Erie Locomotive Repairs Criticized

I. C. C. Finds Work in Contract Shops, 1920-1923, Greatly Exceeded Road's Own Shop Costs

WASHINGTON, D. C.

THE INTERSTATE COMMERCE COMMISSION has made public a report finding that the cost of repairs to locomotives and cars of the Erie at outside shops during 1920, 1921, 1922 and 1923 was greatly in excess of the cost of similar work in the railroad's own shops and that a large part of such excess costs was an unreasonable expenditure for maintenance of equipment and not in the interest of efficient and economical management as required by section 15a of the interstate commerce act. This is the latest of a series of reports as to different roads as the result of a special investigation undertaken by the commission. On April 15, 1924, the order covering the investigation was amended so as to broaden the inquiry into matters relating to the repair and operation of the Erie's marine department. This latter feature of the investigation will be dealt with in a subsequent report. The report cites several instances in which it says the cost of repairs to locomotives exceeded the cost of reproduction new of similar locomotives. Commissioners Hall and Cox dissented from the report. Some extracts from the commission's report follow:

Baldwin Contract of 1920

On August 9, 1920, respondent entered into a contract with the Baldwin Locomotive Works for the repair of locomotives on a cost-plus basis, that is, the cost of material at stipulated prices, and of direct labor, plus 120 per cent of the direct labor cost to cover overhead expense, plus 15 per cent of the whole for profit. All scrap material became the property of the Baldwin plant, and respondent bore all freight charges on materials and on the repaired locomotives as well as the costs of inspection. The eight locomotives repaired under this contract went into Baldwin's shop on various dates between October 2 and November 11, 1920, and were turned out on various dates between February 9 and May 4, 1921.

The total cost of repairs on these eight locomotives, inclusive of freight charges and cost of inspection, amounted to $267,395.59. Compared with the cost of substantially similar repairs on the same class of locomotives in respondent's shops, the total excess cost of the contract repairs was $172,361.23. In making comparisons consideration was given to the relative extent of repairs and, with one exception for which allowance was made, the locomotives repaired in respondent's shops received comparable repairs to those in the Baldwin plant. The items of cost in respondent's shops are labor and material, inclusive of shop and store expense, but including no other overhead expense, as respondent's overhead, other than store and shop expense, would not be materially affected by the number of locomotives repaired in respondent's shops.

Respondent contends that under the circumstances the repair of these locomotives at Baldwin's was necessary and did not result in unreasonable expenditures, although the cost was more than it would have been under normal conditions in its own shops. It states that the general run-down condition of its motive power, and the increasing demand for power due to the heavy movement of traffic were the two factors which contributed principally to the necessity for outside repairs.

The class repairs in respondent's shops on an 8-hour day basis averaged about 90 per month during 1920. Respondent concedes that it could have repaired these eight locomotives if its shops had been on a 9-hour basis, but asserts that if the work had been done at overtime rates the cost would have been very little under the contract cost. Our investigators, however, compute that the eight locomotives could have been repaired entirely at overtime rates in respondent's shops at an additional cost of only $30,037.91, whereas the excess cost at the Baldwin plant was $172,361.23. The evidence justifies the conclusion that the eight locomotives could have been repaired in the company's shops at a cost materially less than was paid for repairs at the Baldwin plant and would have been available for service much sooner.

The contract between the Baldwin company and respondent was modified February 17, 1921, by reducing the overhead from 120 to 90 per cent, as well as the stipulated prices on certain materials. Under the modified contract three locomotives were repaired with a guarantee that the cost per locomotive would not exceed $65,000. At the time of the investigation the repair cost on one locomotive only was available, and no similar comparative cost data were prepared by our representatives respecting the repair of these three locomotives.

