

# FRANKLIN

## Automatic Adjustable Driving Box Wedge

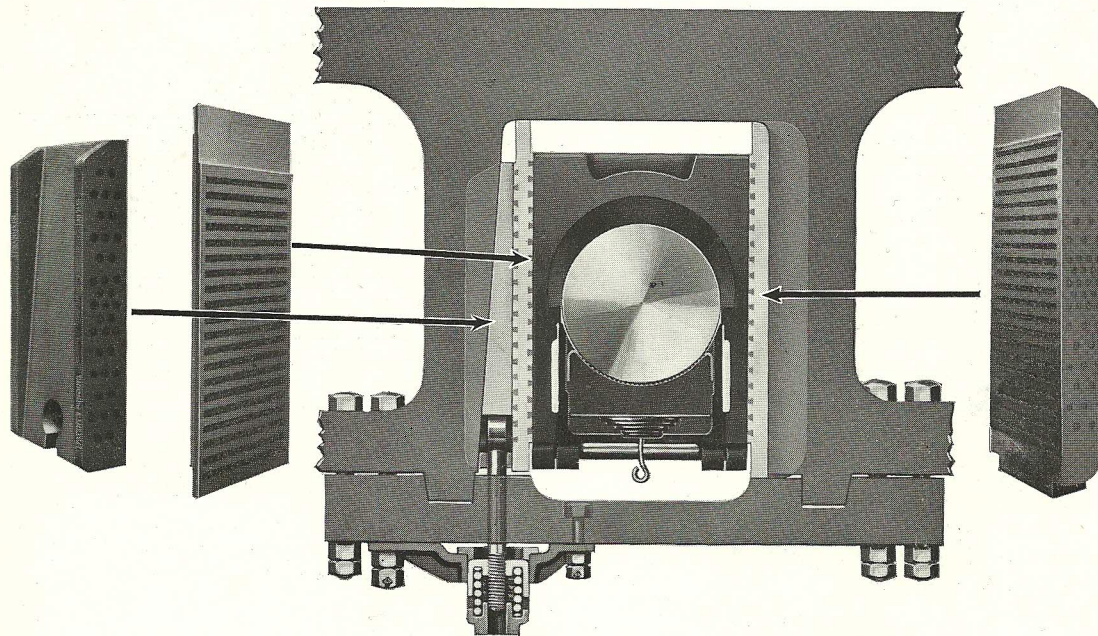
FRANKLIN RAILWAY SUPPLY COMPANY, Inc.

NEW YORK . . . CHICAGO

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BULLETIN No. 607

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## No Lubrication Necessary With The New Franklin "Lubrite" Wedge

THE variable quantity of oil present, or in some cases the lack of lubricant, on the surfaces of locomotive driving box shoes and wedges, a condition aggravated by long runs, has always been a source of trouble.

At times these parts are oiled copiously by the engineer or round house forces, while in other instances only indifferently. Consequently, as the frictional resistance varies with the extent of lubrication, the required spring adjustment varies and can only be approximated.

Many wedge troubles are traceable to this non-uniformity of lubrication.

Improvements in the Franklin Automatic Adjustable Wedge now correct this condition.

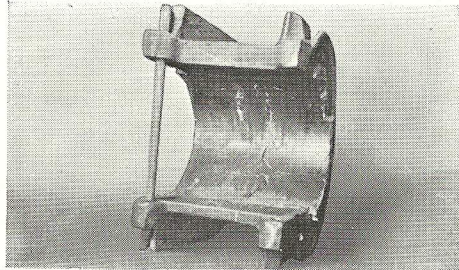
"Lubrite", a material having low coefficient of friction, is inserted by a high pressure hydraulic press in grooves and holes in the parallel sided floating plate, wedge and shoe. All wearing surfaces are provided with a lubricant having a practically constant coefficient of friction. This condition is assured during the life of the part so that the proper spring tension can be readily attained and maintained. Adjustment is required at intervals only, to care for wear as it occurs.

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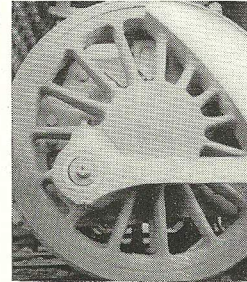
### Franklin Automatic Adjustable Driving Box Wedge

Protects the Locomotive's foundation.

