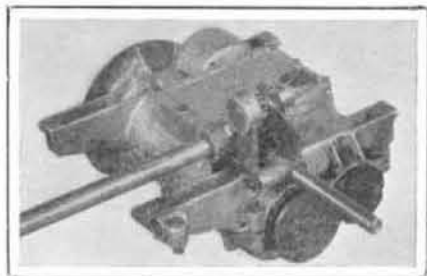
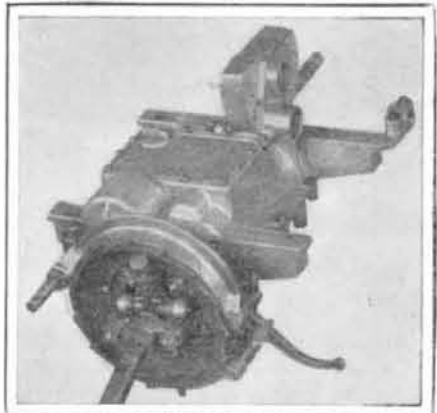


noticed that if one of the rear springs rises over an obstruction, the rear platform spring serves as an equalizing lever, depressing the spring on the opposite side an equal amount. The center, or pivotal point, on the platform spring is not raised, as it remains neutral, and thus no shock is imparted to the body or passengers. With this construction it is claimed that the passengers in the rear seats ride as comfortably as those in the front seats of the car. The rear side springs are 60 inches in length, and serve a twofold purpose as springs and strut rods. These springs, owing to their length, render a support to the frame at points which are well forward and under the load which the car is designed to carry. The wheel base is short considering the high power of the engine, and the turning radius is extremely short, thus making the car very easy to drive through crowded traffic and narrow streets.

The gas lamps are placed on top of the front fenders for the following reasons, which have been worked out and demonstrated in practice: (1) The lamps



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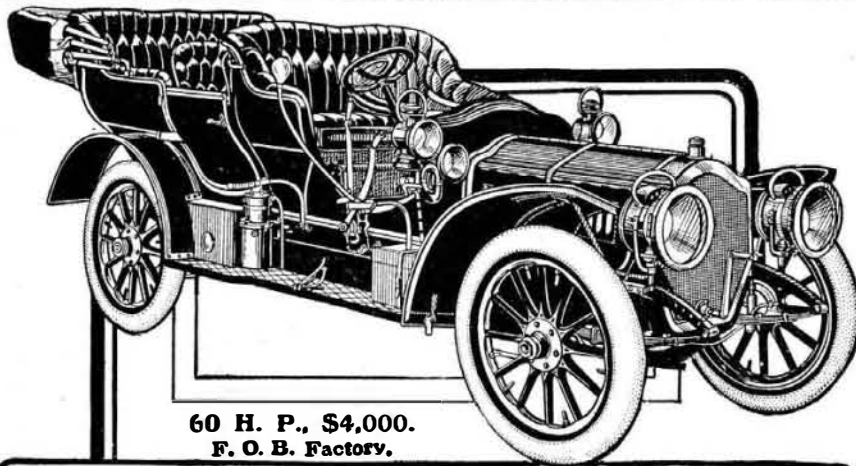
REAR OF ROYAL TRANSMISSION, SHOWING BRAKE, SAFETY RATCHET RING, AND UNIVERSAL JOINT OF PROPELLER SHAFT.

are removed from the point where they are in danger of being smashed in traffic and in collision. (2) The focal plane is materially raised, thus throwing a better diffused light and eliminating long shadows on a rough road, which would be made most apparent with lamps in a lower position. (3) The direct line of travel of the wheels is lighted. (4) The lamps being placed at the outside edge of the car, at once establish to the other driver the clearance that is necessary in passing. (5) The lamps are thus removed from being in close proximity to the starting arrangement, which gives ample room to take care of the initial start of the car.

SOME INTERESTING MECHANICAL LUBRICATORS.

(Continued from page 36.)

ing in the cover of the lubricator. In this shank is the stud which bears against the cam, and it may be adjusted by means of thumb nuts to vary the stroke of the piston. The pistons are formed with slots at each side which are not directly opposed. While the piston is being drawn upward, it is rotated to bring one of the slots into engagement with the suction port. This draws oil into the bottom of the cylinder. On the downward stroke, the piston is rotated to bring the opposite slot into registry with the delivery port, so that the oil in the cylinder is then forced out to the points of application.



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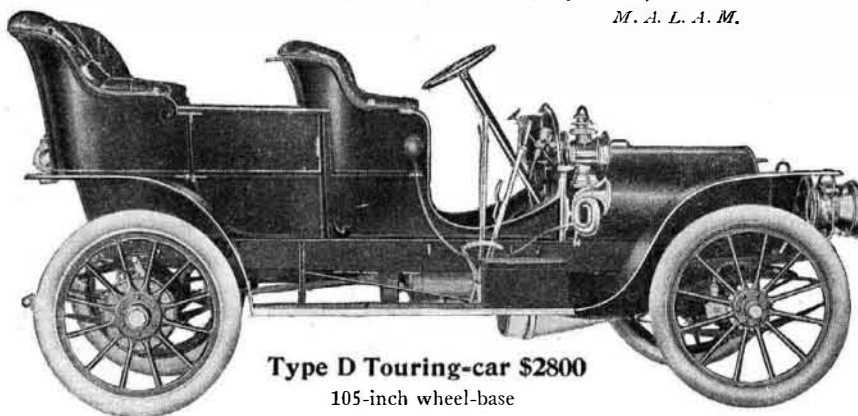
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AN INSTRUMENT FOR TESTING SHOCK ABSORBERS.

