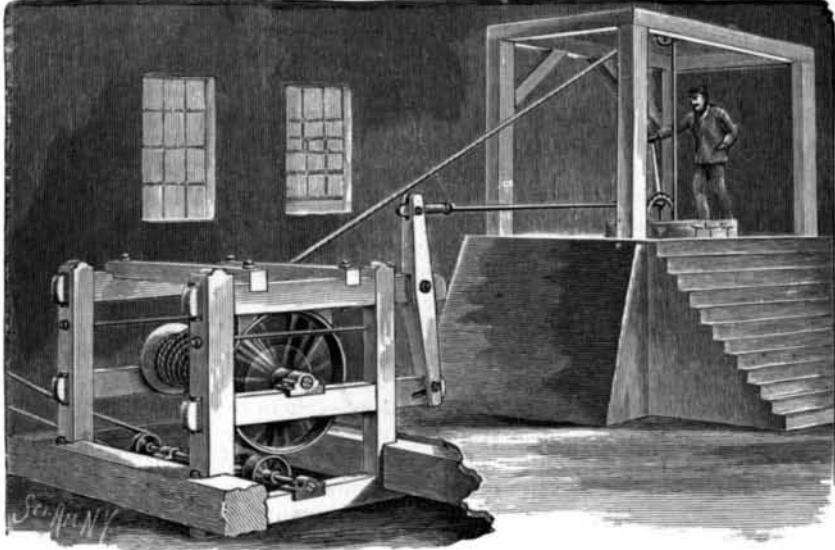


AN IMPROVED HOIST.

A hoisting apparatus adapted to raise material from a mine shaft and for other purposes is shown in the accompanying illustration, and forms the subject of a patent issued to Mr. Frank A. Robitaille, of Helena, Montana. Three of the side bars of the drum-supporting frame are held in position by keys, while

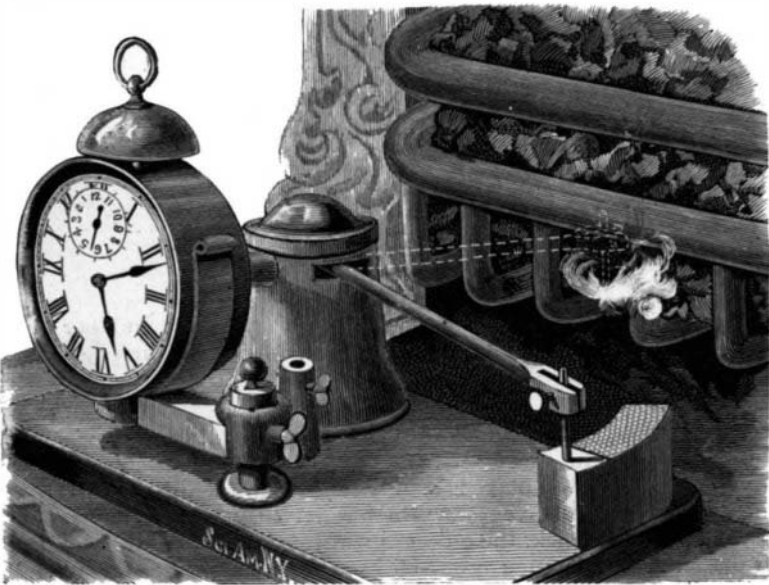


ROBITAILLE'S HOIST.

the third side bar, in which is journaled one end of the drum shaft, is pivoted in one of the standards of the frame, its other end being capable of a limited vertical movement in the opposite standard. In the lower part of the frame is a countershaft, on one end of which is a driving pulley, receiving power from any convenient source, and near the other end of the shaft is a friction pulley adapted to bear upon the face of a larger pulley directly above on the drum shaft. To one of the top side bars of the frame is pivoted a vertical lever, the lower end of which has a pivotal connection with the outer end of the pivoted side bar in which one end of the drum shaft is journaled, such pivotal connection being made through a slot in the side bar, so that when the lever is moved forward or backward the side bar, with one end of the drum shaft, will be raised or lowered. To the under side of the top side bar, just above the large pulley on the drum shaft, is attached a curved brake shoe, by raising the pulley against which the rotation of the shaft may be stopped entirely, or its speed regulated as desired. The upper end of the vertical lever is connected by a rod to a lever pivoted at the mouth of the shaft, the latter lever having a suitable latch adapted to engage a notch in a rack. The rope attached to the drum in the drum-supporting frame passes over a pulley in the top of the frame at the mouth of the shaft, and is then attached to a bucket or cage. With this construction the operator at the mouth of the shaft can, by means of the hand lever, throw the large pulley on one end of the drum shaft into close contact with the friction pulley on the power shaft, to wind the rope upon the drum, or can, by moving the lever in the opposite direction, break such contact, and allow the weight of the bucket as it descends to unwind the rope on the drum, the latter movement being also controlled by pushing the lever still further, to bring the large wheel into contact with the brake shoe.