On May 14, 1921, respondent purchased 45 so-called "Russian" decapod locomotives which were in need of repairs to render them serviceable. These locomotives were repaired at the Baldwin plant during the months of June, July, and August, 1921, under the modified contract of February 17, 1921, at a total cost of $304,466.17. In making a comparison with the cost of like repairs to similar locomotives, respondent uses a cost of $6,279.50 per locomotive, while our representatives show such cost as $5,785.86. Respondent, however, erred in eliminating a locomotive used for comparative purposes which received classified repairs in an engine house. Our representatives erred as to an item of back pay, respondent's data as to this item being more nearly correct. Making comparisons on this corrected basis, the excess cost on the 45 locomotives would be $35,177.70.

Road's Own Shop Output Curtailed

While these 45 locomotives were undergoing repairs at the Baldwin plant, several of respondent's shops were shut down for periods ranging from two to three months. Respondent had 13 shops where classified repairs were performed, the largest being the Susquehanna with a monthly capacity of 23 locomotives, Meadville, 21, Hornell, 18, Jersey City, 15, and Huntington, 9. During the first eight months of 1921 the Meadville, Susquehanna, Hornell, Galion, and Huntington shops were shut down for certain periods and worked only part time during other periods. During 1919 and 1920 respondent's output of classified repairs averaged approximately 90 locomotives per month. During the period January to July, 1921, inclusive, due to the drastic reduction in forces, its output of classified repairs fluctuated between 41 and 69 per month, and averaged only 53 per month. During the last four months of 1921 the output, although greater than the first part of the year, was still approximately 30 repairs less per month than during 1919 and 1920. Based on the performance during 1919 and 1920, respondent's shops were operated at only 65 per cent of their capacity during 1921.

The chief reason advanced for these repairs in outside shops was the financial condition of respondent at that time. The contract with the Baldwin company provided for payment in monthly installments with interest. Respondent concedes that it could have repaired the 45 locomotives if all its shops had been operating, but states that, due to business depression, it was forced to curtail its expenses and close several shops. Respondent could have made a substantial saving by performing these repairs in its own shops, and in the interest of efficiency and economy in operation it should have avoided such excess expenditures.

On October 25, 1923, this proceeding was reopened as to respondent's locomotive equipment and on February 11, 1924, as to all of its equipment. A further hearing was had with respect to repairs to locomotives and cars made during the latter part of 1921, 1922, and part of 1923. During this period there were 213 locomotives repaired in outside shops, 106 of which received classified repairs and 107 unclassified repairs. Written contracts were made with 16 shops. Repairs were also made in three other shops without written contracts. Two of the contracts were made prior to the shopmen's strike of July 1, 1922, and the remainder subsequent thereto.

Although its shops during 1921 were operating at only about 65 per cent capacity, respondent entered into a contract on October 1, 1921, with the Lima Locomotive Works covering the repairs to 10 Santa Fe type locomotives. The contract did not provide for a definite price and, as the costs for repairs amounted to a greater sum than was anticipated, only five locomotives were repaired at that plant. On May 3, 1922, respondent made a contract with the Baldwin Locomotive Works for repairs to the other five Santa Fe type locomotives at stimulated prices.

Respondent owned 60 large Santa Fe type locomotives, which were purchased in 1916 and 1917. It states that its shops were not large enough to repair these large locomotives and it was necessary to have them repaired at outside shops. While respondent has since remodeled certain of its shops to take care of such locomotives, it appears that its corporate officers knew of the incapacity of the company shops during the interval of five years subsequent to the purchase of these locomotives. Moreover, it appears that the repairs to the Santa Fe type locomotives could have been made in its Hornell shop if the smaller locomotives had been transferred from that shop to other shops on its lines.

The practice followed could not be said to make for efficiency and economy in management.