(Continued from page 38.)

it may be stated that the second line, No. 10 of Fig. 2 corresponds very nearly with the second line No. 9 of Fig. 1. For the portion of the diagram between a and b the average motion of the car body toward the axle for the diagram of Fig. 2 is 1.12 inches, against the average of the similar motion for diagram Fig. 1 of 0.94 inches. In other words, the average motion toward the axle has been reduced 16.1 per cent. The average motion away from the axle for the same portion of the diagram in Fig. 2 is 1.02 inch, against an average of 0.71 inch in Fig. 1, giving a reduction in the average motion away from the axle of 30.4 per cent.

The total average motion of the car body relative to the axle without eliminators for this portion of the diagram (Fig. 2) is 1.12 + 1.02, or 2.14 inches; while the total average of the same motion when the shock eliminators were applied is 0.94 + 0.71, or 1.65 inches, which gives a reduction of the average motion of the car body while passing over this crosswalk of 22.9 per cent.

The maximum motion of the body toward the axle Z in the diagram Fig. 2 is 2.58 inches, against the similar motion Z in the diagram Fig. 1 of 2.22 inches, or the maximum downward movement of the body was reduced 0.36 inch, or 14.0 per cent. The maximum motion toward the axle Y in Fig. 2 is 2.40 inches, against 1.52 inch in Fig. 1 or the upward motion of the body was reduced 0.88 inch, or 36.7 per cent. The maximum vibration, then, without the eliminators, Fig. 2, was 2.58 + 2.40, or 4.98 inches, against 2.22 + 1.52, or 3.74 inches, in Fig. 1, with the eliminators applied, which gives a reduction in the maximum vibration of the body by the use of the eliminators of 1.24 inches, or 24.9 per cent.

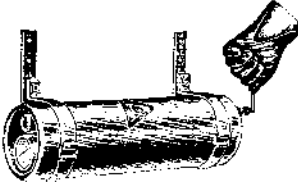
INDEX OF INVENTIONS

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AND EACH BEARING THAT DATE (See note at end of list about copies of these patents.)

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Scientific American Supplement 1551 contains the principles of reinforced concrete with some practical illustrations by Walter Loring Webb.

Scientific American Supplement 1573 contains an article by Louis H. Gibson on the principles of success in concrete block manufacture, illustrated.

Scientific American Supplement 1574 discusses steel for reinforced concrete.

Scientific American Supplements 1575, 1576, and 1577 contain a paper by Philip L. Wormley, Jr., on cement mortar and concrete, their preparation and use for farm purposes. The paper exhaustively discusses the making of mortar and concrete, depositing of concrete, facing concrete, wood forms, concrete sidewalks, details of construction of reinforced concrete posts.

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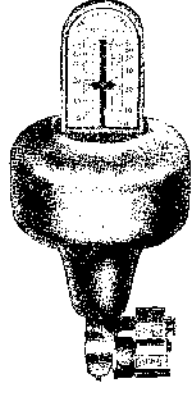
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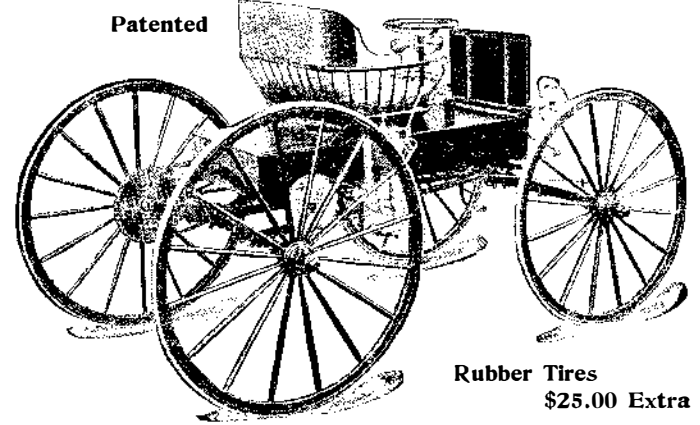
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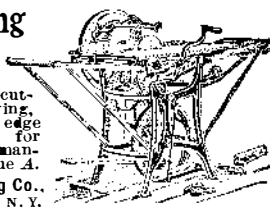
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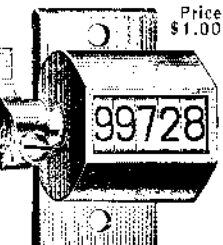
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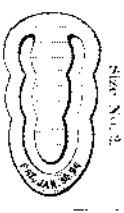
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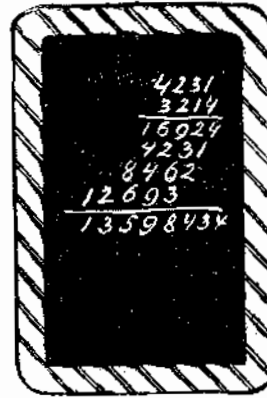


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Table listing various items for sale with prices, including paints, paper, machinery, and other goods.

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