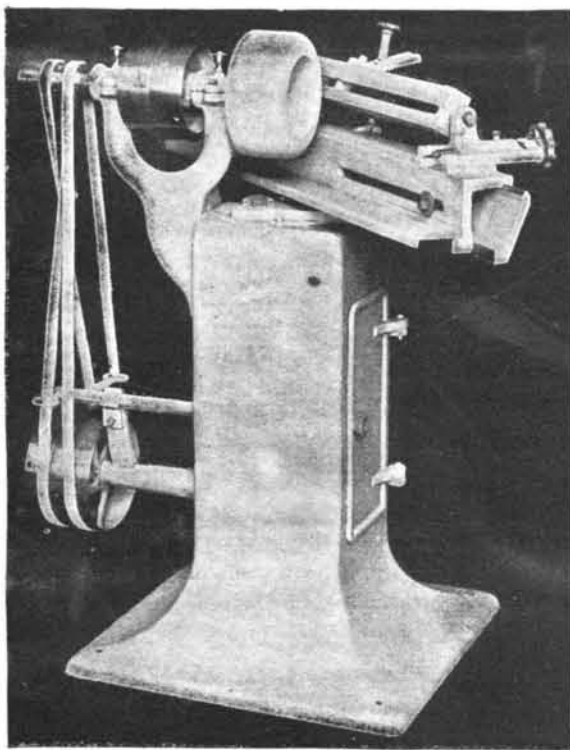


## AN AUTOMATIC KNIFE GRINDER.

The knife grinder shown in the illustration, for which a patent has been applied for, has many admirable points recommending it for adoption in all well appointed mills and factories, chief among which is the fact that it is readily adjustable for flat or concave grinding. By slacking one bolt the slide or bed can be set at different angles before the emery wheel, which has a flat face with the outer corner rounded off.

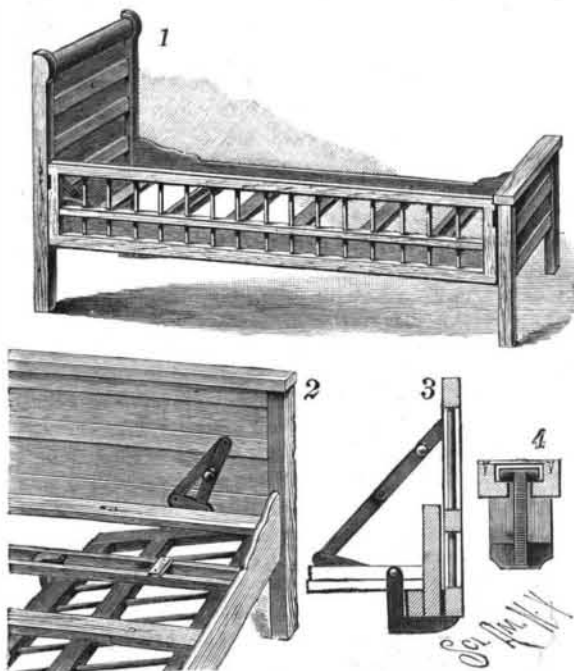


THE BUFFALO PLANER KNIFE GRINDER.

Setting the bed at a right angle to the wheel spindle, the knife travels back and forth against the flat face of the wheel and is ground a flat bevel, while, when the bed is set at another angle, the rounded corner of the wheel does the grinding, making a concave bevel. In this way a flat, stout edge is readily obtained for rough work, and a thin concave edge for fine work. The shifting of the belts that drive the bed back and forth is effected by bell cranks inside the pedestal, the arrangement being such that the bed can be adjusted at different angles without affecting the belt-shifting operation, and permitting the swinging of the bed while the machine is in motion. The machine, after starting, requires little or no attention, the carriage having an even back and forth traverse, and reversing without noise or jar. The shafts are steel and run in babbitt boxes, and all the work is done by first-class workmen. These machines are manufactured by Messrs. Samuel C. Rogers & Co., of No. 27 Lock St., Buffalo, N. Y.

