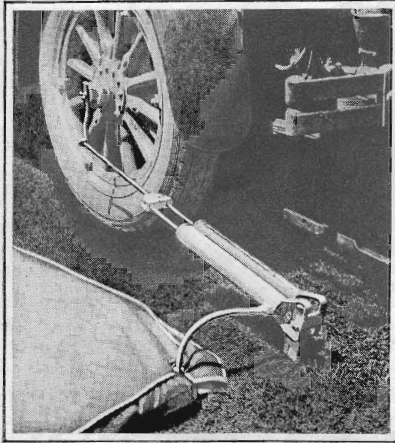


# Ideas You Can Use on Your Car

## How to Double the Life of Tire Chains—A Wheel-Driven Pump for Campers—Other Ingenious Kinks



### Engine Pumps Air Mattress

**A**FTER a day on the road the motor camper usually does not feel in the mood for the job of pumping up the air mattresses. By using two of the regular pumps supplied with the mattresses, arranged as shown above, you can make the auto engine do the work for you. The two pumps are fastened together and held by a hinge to a hardwood stake to be driven into the ground back of the rear wheel. The hub cap is prepared with two driving pins and a threaded stud. The rear wheel is jacked up and then the stake is driven at the correct distance. The length of the crank should be slightly less than half the total movement of the pump handle. The wheel should be run by the motor in low gear. Test the location of the stake by turning the wheel by hand. This is important, for if the stake is not located the proper distance behind the rear axle, the pump may be smashed. Of course the idea of using two pumps is to permit pumping up two mattresses at the same time.

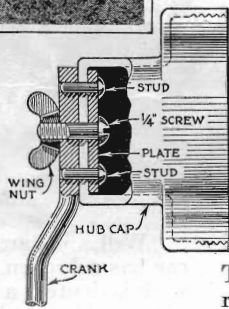
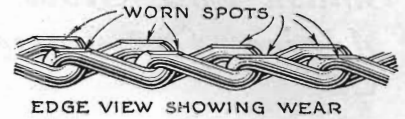


Fig. 1. By this arrangement the engine is used to pump up the air mattress

### Ten Dollars for an Idea!

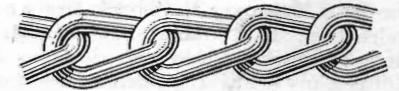
**F. R. GORTON**, of Ypsilanti, Mich., wins the \$10 prize this month for his suggestion of an air mattress inflating method (Fig. 1). Each month **POPULAR SCIENCE MONTHLY** awards \$10, in addition to regular space rates, to the reader sending in the best idea for motorists. Other published contributions will be paid for at the usual rates.



EDGE VIEW SHOWING WEAR



PLAN VIEW SHOWING WEAR



PLAN VIEW OF CHAIN REVERSED AND SHOWING ABSENCE OF WEAR

### Chains Last Twice as Long

**I**F YOU will examine your tire chains, you will find that the wear comes at the points indicated in the drawings above and, owing to the curve of each link, when you turn the chain over, the wear comes at a different point on the link. The worn spots will not harm the tire. As the life of a cross chain is terminated when the link wears all the way through, you can get practically twice as much wear out of a pair by reversing them every time you put them on. Make sure that the chains are fitted loose enough so that they creep around and around on the tire.

### Windshield Wiper Holder

**T**HE mechanism of your windshield wiper wears in after it has been in use for some months and then you will experience some bother because the jarring of the car will gradually move it down into your line of vision. To save yourself the annoyance of constantly pushing it up out of the way, add a spring clip as shown in Fig. 3. Then when you wish to use the wiper on rainy days, the end of the spring is slipped out from underneath the arm and it snaps away from the path of the wiper arm. If your wiper is different from that illustrated, change the shape of the spring to clamp under any convenient screw.

### Emergency Valve Grinder

**F**IG. 2 shows a simple method of making a valve grinding tool that will do good work with minimum effort by the operator. A section of broomstick or an old shade roller is cut to the right length, slotted at the bottom and drilled for a cotter pin. The grinding blade can be filed out of a piece of scrap iron with two projections that will fit in the holes in your valves. Hold the bow at a slight angle so the rope will not chafe. More speed is had by a spring underneath that lifts it when the handle is raised.

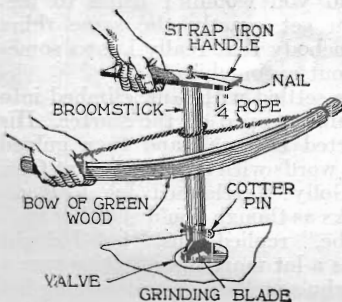


Fig. 2. This simple valve grinding outfit will do good work and is easy to make. The bow should have just enough tension to keep the rope taut

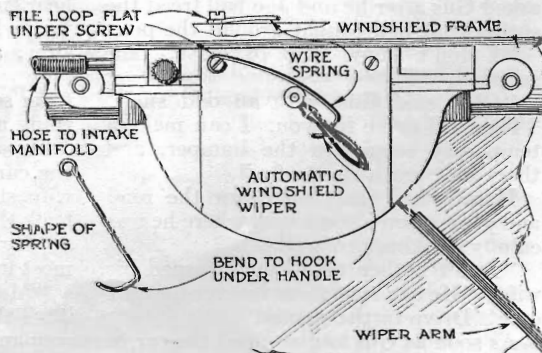


Fig. 3. The wiper on any of the vacuum types of automobile windshield wipers can be kept out of the way with a piece of spring wire bent as shown

### Simple Holder for Hats

**E**VEN in cool weather there are times when the occupants of a closed car desire to go without hats. This is particularly true during stormy weather when it is necessary to keep all windows closed. A simple holder that will keep any type of hat out of the way is shown in Fig. 4. A strip cut from an old inner tube is fastened to the top after a long slit has been cut down the center. There should be just enough tension to hold the hat in place without crushing. If desired, the hat holder can be stretched crosswise instead of lengthwise and two or more strips used instead of one, or it can be located on a side panel instead of the top.

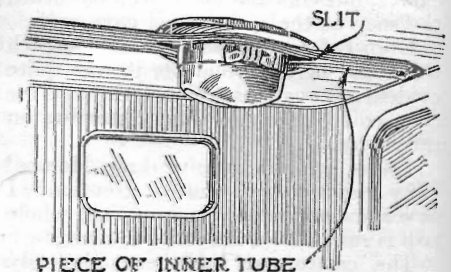


Fig. 4. A strip cut from an old inner tube can be made into a good hat holder as shown above. It will hold any type of hat without crushing it