It is automatically adjusted and held in contact with the box and pedestal jaw so that the box is maintained in proper position at all times, and pounds are eliminated.

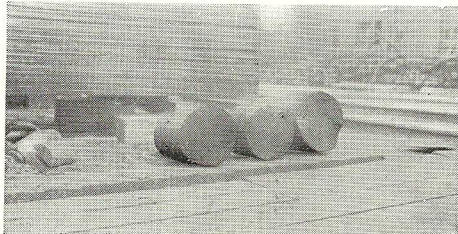


*A ruined brass.*

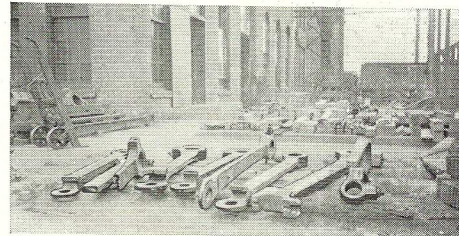


*A pounded bushing.*

Slack shoes and wedges hasten the pounding out of crown brasses and rod bushings.

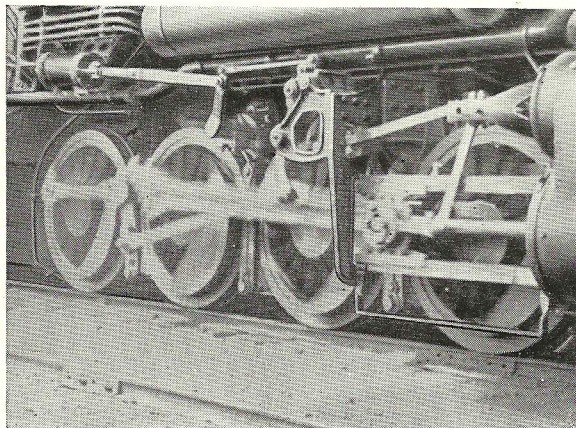


*Axle failures  
from crystallization.*



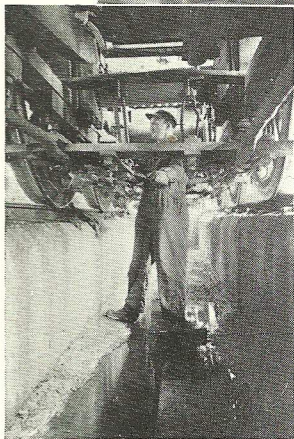
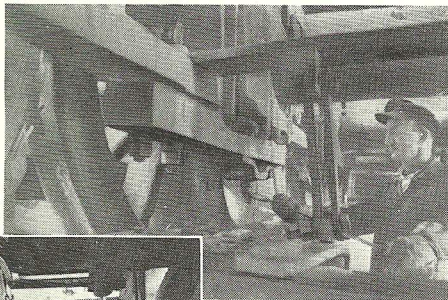
*Broken rods that might  
have been avoided.*

Pounding boxes produce crystallization of the parts receiving the blow, causing broken axles, rods and sometimes main frames.



Loose boxes make for a slippery engine and the constant jar, produced by lost motion in boxes, causes flues to leak.

*A slippery engine detains  
operation, ruins track and  
wears tires.*

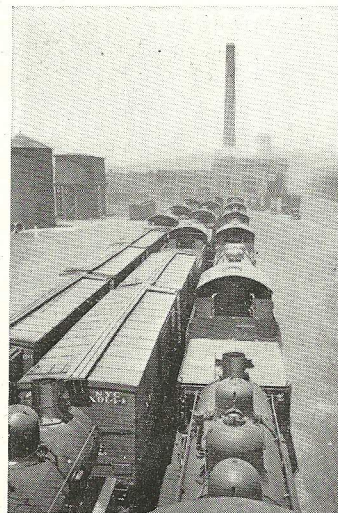


*Even a careful mechanic has trouble making a proper wedge adjustment.*

*A bad place to work.*

Almost all engine repairs are directly or indirectly the result of improper wedge adjustment.

It is practically impossible to manually adjust wedges on a busy locomotive. For adjustment the locomotive must be over a pit and this means working in the dark and under physical handicaps.



*Waiting their turn at the shop. Franklin Wedges reduce shop work.*

Consider the time locomotives are out of service for running repairs. With the Franklin Automatic Driving Box Wedge, pounds have no chance to start and engines are kept in service for a much longer period than those equipped with hand-adjusted wedges.