## AN ATTACHMENT FOR BEDS.

A safety device to prevent children from falling out of an ordinary bed is shown in the picture, the device being readily removed from the side of and swung



WIERENGA'S ATTACHMENT FOR BEDS.

under the bed when not in use. The improvement has been patented by Mr. A. C. Wierenga, of Zeeland, Mich. Fig. 1 represents the attachment in position at the side of the bed, and in Fig. 2 it is seen swung below the bed slats. The side frame is held to the slats by two or more hangers, which form an adjustable connection of the frame with the bedstead. The hangers are somewhat L-shaped, Fig. 4 showing a plan view, while in Fig. 3 may be seen a side view, and they each

have on one limb cross pins which engage and slide freely in a slot in the top side of a bed slat. The other limb of the hanger is rigidly connected with the bottom rail of the frame. On the headboard and footboard of the bedstead are folding braces to support the frame at the ends when it is in use as a guard, as shown in Fig. 3, the end link of each brace hooking on a stud on each end of the frame. When the frame is not in use, and is swung below the bed slats, it is held in a nearly horizontal position by a simple support attached to the bottom of the bed side rail, the attachment being then completely concealed from view.

## New Solder for Aluminum.

Aluminum is soldered with the alloy given below, with the ordinary tinman's soldering iron, or with the blowpipe. It does not oxidize or discolor the metal. The following solders are employed for aluminum: No. 1—Pure tin; melts at 250°. No. 2—Pure tin 1,000 parts, fine lead 50 parts; melts at from 280° to 300°. No. 3—Pure tin 1,000 parts, pure zinc 50 parts; melts at from 280° to 300°. These three solders may be used in the manufacture of aluminum trinkets. For the following two solders the soldering iron should be made of pure nickel. No. 4—Pure tin 1,000 parts, pure copper 10 to 15 parts; melts at from 350° to 450°. No. 5—Pure tin 1,000 parts, pure nickel 15 parts; melts at from 350° to 450°. No. 6—Pure tin 900 parts, pure copper 100 parts, bismuth 2 to 3 parts; melts at from 350° to 450°, and is recommended for soldering aluminum bronze.—*J. Novel, Chem. News.*

## AN IMPROVED SLEEPING CAR.

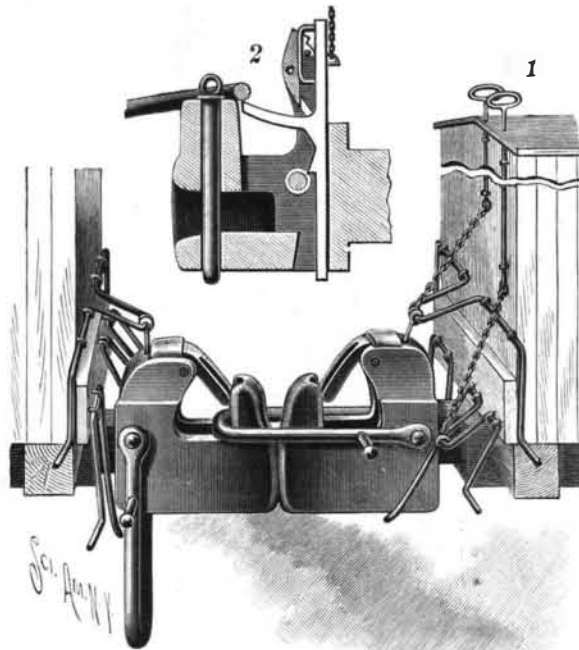
In the car shown in the illustration, one or both berths may be elevated to the roof of the car, and there held until needed, giving a maximum of head room over the seats, while the lower berth may be elevated from its support upon the seats to a vertical position in engagement with the sides of the car, enabling the seats to be used in dressing, and affording room for convenient movement. The car also presents various other novel features. It forms the subject of a patent issued to Mr. William Sneckner, Hotel Winthrop, 125th Street and Seventh Avenue, New York City. Over each lower fixed partition separating the sections is a fixed partition secured to the sides and roof, the latter partition holding a sliding panel which is concealed in the lower partition when the car is in use as a day coach. The panels are moved by attached cables carried up over pulleys near the top of the car, and in a chamber formed between the outer and inner walls, a weight being secured to the free end of each cable. By the aid of the weights the panels are readily carried up, to render each section private. A fixed curtain at the top, in connection with the upper partition, forms a compartment in which both the upper and lower berths are located when not in use. The lower berth when in use rests upon two seats, but the upper berth is suspended by four cables, one at each corner, the cables being carried up over pulleys in the upper chamber, and thence to a cable connection with a drum upon a shaft adapted to be rotated by means of a crank. By means of a novel form of latch bars the lower berth may be readily connected with the upper one, to be carried within the upper compartment of its section when not in use. The front sections of the seats are hinged at their lower edges to drop downward, and the seat bottoms are removable, and when a lower berth is to be made up the seat bottom is placed in the space normally beneath the seat, and the hinged back of the seat is let down, presenting a table-like surface upon which the lower berth is supported. To hold the lower berth up out of the way, and thus afford room for moving about, a cable having a weight at its outer end is passed through an opening in the side wall of each section, near the end wall, the cable being passed over pulleys, and having at its inner end a hook. By attaching these hooks to pins at each end of the lower berth, the latter is readily raised to and held in a vertical position, as shown in the representation of one of the sections.

