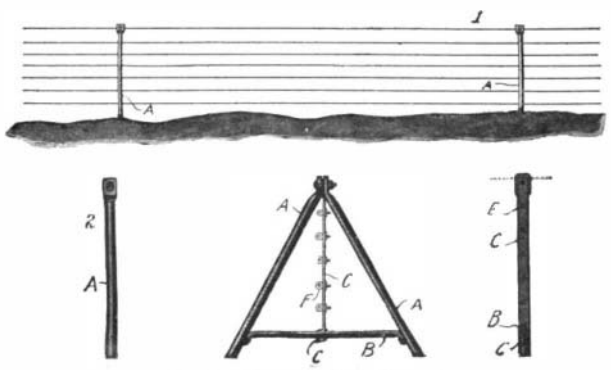
Patent Department

PORTABLE METAL FENCE.

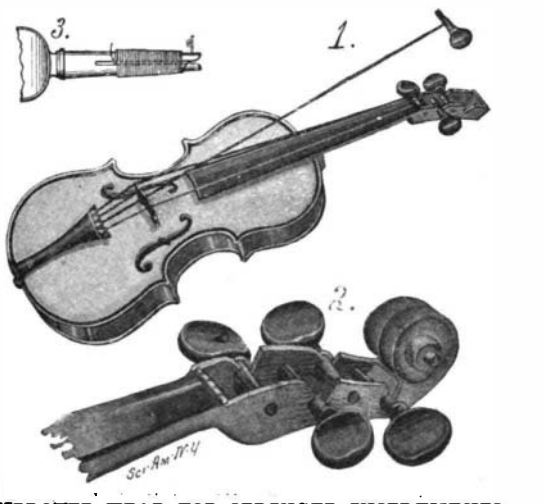
The growing scarcity of timber demands economy in its use, and the employment of substitutes for wood wherever possible. This is one of the reasons why wooden fences are giving way to metal constructions. Other and more potent reasons are because the metal fence is stronger, less liable to deteriorate, less cumbersome, and generally more ornate. One of the latest constructions, which is very interesting, is pictured in the accompanying engraving. This fence is unique in that it is portable. The fence posts are built up into an A-shaped form consisting of two side members *A* of metal tubing, which are flattened at their upper ends and bolted together, while their lower ends are spread apart by a member *B*. A central plate *C* is fastened between the upper ends of the members *A*, and is secured to the member *B* by means of a wire. This plate *C* is provided with a number of openings *E* to receive the eyebolts *F*. The fence wire is strung through these eyebolts, the uppermost wire resting on top of the plate *C* in the slot formed between the members *A*. If desired, the eyebolts *F* may be dispensed with, and the wires can then be strung through the apertures *E*. As the posts are merely set on the ground and not imbedded in it, they may be moved to any desired position. The inventor of this fence has called our attention to the fact that the ground on each side of an ordinary fixed fence becomes a breeding place for weeds, briers, and undesirable grasses, whose seeds ripen and are spread broadcast over the adjoining land. The portable fence, however, may be moved to one side when the field is being plowed, so that every foot of land may be cultivated. Mr. Calvin Wilson of 1004 Park Avenue, Richmond, Va., has secured a patent on this portable fence.



PORTABLE METAL FENCE.

IMPROVED HEAD FOR STRINGED MUSICAL INSTRUMENTS.

The object of the improved head for stringed musical instruments which is pictured in the accompanying engraving is to enable the player to string the instrument when necessary without loss of time. The pegs on which the strings are tightened may be removed from or replaced in the head without detaching the string and in case of a string breaking a new string may quickly be applied. It will be observed that the head is in the form of a box with holes passing through the sides to receive the pegs, but notches are cut through the sides, leading to alternate holes. The string is knotted at one end in the usual manner so that it may be readily caught in the tailpiece while the opposite end is fitted into a slot in the peg and is wound thereon. The peg is seated in the head by inserting its inner end into the hole and lowering it bodily through the notch into the opposite hole. The string is then tightened until it has been properly tuned. Thereupon the peg is jammed into the hole so as to prevent it from turning. It is the object of the inventor to provide a number of pegs each wrapped with a string so that in case of a string breaking the old peg may be lifted out of the head and the new string and peg inserted in its place. In this way the operation of replacing a string will consume a minimum time and will not seriously interrupt the playing, particularly in an orchestral production. The actual time consumed in taking out a broken string, putting in a new one, and tuning it is 15 seconds. The operation can be performed in the dark. The holes and the notches for the pegs are tapered to correspond with the taper of the peg so that when the latter is tightened to a sufficient degree and jammed into the hole it will be held in place with the requisite friction. The construction does not limit the head to any particular form. It may be made plain as in Fig. 1, or with the usual fancy scroll as indicated in Fig. 2. Mr. Arthur S. Leslie, of Sapperton, British Columbia, Canada, is the inventor of this new form of head for musical instruments.



