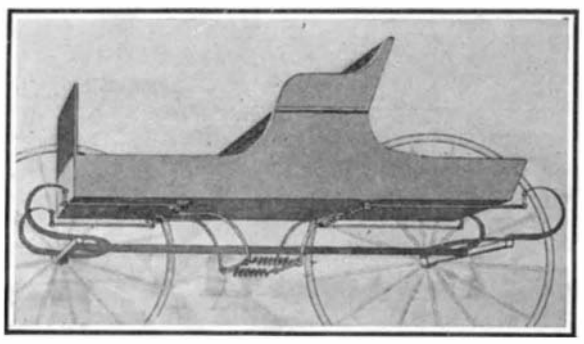
Patent Department

IMPROVED VEHICLE SPRING.

Pictured in the accompanying engraving is a novel form of spring for vehicles, which provides a number of important improvements over the ordinary type. The objects of the new construction, as outlined by the inventor, Mr. Hubert R. Rockwell, of 512 West



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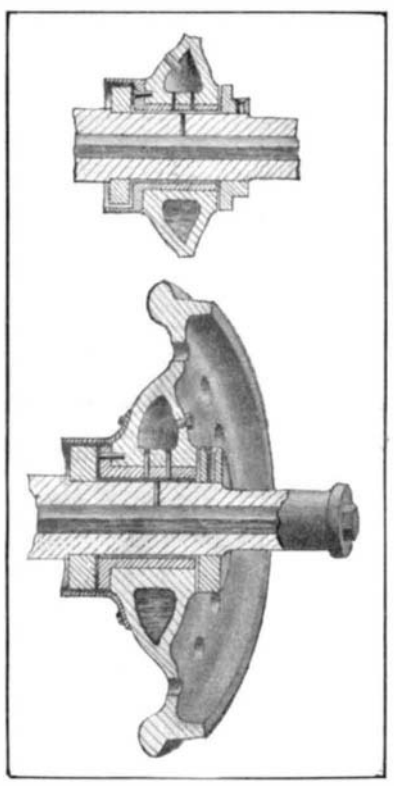
Sixth Street, Chattanooga, Tenn., are to provide an even distribution of the load on the running gear and springs, to maintain the vehicle body at all times on a parallel plane even though the load may be unevenly placed in the vehicle, and to provide a differential action of the springs which will add to the comfort of the persons riding in the vehicle. The construction is very strong and is equally applicable to any kind of a vehicle, from a baby carriage to an automobile. The illustration shows the underside of a carriage fitted with the improved springs. Mounted on the front and rear axles, respectively, are two pairs of C-springs which are bent upward and inward. These springs are built up of a series of leaves. The vehicle body is supported by a pair of levers fulcrumed thereto and with their outer ends suspended by hangers from the C-springs. The inner ends of the levers are bent downward and are connected together by a pair of spiral springs, which will obviously yield equally as load pressure is brought to bear upon the vehicle body. The front and rear levers are each formed of a single rod bent to engage the springs at opposite ends of the axle and providing a long bearing at the fulcrum, as indicated in the drawing. The arm to which the spiral springs are secured is U-shaped, thus linking together the leverage of opposite sides of the vehicle. This connection, however, is not absolutely necessary and the inventor alsc provides a construction in which four levers instead of two double levers are used.

CAR AXLE AND WHEEL.

There are some features of railroad engineering which have made no advance since the very first days of railroading. For instance, we still cling to the



CAR AXLE AND WHEEL.

