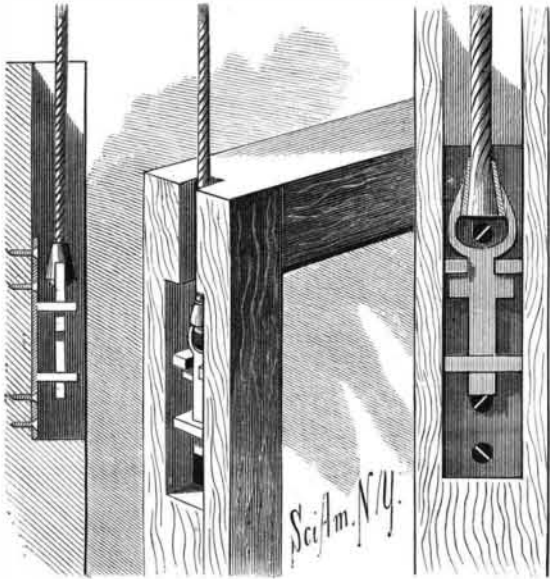


SASH CORD FASTENER.

The accompanying engraving shows a sash cord fastener recently invented by Mr. Wellington H. Christ, of Pine Grove, Pa. On a plate secured by screws in a recess made in the sash bar a short distance from the upper end are formed two flanges, the lower one of which has an aperture to receive the lower end of the shank of the cord holder, whose upper portion enters an edge slot in the upper flange. The cord holder has opposite side arms which engage the upper flange for supporting the sash by weights. The sash cords are attached to cord holders by being passed into the up-



CHRIST'S SASH CORD FASTENER.

wardly tapering hollow thimbles of the holders, which connect by arms with the shanks of the holders so that a space is provided between the thimbles and shanks to allow the ends of the cords to be drawn downward for taking up the slack at any time. The ends of the cords are knotted or frayed and tied with twine to prevent them from being pulled through the thimbles. When the stop head of the window frame is removed, the cord holders may be readily taken out, and as they are too large to run through the sash pulleys, they form stops which prevent the cords from passing into the weight boxes. The plates and cord holders at each side of the sash may be connected and disconnected by any ordinary person without using tools of any kind, and the connection of the cords with the sashes when the cord holders are set in the plates is in every way secure.

CARPET STRETCHER.

By means of the simple and inexpensive device herewith illustrated, one person can easily stretch a carpet of any size. A rack sliding in a box engages with a cog wheel mounted on a shaft carrying a lever provided with a hook pawl engaging with the teeth of the wheel. On the outer end of the rack a plate is held by a screw passing through a longitudinal slot. Pivoted on this plate is a top clamping plate, the rear end of which rests above a head formed on the end of the rack. Pivoted on the end of the box is a pawl, which locks and holds the rack in place after the carpet has been



DU SOUCHET'S CARPET STRETCHER.

stretched. The construction of the stretcher is clearly shown in Fig. 2.

Extending from the rear end of the box to the opposite wall is a brace made of two pieces of wood, of any desired length, either end of which will fit in the box. These pieces are so held together at each end by bands that they will slide past each other, and may be stopped at any place by means of a thumbscrew in one of the bands. The rod is fastened in the end of the box with a pin through the box and rod. By means of this

extension bar the stretcher may be braced against the opposite wall, no matter what the dimensions of the room may be. The edge of the carpet is held between the clamping plates, and is stretched by the outward movement of the rack, which is effected through the lever and pawl acting on the cog wheel. As the carpet offers some resistance, the bottom clamping plate will be moved slightly in the opposite direction until the end of the slot strikes the screw. This movement presses the head on the end of the rack against the under side of the inner end of the top plate, the outer end of which is pressed closely against the carpet, which is thus held securely. This carpet stretcher was designed by Mr. O. C. Du Souchet, of Warsaw, Ill.

Waste Heat from Furnace Chimneys.

