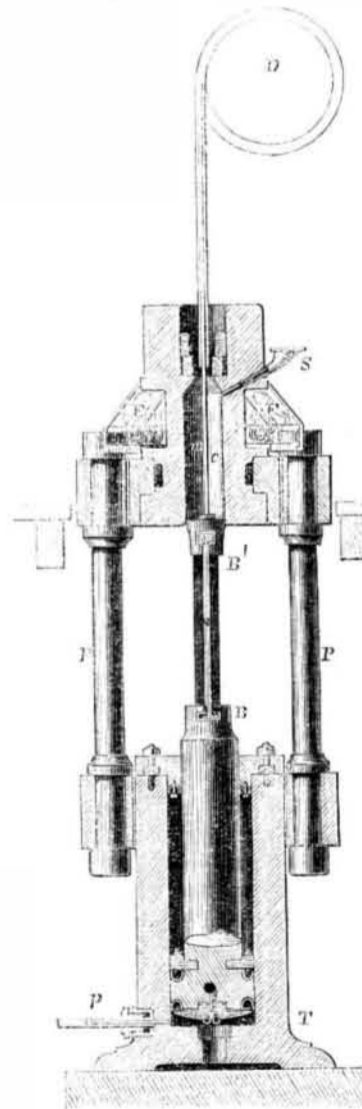
recess, f', in the frame, is placed the cord, E, and to the side of B is attached the metal plate, C, whose outer edge is seen at a; another plate, D, is attached to it by an india rubber band, b, which passes through openings, c, in the plate. The outer edge of D is rounded, and the other has a shank, f, attached, which passes through a groove, e, in the stile of the sash.

The operation is very simple: In raising the window, the thumb or finger is pressed upon the shank, which loosens C and D, from the cord, E; when raised high enough, the shank is released, and the india rubber band

draws the plates, C and D, close against E thus holding the window firm in its place.

This sash supporter is the invention of Mr. Nathaniel E. Baker, of Holyoke, Mass., and from him all further particulars may be obtained. Patented October 13, 1857.

Lead Piping.



The manufacture of lead pipe by the ordinary method combines, like that of sheet lead, the double process of casting and elongation. Whatever may be the dimensions of the pipe required, it is first cast in the form

of a short and extremely thick cylinder, which is afterwards reduced to the proper size by being forcibly drawn, when placed in a mandrel of the exact size of its internal diameter, through a succession of progressively decreasing steel dies. By this process, however, although affording pipes of good quality, with regard to soundness and finish, lengths of from twenty to thirty feet only can be obtained; and, consequently, when very long pieces without a joint are required, recourse must be had to the hydraulic pipe-press shown in our engraving.

This machine consists of a common hydraulic press, T, connected with a double force pump, by which water is pumped beneath the piston, B, through the small metallic pipe, p; above the top of the press, and on a level with the floor of the workshop, is supported by the stout iron pillars, P, a heavy casting, containing the cylindrical reservoir, c, for the reception of the metallic lead, and an annular fireplace, F, charged with pit coal, and communicating with a chimney for the escape of the smoke. At the upper extremity of the cavity, c, is secured a steel die, of the diameter of the outside of the pipe to be made, whilst a mandrel, m, which passes directly through its center, has the same dimensions as the inside of the pipe which is to be produced.

To use this apparatus, the piston, B, is brought into the position shown in the cut, and the space, c, filled with molten lead, through the spout, S, which is immediately removed, and the aperture firmly stopped by a stout iron plug, kept in its place by a strong key. The pressure is now established by admitting the water through a valve, beneath the piston, which forces the other extremity, B', accurately fitting the cylindrical cavity, C, gradually upwards, and causes the lead to escape in the form of a perfectly finished tube through the annular space existing between the mandrel and the fixed collar. The pipe, in proportion as it escapes from the press, is coiled around the drum, D, from which it is afterwards removed, and cut into convenient lengths. The pipe made by this machine is of good quality, and may be made of almost any required length.

On admitting the pressure above the piston by means of a valve, the plunger again descends to the bottom of the cavity.—J. A. Phillips' Treatise on Metallurgy.

Manufacturing Bullets from Lead Wire.

A machine has been invented for manufacturing bullets from lead wire. The wire is coiled upon rests at the top of the machine, and suspended by means of arches, from which the lead is fed downwards into the machine, where it is measured, and cut off as required for each bullet, after which it is forced forward into dies, and formed into the desired shape by compression. It makes musket, rifle and pistol elongated, hollow, and conical expansion bullets; also round or shell balls, at the same time. At one corner it makes round balls, at another musket, at another rifle, and at another pistol elongated bullets; each corner being double, with two sets of dies and punches, which gives eight bullets to one revolution of the machine.

Inventors' Congress.

The editor of a Southern paper writes to us proposing the above, and with the glowing language of the sunny South depicts its seeming advantages. It has been proposed before, and we have always opposed it heartily, as being against the true interest of the inventor; a few greedy capitalists and speculators in patents would soon creep in and turn an intended good into a positive evil, and so blast the end of such a meeting. We give it as our opinion founded on the experience of twelve years, that inventive genius, to be successful must be single and alone, self-dependent, self-reliant, heroic in its labor and its aim.

POSTAGE.—Correspondents who write to us for information, expecting a reply by mail, will oblige us much by enclosing a stamp to prepay return postage. Our daily correspondence is large, and the postage tax is an item