Cost Plus Contracts Not Uniform

Most of the contracts subsequent to July 1, 1922, the date of the so-called shopmen's strike, were on a cost-plus basis. Three locomotives were sent to American Locomotive Company and seven locomotives to the Baldwin company during July and August, before the execution of any contracts. The first contract executed subsequent to the strike was with the Baldwin Locomotive Works on August 10, 1922. Contracts were also entered into during August with the McMyler-Interstate Company, Cleveland, Ohio, Ferguson Allan Company of Buffalo, N. Y., Crucible Steel Company of Harrison, N. J., and the American Locomotive Company of Schenectady, N. Y. The contract with the American plant provided that a flat price should be made after the inspection of the locomotive. No definite number of locomotives was specified. The four other contracts were on a cost-plus basis. The contract with McMyler-Interstate Company, covering not less than 50 locomotives, provided for the cost of material, cost of productive labor, plus 200 per cent of direct labor cost for overhead, plus 25 per cent of total labor and overhead cost and 15 per cent of material cost for profit, and, in addition, a placing charge of $300 per locomotive was made; with the Ferguson Allan Company for cost of direct labor, plus 80 per cent for overhead, plus 15 per cent of direct labor and overhead for profit; and with the Crucible Steel Company for the cost of material, cost of applied labor plus 125 per cent for indirect labor, plus 100 per cent of applied labor and indirect labor for overhead, plus 10 per cent of total applied and indirect labor, overhead, and material costs for profit. Respondent agreed to give the Ferguson Allan Company a minimum work of $50,000 for the first six months, and $25,000 for the second six months, and to give the Crucible Steel Company repairs to 200 locomotives at a total cost of not less than $2,000,000. It is to be noted that there is a striking variation of the overhead costs in the contracts made about the same time.

Two contracts were made in September 1922, one with the Austin Machinery Company of Muskegon, Mich., on September 5, for repairs to not less than 50 locomotives, and one with the Buffalo Machine & Iron Corporation on September 18, for a minimum of eight locomotives per month for six months. The Austin Machinery contract provided for the cost of repairs to be determined by the cost of productive labor plus 200 per cent for overhead, plus 25 per cent of labor and overhead as profit, and cost of material plus 10 per cent; the contract with the Buffalo company by the cost of material plus 10 per cent, cost of direct labor, plus 90 per cent for overhead, plus 10 per cent of labor and overhead for profit. An arrangement for repairs was made with Staten Island Shipbuilding Company during the latter part of September. The written contract executed October 25, 1922, provided for repairs at the cost of applied labor plus 110 per cent and cost plus 25 per cent of the material supplied by builder, and 15 per cent of the value of the material furnished by respondent. Two contracts on a cost-plus basis were made in November, one with J. P. Devine Company of Buffalo, N. Y., to cover two locomotives sent to its shop in October, and one with American District Steam Company to cover cost of repairs to a locomotive sent to its shop in October.

In all of the above contracts respondent paid the cost of inspection as well as the freight charges both on material it furnished and on the locomotive. In several instances, such as the arrangements with the Ferguson Allan Company, Buffalo Machine & Iron Corporation, the Devine Company, and the American District Steam Company, the contract provided that if the contractor furnished the materials he would receive payment therefor on basis of cost plus 10 per cent.

The percentage additions under various contracts to productive or applied labor obviously resulted in costs greatly in excess of those in respondent's shops. The Crucible contract, the most striking in this respect, contemplated a percentage addition to the applied or productive labor for indirect labor, overhead and profit of 395 per cent; McMyler-Interstate of 275 per cent; and Austin Machinery Company, of 275 per cent. In other words, for every dollar of productive labor applied, respondent paid $4.95 to the Crucible Company, $3.75 to McMyler-Interstate, and $3.75 to the Austin Company. The total cost of applied or productive labor on 12 locomotives repaired at the Crucible plant was $144,359.74, and the amount added to productive labor for indirect labor, overhead, and profit was $570,220.96; the cost of productive labor on 11 locomotives at the McMyler-Interstate plant was $81,294.65, and the amount added for overhead and profit $23,560.29; the cost of productive labor on 9 locomotives at the Austin Machinery plant was $57,667.20, and the amount added for overhead and profit, $158,584.80. The material used by respondent in the repair of locomotives in its shops averaged 36.9 per cent of the total cost of labor and material, while the material used in the contract shops averaged a much lower percentage of the total cost, being as low as 6.3 per cent in the case of the repairs at the Crucible plant.