A DEVICE FOR AUTOMATICALLY LIGHTING FIRES.

The accompanying illustration represents a portable device, readily attachable to any small alarm clock, for automatically lighting a fire in a stove or grate at any predetermined moment of time. The dotted lines in the picture show the fire being started at twelve minutes past five in the morning, thus indicating how



BORCHERS' AUTOMATIC FIRE LIGHTER.

a comfortable "last nap" may be taken while the water is being heated for the coffee, or the room warmed. The invention has been patented by Mr. Henry W. Borchers, of Albina, Oregon. Upon the base plate is a post which may be adjusted as to its distance to or from the grate, and on this post an arm is adjustably held by means of a hollow hub and thumb screw, the outer end of the arm having a spring clasp adapted to embrace the cylindrical body of a portable alarm clock. Adjacent to the clock, upon the base plate, is a hollow column in which is an upright shaft surrounded by a spiral spring, and having near its top a locking disk having on one edge a toe adapted to abut against the upturned end of a curved locking spring, the other end of which is attached to the side of the upright column. An arm from the locking disk projects laterally through a horizontal slot in the wall of the column, the outer end of the arm having a clamp in which a match may be held as it is drawn over a scratch block. A sleeve in the side of the column nearest the clock

supports a rock shaft, on the inner end of which is a lug adapted to depress the locking spring and release the toe of the locking disk, the outer end of the shaft being slotted to receive a tongue on the outwardly projecting end of the alarm mechanism of the clock, which may be of any approved construction. The tongue and slotted connection of the alarm mechanism of the clock with the rock shaft of the lighter is effected by simply sliding the shafts together, when, the alarm being put in motion, the locking disk will be released, and the arm carrying the match be made to swing around by the tension of the coiled spring, as shown in dotted lines in the illustration. When the lighter is to be used where there is no convenient place on which to rest the bed plate, a stand is provided having an upright rod adapted to engage an upwardly projecting boss on the bed plate, the device being then firmly held at the proper height by a thumb screw.

AN IMPROVED HAT HOLDER.

A device for supporting head gear, such as hats and bonnets, whereby they will be firmly held without crushing or injury, while traveling, etc., whether in a trunk, box, or other receptacle, or placed in a show window or on a counter for exhibition, is represented in the accompanying illustration, and is the invention of Mrs. D. M. Fuller, of No. 104 Vanderbilt Avenue, Brooklyn, N. Y. The invention has been patented in the United States, Canada, England, and France. The various figures illustrate the ready adaptation of the device to use in various positions and adjustment to hats of different sizes and kinds. The body of the device consists of a pedestal having a disk-like cap covered with any soft material, such as velvet, felt, etc., while in the enlarged lower end of the pedestal is a projecting pin or bolt, preferably adapted to receive a nut and washer, for attaching the pedestal to the bottom wall of a receptacle. To hold a bonnet on this pedestal, as shown in Fig. 1, a spring wire clamp is employed, one end of the wire of such clamp being connected with the pedestal just below its cap, while the end of the other arm of the clamp is covered with a cap of soft material. The clamp is formed of a single piece of wire, so bent as to provide a catch facilitating the ready engagement or disengagement of the clamp.

The manner of securing a gentleman's high hat on the holder is shown in Fig. 3, spring arms being attached to the pedestal near its lower end by means of a thumb screw, and the outer ends of the arms being provided with a pad of the proper shape to fit over and clasp the edges of the rim on both sides. In Fig. 2 is shown a hat held on the pedestal by means of a spring arm held in a bracket attached to a side support. It will be readily seen that the device may be expeditiously and conveniently applied to any receptacle, and is capable of adaptation to various positions and adjustment to hats of different sizes.

