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For This Mark



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and The Quality

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and

-:- Sterling

PRICES:

- 209 R.—Right hand, 2½ to 1 for Stewart Speedometers - - - - - \$2.50
- 209 L.—Left hand, 2½ to 1 for Stewart Speedometers - - - - - \$2.50
- 204—Right hand, 1 to 1 for Johns-Manville Standard and Sears-Cross Speedometers right hand drive. Ford equipment only - - - - - \$2.50

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F. W. STEWART

1402-1406 Michigan Ave. AMA -

Chicago



THE  
**F-W-S**  
IMPROVED  
SPEEDOMETER  
SWIVEL



Collected N.Y. Auto Show

Jan. 5-12, 1918

Manufactured For and Sold  
Exclusively By

F. W. STEWART

1402-1406 MICHIGAN AVE.

CHICAGO

# THE F. W. S. IMPROVED SWIVEL JOINT



## *The Zenith of Swivel Joint Construction*

Every detail developed to the ultimate of mechanical perfection.

Extra large, all steel gears of one piece construction eliminating trouble from gears loosening on the shaft and insuring long life.

The gears and their respective shafts are each turned from bar stock, the gears accurately cut and hardened.

All gears are oversize with heavy teeth, with in connection with the one piece construction insure extreme durability and wearing qualities.

The center gears run on a fixed vertical shaft with a bearing the full length of the shaft. The other two gears are each on rotating shafts with long bearing surfaces and are further provided with end shafts running in steel seats in the end thrust bearings.

By such construction only are the shafts relieved of the side load that causes the greater part of the wear on the shafts and bearings.

## **STEEL END THRUST BEARINGS FOR ALL GEARS**

The Swivel body is fitted with steel end thrust plates at both ends of the vertical gears and the end thrust of the horizontal shafts is taken up by steel thrust caps.

The end thrust caps are turned from bar steel with heavily knurled edges and in addition to their capacity as end and side thrust bearings serve as convenient and efficient grease cups.

**All wearing surfaces, steel against steel insuring maximum durability with extra large bearing surfaces.**

At all points of contact between the steel parts of the swivel mechanism and the softer metal body, wear on the body is eliminated by steel bushings and end plates, a further assurance of long life and dependability.

## **CENTER BEARING**

The bearing in the center of the swivel body is composed of two pressed steel plates of extra large diameter giving fully 50 per cent more bearing surface than similar bearings on other swivels.

These bearing plates are so treated in process of manufacturing that warping is eliminated and perfect fit assured.

## **INTERCHANGEABILITY OF PARTS**

All parts of the F. W. S. Improved Swivel are removable and interchangeable, allowing easy and inexpensive replacement of worn parts, and the entire swivel may be quickly taken apart and re-assembled for cleaning.

The shaft connection and end thrust bearings are interchangeable, thereby allowing the swivel to be instantly assembled for either right or left hand drive.

