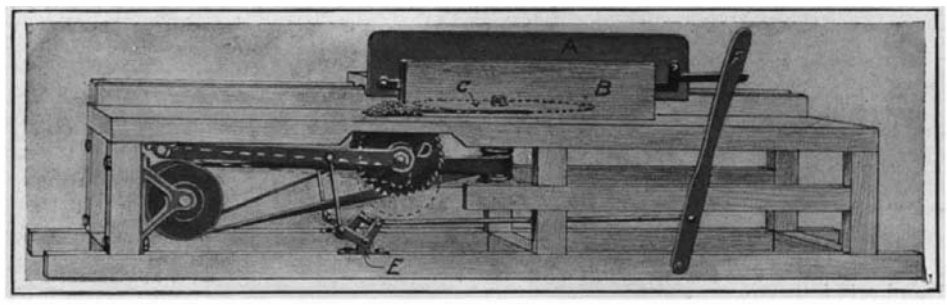
of Columbus, Ohio, resolved to make some experiments along this line himself. With his mother's aid alone, he designed and built two airships, the last a slight improvement over the first. The boy's mother believed him too young to attempt to fly with a powerful motor, and he began on the idea of a foot-power machine. He calls it a "sky cycle." He secured a silk gas bag having much the form of a huge lemon, 32 feet long and 15 feet through. For this he designed and personally made a 4-inch mesh net. The bag he fills with hydrogen gas produced with home-made generators. Taking an ordinary bicycle, he removed the wheels and the forks, leaving only a triangular frame supporting the seat, the handle-bars, and the pedals and sprocket wheel. The latter he geared to rotate a two-bladed silk propeller. Behind the framework he placed a silk rudder with a bamboo frame, manipulated by means of cords running forward to the handle bars. The main frame of the airship is built of slender spruce rods. On this frame the mechanism is supported, and to it the gas bag is attached by means of the net. Young Dixon has succeeded in making successful ascents with his "sky cycle."

AN IMPROVED LATH CUTTER.

The accompanying engraving illustrates a machine adapted for cutting stock of a regular shape into

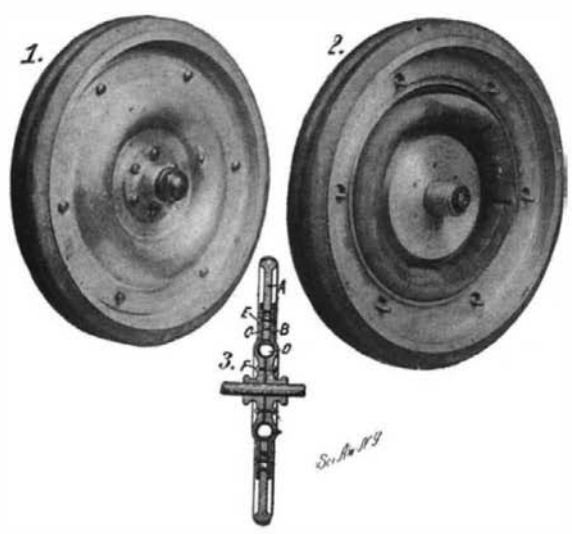


AN IMPROVED MACHINE FOR CUTTING LATHS.

laths. Briefly stated, the machine comprises a single horizontal saw adapted to cut a slab from the stock, and a series of vertical saws, which subsequently cut the slab vertically into a number of laths of the proper thickness. The stock may be of any irregular shape, provided one face is flat. The machine is formed with a carriage *A*, mounted to travel on guides over the saws. The stock *B* is supported by this carriage between a pair of jaws. One of these jaws is fixed, and the other, which is attached to a hand lever, is normally pressed against the stock by means of a spring. The horizontal saw is shown at *C*. This is set at the required height above the table of the machine, so as to cut the stock into slabs of a thickness equal to the width of the laths. Immediately back of the saw *C* is a gang of saws *D*, which operate on the slab as it issues under the horizontal saw *C*. The saws *D* are keyed to a common spindle mounted in a hinged frame, so that they may be moved up or down, according to the thickness of the slab on which they are adapted to operate. The hinged frame is connected by links to a pair of bell-crank levers *E*, which, in turn, are connected to a hand lever *F*. By moving this hand lever the saws may be raised or lowered, as desired. It will be understood that in feeding the stock to the saws, the carriage is moved by hand along the guides. A patent on this improved lath cutter has recently been granted to Mr. Herschel Oldham, of Deland, Volusia County, Fla.