practice of mounting car wheels rigidly on their axles, even though this construction offers some very decided disadvantages. In rounding a curve, the outer wheels of the car must travel faster than the inner ones; but since each pair of outer and inner wheels is coupled to the same axle, this relative adjustment of travel on curves is impossible, and as a result, one or both of the wheels must slip and grind on the rails. A long list of evils may result from these conditions. Not only do the wheels and rails wear out, but there is danger of breaking the wheel flanges, and sometimes at high speeds the wheels may climb up on the rails, and thus derail a car. Aside from this, there is an enormous waste of energy in drawing the cars around curves. The theoretical advantages of loose wheels for cars have long been recognized, but owing to expense and complication of parts, the older and cruder construction is still used. However, a very simple loose wheel construction has recently been invented by Mr. Thomas E. Lambert, of 67 Clarkson Street, New York, N. Y. This improved car wheel and axle is illustrated in the accompanying engraving. The axle is bored axially to provide an oil chamber, which is closed at opposite ends by screw plugs. The car wheels are also provided with oil chambers, which are formed in the webs. The hub of each wheel is fitted with a bushing adapted to take up wear. The car wheel has a broad bearing surface on the axle, and is held in place by a pair of collars secured thereto by set screws. Over each collar a dust shield is fitted. The bearings are kept well lubricated by the lubricant in the oil chambers. That in the axle chamber is preferably of such consistency that oil will not flow unless the axle is heated, as it would be, by friction after the other oil supply was exhausted. When a bushing wears out a new one may be substituted, thus virtually renewing the life of the wheel.

Brief Notes Concerning Inventions.

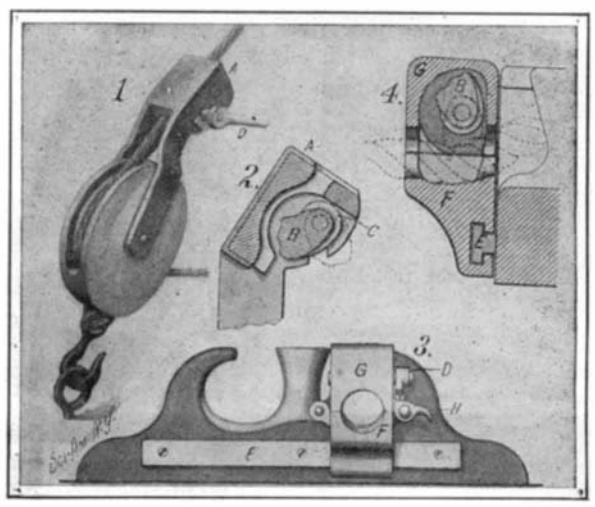
A new industry soon to be established at Oswego, N. Y., is the manufacture of a recently patented double glass phial. The patent not only covers the bottle, but also the process of making it, which can be done at a low cost. The bottle was primarily designed to meet the demands of the perfume trade, it being desirable to put ordinary perfume in one receptacle, and smelling salts or some special product in the other. It will be also found to fill a place in medicine. It is quite common for homeopathic physicians to prescribe two medicines to be taken alternately, and in such cases this bottle will be very convenient. The bottle really consists of two phials end to end with a perfect division, and in the shape of a pencil it will be easy to dispose of in the pocket.

A resident of Connecticut has recently invented a metal belt made of a number of spring loop links spaced by elastic drag links, and connected by diamond-shaped stay rods, forming what is known as a "knife edge" or "scale point." There being no sliding movement, it cannot wear out and needs no oiling. Because of the nature of its construction, the belt can be built up to any length or width—a very important feature of the new system. The inventor claims that his belt will always retain its elasticity. and never require to be taken up, as is the case with leather and its substitutes. The weight is more than that of leather, but its cost is very much less. The demand for some substitute for leather grows more and more urgent every year, and anything which will take its place will be gladly welcomed.

One of the novelties just being introduced to the trade is a folding skate. It is instantly ready to be folded when removed from the shoe. The wing-like projections which are necessary to clamp the skate to the heel and sole are made to turn lengthwise with the skate, and when in this position the bulk is transformed into a perfectly flat shape, one-half inch in thickness. On being applied to the foot it is capable of the same adjustment as the skate of the ordinary kind, and is secured in place by the same lever adjustment as is now in common use. Packing for sale is done in a neat leather wallet with two pockets, each one designed to hold a skate. This makes a package a little more than an inch in thickness and three and a quarter inches wide, the length being regulated by that of the skate.

CHECK ATTACHMENT FOR PULLEYS AND CHOCKS.