The *American Engineer* says that one of the favorite schemes of inventors is to utilize the waste heat from boiler furnace chimneys before it leaves the chimney. Inasmuch as the heat of the gases must at least equal the temperature of the steam in the boiler, the editor concludes that only to be waste heat which corresponds to the excess of the temperature of the gases above that of the steam. In boilers properly set, with proper chimney and flue proportions, and working with economy, this excess of temperature is probably measured by 50° Fahr. Since the efficiency of good boilers equals almost 70 per cent, and this implies, besides other losses, the escape of gases at say 400° Fahr., it becomes at once apparent that a reduction of this temperature to say 350° Fahr., for instance, by abstracting the 50° Fahr. for heating exhaust steam, cannot signify a very great saving.

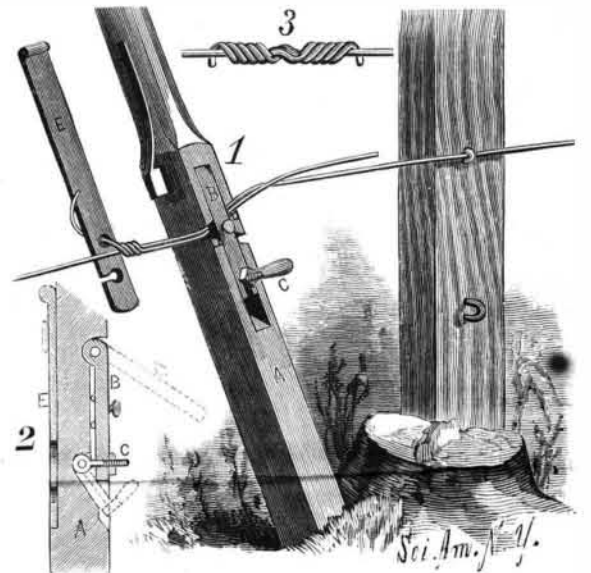
Still, it is the most common thing to hear of the placing of devices, such as coils of pipes through which exhaust steam travels, over the top of the boiler to utilize these 50° of heat, and marvelous economy is claimed as the result. Considering the fact that many boiler manufacturers have begun to doubt the efficiency of the return of the gases (of reduced temperature after passing through the tubes) over the top of the boiler, it is scarcely probable that there is much economy in not only doing this, but allowing in addition sufficient space for the refrigerating coils of pipe. The latter, it is true, may abstract some heat from the gases, but since they obstruct and cause frictional eddies, their employment necessitates not only larger flue but also greater chimney area. On the whole, it is exceedingly doubtful if the use of coils for heating exhaust steam in this way contributes to true economy and is good practice when the chimney is properly proportioned. Of course where the gases pass off at much higher than normal temperature, and the chimneys have been built larger than necessary or desirable, such expedients may contribute to economical working, though as a rule correction of the blunder proves the most effective remedy. A similar plan of extending the rear end of the boiler of locomotives to accommodate coils containing feed water has been proposed recently, but the obstruction proved so great as to make the attainment of proper draughts very doubtful. A further objection to this class of devices is that in a short time the carbonaceous deposits on the coils make the heaters themselves as such ineffective.

CABLE RAILWAY GRIP.

Passing through lugs upon the adjoining faces of the two jaws of the grip, and through the enlarged lower end of a heavy vertically arranged bar, is a strong pivot upon which both jaws are free to swing while held securely to the bar. At the lower end of the inner faces both jaws are provided with series of rollers (Fig. 3), which are journaled by eccentrically placed end pins in suitable bearings, so as to range vertically and at right angles with the pivot pin. At the lower end of the bar is a roller, which holds the cable down in place between the opposite grip rollers, should the cable tend to rise. Sliding upon the bar is a wedge connected by rods at each side with a head frame, also sliding on the bar. The upper ends of the side rods are threaded to receive bolts above and below the frame, so that the wedge may be adjusted vertically with relation to the gripping jaws and the lever, as may be required. The end of the lever is connected with the bar, and a link connects the lever with the frame, so that as the lever is moved the wedge is correspondingly moved to close the jaws, and cause the opposite rollers to grip the cable and allow the jaws to open to release the cable. A downward movement of the lever and wedge forces the opposite rollers toward each other to grip the cable; as the wedge is lifted, springs force the jaws apart. One of the upper corners of the bar is prolonged and slotted for the entrance of the lever to lock it sidewise for greater security when lowered. The grip is held in any suitable manner to the frame of the car. It is evident that as the opposite rollers are tightened upon the moving cable by the action of the wedge, they will be turned by the cable on their eccentrically placed pivots, and so have a cam-like action on the cable to tighten on it gradually and without violent shocks. Further particulars regarding this grip may be obtained from the inventor, Mr. John H. Parkinson, of Bodie, Cal.