IMPROVED HEAD FOR STRINGED INSTRUMENTS.

New Use of Paper.

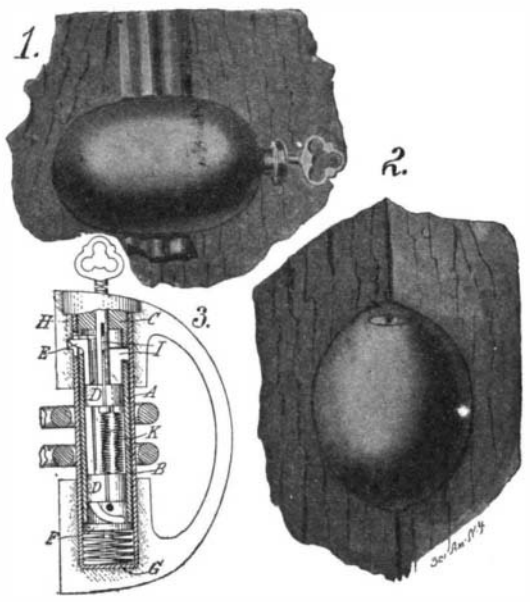
Germany manufactures annually 425,000 tons of paper, England 260.000 tons, France 190,000 tons, Austria 155,000 tons, and Italy 120,000 tons. But the United States makes and uses more paper than all Europe, the annual production amounting to 1,330,000 tons. A French journal mentions the following novel uses of paper in America:

Roofs of paper and compressed wood pulp have proven successful. A Chicago firm makes paper garments which are so light, flexible, and convenient that they are largely used in hospitals. The paper is made of the bark of the paper mulberry tree and is tub-sized and finely craped. Several sheets are superposed and sewn together. The garments have narrow woolen bindings, buttons, buttonholes and other fastenings. Paper cigars are made by steeping paper pulp for ten days in a decoction of cigar clippings, passing it between cylinders and rolling the sheets into the form of a cigar.

Paper bottles and grain bags are made in Philadelphia. A recent invention is the paper horseshoe which, according to the inventor, is more durable as well as lighter than the iron shoe and eliminates all danger of injury to the hoof as it is attached, not by nails, but by cement. Two German engineers have invented a sort of reinforced paper, composed of paper pulp, canvas, linen and raw silk, reinforced with steel wire. The new material is light, waterproof, fireproof and suitable for the construction of vessels, including warships, automobiles, and other vehicles, for railways, street pavements, and many other uses.

PADLOCK WITH INCASED BOLT.