IMPROVED VEHICLE WHEEL.

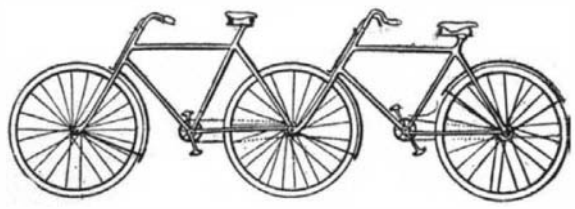
Instead of placing the pneumatic tube of an automobile wheel on the tread, where it is most subject to wear and is in constant danger of being punctured, Mr. John H. Forrest, of Marion, Ind., has devised a wheel in which the tube is located midway between the hub and the tread, thus protecting the tube from rupture and, at the same time, preserving all its cushioning qualities. The tread of the wheel is protected preferably by a hard-rubber tire, although a tire of metal, wood, or composition may be used. The form of the wheel is illustrated herewith. As may best be seen in the cross-sectional view, the wheel comprises a body section *A*, formed of a tread portion with an inwardly-extending annular flange, and a hub section composed of two disk members *B* and *C*, which are firmly fastened together by bolts or rivets *F*. The disks *B* and *C* are so formed as to provide between them an annular chamber, in which the pneumatic tube *D* is placed. From this chamber outwardly the disks are spaced apart to receive the flange of the body section *A*, which bears against the tube *D*. Opposing grooves are formed in the inner faces of the disks *B* and *C* to receive hydraulic or other packing, so as to render the connection between the body and hub sections dust and water proof. A series of openings are formed in the flange of the body section, and passing through these openings, are a set of bolts *E*, which serve to connect the disk members *B* and *C*. The openings are much larger than the bolts, and allow a limited movement between the body and hub sections of the wheel. It will be evident that in practice, the weight supported by the wheel will be carried by the pneumatic tube interposed between the flange section *A* and the hub. The tube *D* may be either a pneumatic tube, a solid rubber ring or a cushion of rubber.



IMPROVED VEHICLE WHEEL.

AN IMPROVISED TANDEM.

The following suggestion culled from a Spanish paper and sent to us by the Rev. R. White, S.J., of Ybor City, Fla., may be found useful for bicyclists who travel in company. In the case of a serious puncture, or other accident to the front wheel of one of the bicycles, if repairs cannot readily be made, a practical remedy is to detach the injured wheel and fasten the front forks of the bicycle to the hind wheel of another machine, as shown in the cut. In this manner the cyclists may complete their journey with the

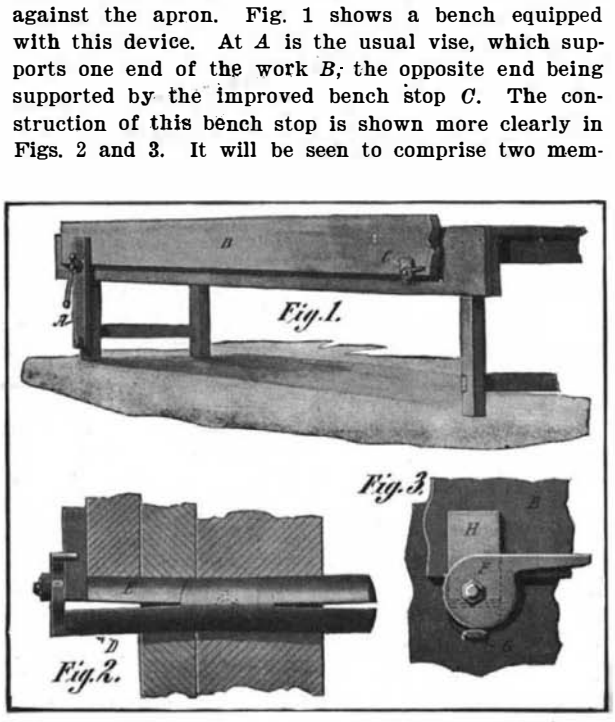


AN IMPROVISED TANDEM.

sole inconvenience of having to carry the crippled wheel, should they think it desirable to do so.