WIRE FENCE TOOL.

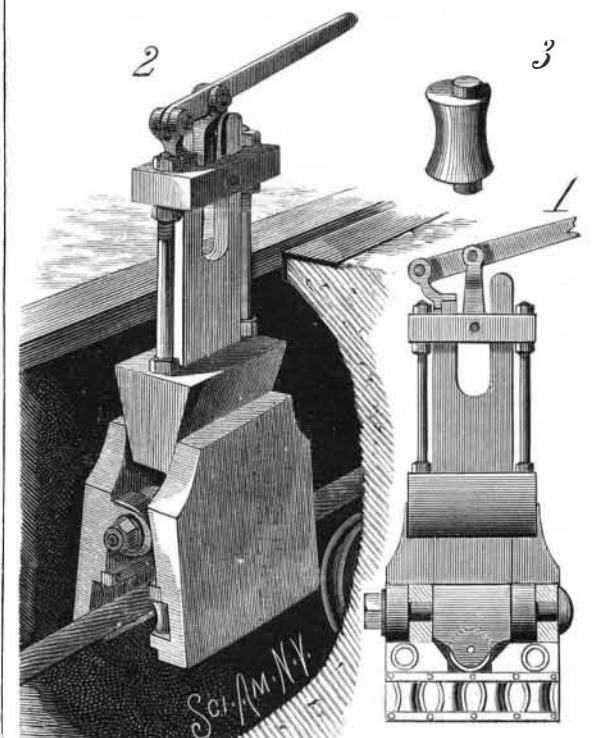
The simple, efficient, and inexpensive tool herewith illustrated is for use in stretching wires along the posts in setting up wire fences. The front side of the stock, A, has formed in it a recess, at one end of which is pivoted a vise jaw, B, which is slotted at its other end for the passage of the screw pin, C. The stock is slotted to allow the screw pin to swing back clear of the end of the jaw, to allow the latter to be opened to permit the wire to be passed between the jaw and stock. On the screw pin is a handle nut by which the jaw is brought down tightly to hold the fence wire. About



BARRON'S WIRE FENCE TOOL.

beneath the center of the jaw a <-shaped groove is cut in the face of the stock, so that when the wire is to be drawn, as in Fig. 1, it will be passed into the upper half of the groove, so as to draw over the corner of this part; when the wire is to be stretched the other way, it is passed into the lower half of the groove, to draw over the lower corner at the opposite edge of the stock. To protect the tool and insure a good hold, these corners are provided with wear plates. With these reversely inclined grooves there is no danger of the wire slipping, and when one of the wires of the fence has been stretched, the next wire can be stretched in the opposite direction, thus permitting the work to be carried on from both directions, thereby saving time and preventing the loosening of the posts by the pull of the wires when all are drawn in one direction.

The cutter, D, attached to the stock, normally springs out from the side sufficiently to admit the wire between its edge and a suitable plate let into the stock, so that a blow of a hammer on the cutter head will cut off the wire. The splicing bar, E, is held in a socket of the stock as shown in Fig. 2. When in use, one end of the wires is passed through the hole, and the bar placed



PARKINSON'S CABLE RAILWAY GRIP.

against the wire (Fig. 1), and turned to coil the end, the wires being held meanwhile by the vise jaw. When that coil is finished, the end of the wire around which it is made is twisted around the other wire to form the completed splice, Fig. 3, the wires being shifted in the vise and the bar worked at the other side of the stock while making the second coil. The hole having a side opening is used with barbed wires.

This invention has been patented by Mr. J. B. Barron, P. O. box 131, Topsham, Maine.