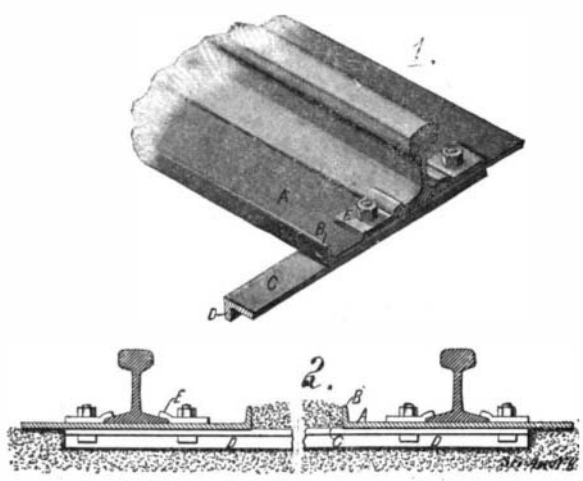
A padlock as commonly made offers but slight security against thieves. The lock itself may be of most elaborate construction, so that it is well nigh impossible to pick it, but that matters little when the door can be opened without touching the lock, merely by filing or sawing off one of the screw eyes through which the bolt is passed. The weakness of the padlock lies in the fact that the screw eyes and bolt are unprotected. This weakness is very cleverly overcome in the lock herewith illustrated by having the casing of the lock extend over the bolt and screw eyes, completely inclosing them. The casing is made in two forms, one for double doors, which is of hemispheroidal shape (Fig. 1), and the other for single doors, which has the form of a section of a sphere (Fig. 2). The screw eyes with the bolt passing through them are shown in section in Fig. 3. It will be observed that the casing fits very snugly against the doors, and its form is such as to offer very little grip for a tool, should anyone attempt to force the lock. The locking mechanism is contained in the bolt, as shown in sectional view, Fig. 3. The bolt comprises a cylindrical barrel *A*, into which is fitted the sleeve *B*, the latter being formed with a head *C*, through which the key is inserted. Within the sleeve are the tumblers and locking dog mounted in a pair of heads *D*, which are secured to a central stem. The locking dog *E* is fulcrumed in the lower head *D*, and is provided with a curved extension against which the plate *F* is pressed by the coil spring *G*. The spring *G* causes the upper end of the dog *E* to project through an opening in sleeve *B* and barrel *A* and to enter a recess in the casing of the lock, thereby retaining the bolt in the locked position. To unlock the bolt, it is necessary to turn the heads *D* within the sleeve *B*, so that the dog will be brought into register with the slot indicated by dotted lines at *H*, and the spring *G* will then force out the sleeve with the mechanism it contains to the position shown in Fig. 1. The bolt may then be drawn out by taking hold of the projecting sleeve. The tumblers *I*, which are mounted to slide in heads *D*, enter bayonet slots in the sleeve *B*, and normally prevent the dog from turning until they have been forced down against the pressure of springs *K* sufficiently to enter the lateral extensions of the bayonet slots. The barrel of the key is slotted, so as to press the several tumblers to exactly the required extent. Then when the key is turned, the tumblers and dog will be turned. Any number of combinations may be had by changing the depth of the bayonet slots. If one so desires, he may change the combination of his own lock by taking out the tumblers from their seats within the heads *D*, and transposing them from one position to another. Of course, in such a case a new key would be required, so as to depress the tumblers to the proper degree. The inventor of this improved padlock is Mr. Raffaele Feola, 40 Stuyvesant Street, New York city.



PADLOCK WITH INCASED BOLT.

METAL RAIL BASE AND CROSS TIE FOR RAILWAY TRACKS.

Time was when railroad tracks consisted of wooden rails faced with a strip of sheet metal. Such construction seems absurd to us now. No doubt the time will come when our present track construction, in which the rails are secured to wooden ties, will seem as absurd. The objections to wooden ties are many, and have so often been referred to in these columns, that it is not necessary to enumerate them now. A substitute for the wooden-tie construction is illustrated in the accompanying engraving. The rails are laid on metal base plates indicated at *A*. Each base plate is provided with a flange along its inner edge, which is denoted by the letter *B*. It will be observed that these base plates extend longitudinally under the rails, and form a continuous support for them. At frequent intervals the base plates are connected by means of cross ties *C*, which are also provided with a flange along one edge. This flange extends downward, as indicated at *D*, and is imbedded in the ballast of the roadbed so as to provide an anchor for the tie. The rails are secured to the base plates and ties by means of clamps *E*, which are fastened in place with bolts. The upturned flanges *B*, of the base plates afford abutments, against which the ballast is packed. Thus they guard against lateral movement or distortion of the track, while the flanges *D*, of the ties prevent longitudinal movement or creeping. The flanges *D*, also serve as guard rails to catch and retain the wheels of a derailed train or car. The base plate provides a smooth surface for the derailed car, obviating injury or shock which results from a car bumping over the ordinary ties. The continuous bearing for the rails provided by the base plates prevents low joints with the resultant hammering, which soon wears out the track. Messrs. Murray A. Temple and Harry C. Temple of Berlin Heights, Ohio, have just secured a patent on this tie construction.



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