AN IMPROVED BENCH STOP.

Carpenters' benches, as ordinarily constructed, are provided with holes in the apron of the bench, in which pins may be inserted to support one end of the board while the opposite end is clamped in the vise. This method of supporting the work is not without its faults. The pins are apt to work loose and drop out and, furthermore, they do not hold the work firmly against the apron. In the accompanying illustration, we show an improved form of bench stop, which may be locked in the holes in the apron, and which is formed with a jaw adapted to clamp the work tightly against the apron. Fig. 1 shows a bench equipped with this device. At *A* is the usual vise, which supports one end of the work *B*; the opposite end being supported by the improved bench stop *C*. The construction of this bench stop is shown more clearly in Figs. 2 and 3. It will be seen to comprise two members, *D* and *E*, which are hinged together. When in closed position, these members are in the form of a pin. Mounted on the outer end of the member *E* is an eccentric *F*, which is adapted to bear against the lug *G*, formed on the member *D*. The eccentric is provided with a handle, and by depressing this handle, the two sections *D* and *E* are swung open, thereby locking the stop in the apron. The section *E* carries a jaw *H*, which bears against the work *B* and clamps it to the apron. A patent on this improved bench stop has recently been granted to Mr. Merton R. Raynesford, of Ellis, Kansas.



AN IMPROVED BENCH STOP.

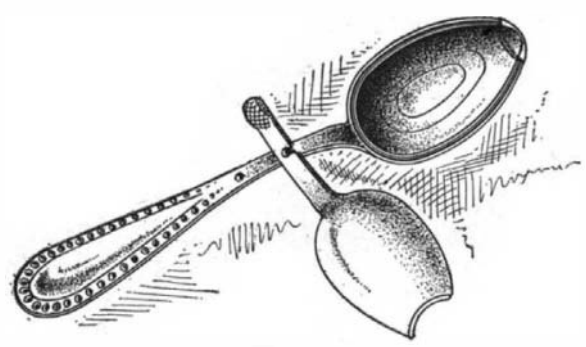
ODDITIES IN INVENTION.

Adjustable Support for Chairs.—A resident of Chicago has devised a support for chairs, whereby the chair seat may be adjusted to any desired height. The accompanying illustration represents this adjustable support as applied to a rocking chair, although it will be evident that it could be used equally as well on any other type of chair. Secured to the under side of the seat, at the rear, is a rack formed of spring metal. The rack is adapted to engage a transverse rod, which is mounted to slide toward the front or the rear of the chair seat. A pair of supports are hinged to this rod

ADJUSTABLE SUPPORT FOR CHAIRS.

at their upper ends, while their lower ends are secured in sliding adjustment with the rockers at the rear. Another pair of supports run diagonally from the forward ends of the rockers to a pair of brackets at the rear of the seat. These supports are journaled on a common pivot where they cross each other. It will be evident from this construction that by lifting the rack out of engagement with the rod, the supports attached thereto may be swung on their pivot to the rear and thus raise the chair seat, or forward to lower the chair seat. The teeth of the rack are preferably inclined rearwardly, so that when it is desired to adjust the seat to a higher level, it will not be necessary to lift the rack.

Medicine Spoon.—The accompanying illustration shows an improved spoon, which will prove of value in the nursery or the sickroom. The bowl of the spoon is provided with a cover, which is cut away at the end to permit pouring out the contents of the spoon without spilling. The cover is formed with a lip which fits into a groove in the edge of the bowl, so that it will be sealed against leakage. When it is desired to fill the spoon the cover may be readily swung to one side, and it may be entirely removed to permit of cleaning the parts. The bowl of the spoon is formed with graduation marks to indicate a teaspoonful, a dessert spoonful, etc., so that the quantity of liquid may be easily measured. The handle is so shaped that when the spoon is laid on any flat surface, the bowl will be held level to prevent spilling of the contents.



MEDICINE SPOON.

Mrs. Chadwick, wife of Admiral Chadwick of the U. S. navy, has invented a carrier for the removal of disabled soldiers from a battlefield.

One of the greatest advantages of the invention lies in the fact that the wounded soldier can be carried in an upright position, so that the loss of blood is diminished in many cases. Another important item is that when the wounded man is being carried between two comrades, the latter would have free use of their arms for handling their muskets. The whole device weighs only six pounds.