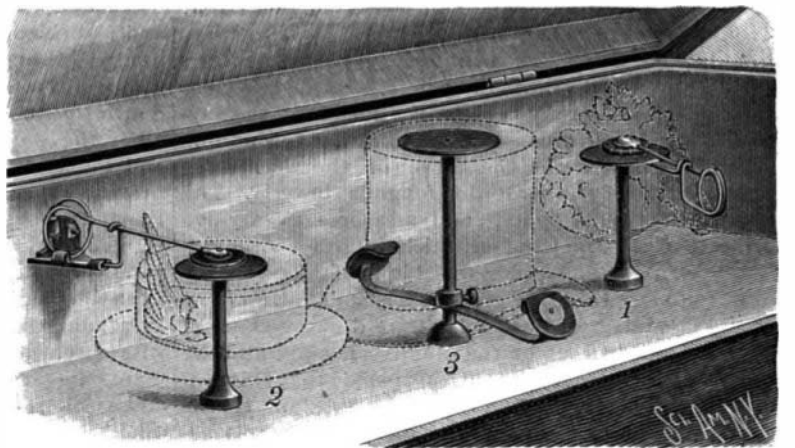
AN IMPROVED CAN OPENER.

The accompanying illustration represents a simple and effective implement for readily cutting the head of a sheet metal can nearly free from the side wall, producing a lid but slightly joined to the can by a narrow strip of metal, and which can be readily opened or removed to afford access to the contents. It has been patented by Mr. Edward K. Boothby, of Portland, Me. Two limbs having handles are pivoted together,



BOOTHBY'S CAN OPENER.

and on one of the limbs, at a suitable distance from the pivot center, are two laterally extending arms having pointed tongs adapted for insertion in the edge of the can top. On the other limb is a curved cutting blade, at such distance from the pivotal point that when the handle is swung around, it will describe a circle near the edge of the can. The limbs are pivoted together by means of a thumb screw, and have different apertures whereby the pivotal point may be changed to accommodate the implement to larger or smaller cans. This implement does not make the rough edges produced by the ordinary can opener, but rapidly effects a clean, smooth cut in the lid of a can of

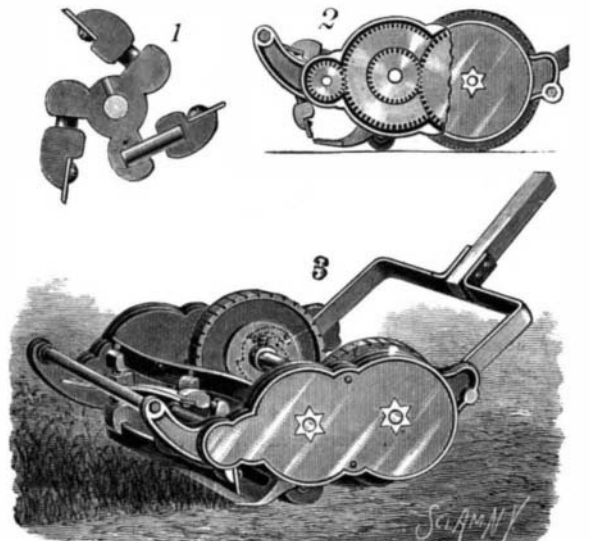


FULLER'S HAT HOLDER.

any size. For further information relative to the invention address Messrs. Boothby & Co., Portland, Me.

AN IMPROVED LAWN MOWER.

The illustration represents a machine patented by Mr. Louis Meyer, of Utica, N. Y., in which the cutter knives are of the usual twisted form, to give to their beveled cutting edges a shearing action when the cutter head blocks and attached knives are rotated by the gearing whose prime movers are the ground wheels. Fig. 1 is a sectional view of one of the knife-supporting heads, and Fig. 2 is a side elevation of the machine with the cover of the multiplying gear case broken away, Fig. 3 showing the complete machine in perspective. The trefoil form of the cutter head blocks,



MEYER'S LAWN MOWER.