## Utilization of Molasses.

Hitherto it has been found impossible to extract the crystallizable saccharose from molasses, because the substances associated with it prevented crystallization. Messrs. Scheering have now found that by converting it into dextrose and levulose by inversion and then heating with lime, the calcium compound of levulose obtained by Dubrunfaut from pure invert sugar may be separated from the molasses in a state of perfect purity. By decomposing this calcium compound with carbonic acid a pure levulose solution may then be obtained, the whole of the coloring material and other adventitious substances being retained with the lime compound of dextrose.—*Pharm. Centralb.*

## AN IMPROVED CAR COUPLING.

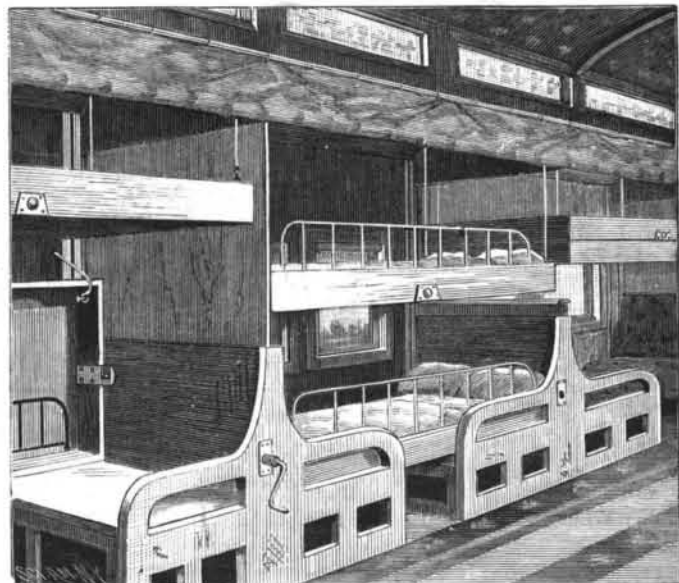
By means of the coupling shown in the illustration, the cars upon which it is applied will be automatically coupled as they come together, and may be readily uncoupled from either the sides or top of a car. The improvement has been patented by Mr. J. Lawrence Smith, of Ogden, Utah Ter. Fig. 1 shows two cars coupled by the device. The drawhead is supported in the usual manner, and is adapted to slide in the car end, and on its front end is an upwardly projecting limb, rearward of which are two vertical flanges on the drawhead body, within which is pivoted a guard plate.



SMITH'S CAR COUPLING.

Upon the exterior of the flanges a bail coupling link is pivoted by its ends, the bow portion being adapted to engage the forward limb of the coupling of an approaching car. The guard plate is vertically slotted at its rear, a link-lifter bar working through the slot and through a slot in the drawhead, and a forwardly projecting arm on the lifter bar is connected with a coupling pin, adapted for use with an ordinary coupling link. The lifter bar is also adapted to engage the guard plate, rocking it to allow a coupled engagement of the limb with the bail loop of an approaching coupling, so that the coupling may be effected automatically when the cars come together.

A preferred means of lifting the coupling link into elevated position, ready to fall forward and engage with another coupler, is by means of rockshafts on the end of the car, an arm on the shaft engaging a stud on the link. The shafts may be operated by a rod extending to the top of the car or by a crank at the side, and another rock shaft is similarly operated to uncouple the link. For automatic coupling the link is raised to a virtually upright position, inclined slightly backward, and the shock of the cars coming together throws the link forward over the draft limb of the other coupling, the lifter bar at the same time dropping and throwing the guard plate over the link. In Fig. 2 is shown a modified form of the coupling, the change consisting



SNECKNER'S SLEEPING CAR.

partly in the formation of the forward limb, down through which passes the coupling pin. The coupling link is also somewhat differently formed to facilitate the coupling together of cars of different heights. Further information relative to this improvement may be obtained by addressing the J. Lawrence Smith Car Coupling Co., J. H. MacMillan, Secretary, Ogden, Utah Ter.