Franklin Automatic Driving Box Wedges on many roads increase rod bushing mileage 400%.

Engines equipped with hand-adjusted wedges take five bushings



to average approximately 135,000 miles, while engines equipped with Franklin Wedges, take but one rod bushing



to average the same number of miles.

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## “Lubrite” Parallel Sided Floating Plate—The Latest Development

A parallel sided floating plate and adjustable wedge with taper on the pedestal side are now the recommendation of Franklin, the result of exhaustive tests which showed this construction to be correct in practice and theory.

Perfect freedom of box movement is permitted without tending to alter the adjustment.

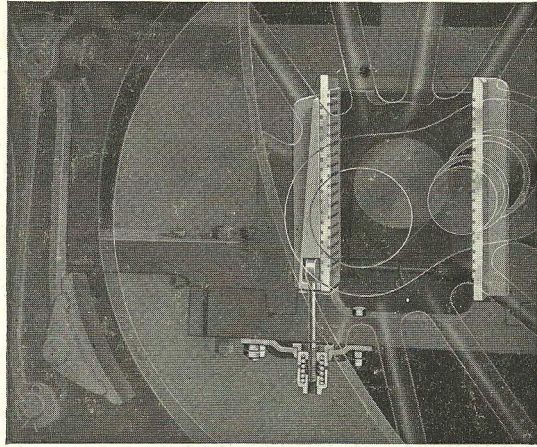
Constant contact between driving box and its surrounding parts, the shoe and wedges is assured while the locomotive is in motion.

The force required to hold the adjustable wedge in position is reduced and this member now serves as its name implies—an automatic adjustable driving box wedge which is forced upward by spring tension, to take up wear as it occurs, and can be readily pressed down against the spring pressure by expansion of box parts due to heat caused by normal operating temperatures.

Springs are designed to hold adjustable wedge in proper position to meet operating conditions and piston thrust. “Pinching” and knocking down of wedges are avoided.

Since with proper spring adjustment lost motion will not occur, box pounding is prevented and the life of the brasses prolonged.

To eliminate the necessity of lubrication, upon which the success of all devices of this character depends and to avoid the variation in friction due to whether or not oil is present on the rubbing surfaces, Franklin had provided “Lubrite” inserted in cavities under high pressure on both faces of the floating plate and on



the flanges of the adjusting wedge. The face of the shoe bearing on the box and the shoe flanges have also been equipped with “Lubrite” inserts.

The results are:

1. Constant co-efficient of friction on all surfaces subject to continuous movement while the locomotive is in motion.
2. Greatly reduced wear because of ample supply of lubricant.
3. Manual oiling of wedges and shoes eliminated.
4. Spring tension constant under all conditions for each class of power.
5. Necessity of adjusting wedges reduced to a minimum.
6. Movement of adjusting wedge confined to only that required to automatically take up lost motion caused by wear or expansion caused by heating due to running conditions.
7. Abrasion of wearing surfaces avoided and lubrication assured during the life of the parts.

### Construction and Operation

The Franklin Automatic Adjustable Driving Box Wedge consists of an adjusting wedge and a floating plate held in proper relationship by a coil spring. The adjusting wedge is tapered on one side to suit the taper of the pedestal jaw.

To the adjusting wedge is attached the wedge bolt. This bolt passes down through the pedestal binder and spring pocket, and is held in a support attached to the binder. An adjustable spring cap or follower is mounted on the wedge bolt with the spring between the cap and the bottom of the spring pocket. The spring holds the adjusting wedge in position and automatically maintains proper adjustment of the driving box.

Between the adjusting wedge and the driving box is placed a floating plate. This floating plate is from  $\frac{3}{16}$ " (minimum) to  $\frac{5}{16}$ " (maximum)

shorter than the distance between the binder and frame rail.

When the box moves up or down the floating plate is carried with it until it strikes the frame or binder. The adjustable wedge automatically exerts the force transmitted to it from the spring upon the floating plate. Its movement is slight and occurs only when necessitated by wear or temperature changes of the parts forming the assembly.

Automatic lubrication of wedge wearing surfaces is now provided by the use of “Lubrite”, a lubricating compound forced into cavities in the wedges. The shoe can be provided by Franklin with like material. Henceforth no wedge or shoe lubrication will be needed; in fact, it is undesirable. This statement, of course, applies only to those installations equipped with “Lubrite” parts.