The accompanying engraving shows an attachment for chocks and leading pulley blocks which can be set to permit the free passage of the rope through the chock or pulley, or can be set to clamp the rope. Furthermore, the rope will be so clamped that the strain to which it is subjected will only increase the security with which it is held. In Fig. 1 we show a leading pulley block hooked to a holdfast. The block is provided with a pair of straps which culminate in a hood *A*. A section of this hood is represented in Fig. 2, which shows the groove formed therein for the passage of a rope. Journaled in this hood is a fan-shaped cam *B*, formed with a groove *C*, through which the rope normally passes. A handle, *D*, connected to this cam provides a means of turning the latter, so that it will press its serrated edge into the rope, when the rope will be immediately locked against movement through the hood. Fig. 3 shows the invention applied to a chock of ordinary type. The chock is provided with a T-rail *E*, on which a member, *F*, is adapted to travel. Hinged to the member, *F*, is a member, *G*, and the two are fastened together by a lock, *H*. The members, *F* and *G*, combine to form a passage for the rope or cable. As shown in the section, Fig. 4, the member, *G*, is formed with a chamber, in which is journaled the fan-shaped cam, *B*. The latter is operated as in the pulley by a handle, *D*, to clamp the

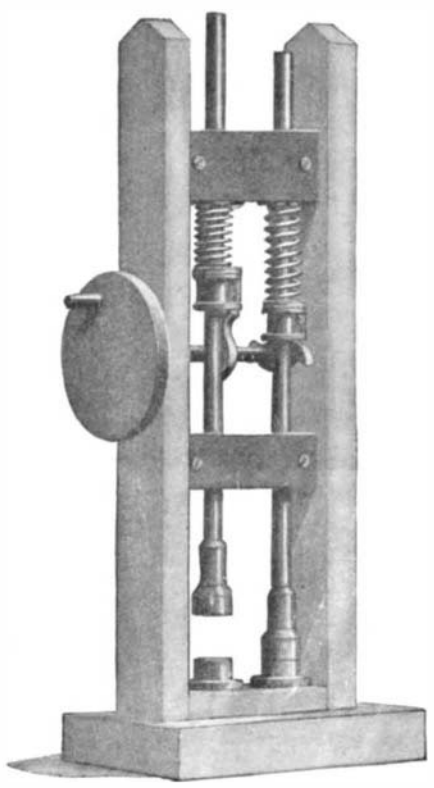


CHECK ATTACHMENT FOR PULLEYS AND CHOCKS.

rope passing between the members, *F* and *G*. The inventor of this improvement is Mr. Rudolph Kurella, 2419 Tenth Street, West Berkeley, Cal.

ORE STAMP MILL.

In ore stamp mills, as heretofore constructed, it has been the common practice to make the stamps as heavy as possible, with the idea that thereby a more effective blow can be delivered. Gravity alone is depended upon to move the stamps downward; consequently, the stamps cannot be operated very rapidly, for the cams will lift them before they can deliver their blows. With the purpose of providing a high-speed stamp mill, as well as one that will deliver sharper blows, the mill illustrated herewith has been invented by Mr. Thomas E. Lambert, of 67 Clarkson Street, New York, N. Y. The illustration shows a mill with a battery of two stamps. The general principle of operation is the same as usual. A pair of cams lift the stamps to their upper position and then permit them to drop, but in place of depending on gravity alone to cause the downward movement, springs are used to increase the speed and the force of the blows. This permits the mill to be operated at a much more rapid rate. In order to reduce the power necessary to lift the stamps, as well as to utilize the full efficiency of the spring action, the stamps are made extremely light. The shoes are reduced in form, and are made of chrome steel. The stems also are made hollow, so that the inertia of the stamps is materially reduced. As a consequence, the stamps respond more quickly to the action of the springs, and thus deliver smarter blows. To illustrate the economy of this design, Mr.



ORE STAMP MILL.

Lambert has constructed a model provided with two stamps, both of which are fitted with springs of equal power. One stamp, however, is solid, and the other hollow, but in actual tests the crushing effect of the lighter stamp is greater than that of the heavier one, whereas a greater power is consumed in lifting the heavier stamp than the lighter one.