The total amount paid for classified repairs on the 106 locomotives was $3,157,500.60, including $199,000 for the cancellation of two contracts. The cost of repairing 92 of these locomotives in outside shops was compared with the cost of like repairs to similar locomotives in respondent's shops during the same period. No comparative cost study was made respecting the five locomotives receiving class 1 repairs at the Lima plant and the nine at the Baldwin plant, as no similar repairs were made in respondent's shops during the same period. In arriving at the cost of repairs in outside shops we used the contractor's total invoice, which included materials, labor, and the percentage additions, and to this sum added the cost of materials furnished by respondent, freight on the locomotive, the costs of inspection, and in two instances payments for cancellations. The applied labor in the contract costs includes only the direct physical labor of the men doing the work and does not include superintendence. In computing the cost of repairs to locomotives in respondent's shops we used the cost of labor including shop expenses, and the cost of materials including store expenses. The shop and store expenses included cleaning and handling material, power, heat, lights, etc. The freight charges on the material to the storehouse are included in the company costs. No overhead, however, was added for taxes, depreciation, maintenance, or interest on investment, as such charges would not have increased had the additional locomotives been repaired in respondent's shops, but the allocation per locomotive would have been reduced. A comparison on this basis is proper, as respondent would have saved the excess costs if the repairs had been made in its own shops and its own overhead expense was in no wise diminished by turning these repairs to outside shops.

Cost of 92 Repairs 438 Per Cent of Road's Shop Costs

The total cost for repairs to the 92 locomotives at outside shops was $2,820,281.60, while the cost of substantially similar repairs on the same class of locomotives in respondent's shops was $642,705.54. The total cost in the outside shops was about 438 per cent of the cost of performing the same work in respondent's shops. The total excess above the cost of similar work in respondent's shops is computed to be $2,177,576.06, and this amount would have been saved had respondent performed the work. There is no uniformity in the amount of excess per locomotive in the different shops, which ranges from $4,268.02 at the Devine plant to $78,172.12 at the Crucible plant, but the average excess was $23,669.30 per locomotive.

The cost of repairs to many of the locomotives was greatly in excess of the cost of similar new locomotives. It is also observed that in one instance the cost of repairs was almost three times, and in several instances almost twice, the reproduction cost of a similar new locomotive.

In many other instances the cost of repairs exceeded the reproduction cost new of a like locomotive. The total cost of the six locomotives repaired at the Staten Island Shipbuilding plant was $213,604.25, while the reproduction cost new of similar locomotives was $183,257.60; the total cost of repairs to nine of the 11 locomotives repaired at the McMyler-Interstate plant was $404,432.61, while the reproduction cost new of similar locomotives was $354,552; the total cost of four of the nine locomotives repaired at the Austin Machinery plant was $170,775.72, while the reproduction cost new was $154,496.

Respondent states that the contracts subsequent to July 1, 1922, were the direct result of the shopmen's strike. It states that, after failing in an attempt to make an individual settlement with its men, it manned its shops in the best possible manner; that the output of its shops would not take care of the increasing demand for power; that the supply of serviceable power was diminishing; and that it investigated every outside shop on its line that possessed a potential power of making repairs, and induced these shops to enter into contracts for repairing its equipment.

None of these contractors, except the Baldwin, American and Lima companies, had repaired locomotives. The Baldwin and American plants were better equipped to perform repair work but were said to be unable to accept all the repair work offered at that time by the various carriers. Respondent states that new locomotives were not available; that it was necessary to furnish an uninterrupted flow of transportation; and that the management considered no expense too great to maintain transportation. Respondent made a settlement with its striking shopmen as of September 28, 1922.

Clearly, economy and efficiency of operation were disregarded in making new contracts and in sending out additional locomotives while negotiations were being conducted for a final settlement with its striking employees during the latter part of September. Negotiations were concluded during the latter part of the month and the strike terminated effective September 28, 1922. However, during the last half of September, respondent made new contracts and sent out 20 locomotives to outside shops for repairs.

Although the strike was settled as of September 28, 1922, and respondent's employees returned to work, respondent continued to pay excessive amounts for repairs to its locomotives in outside

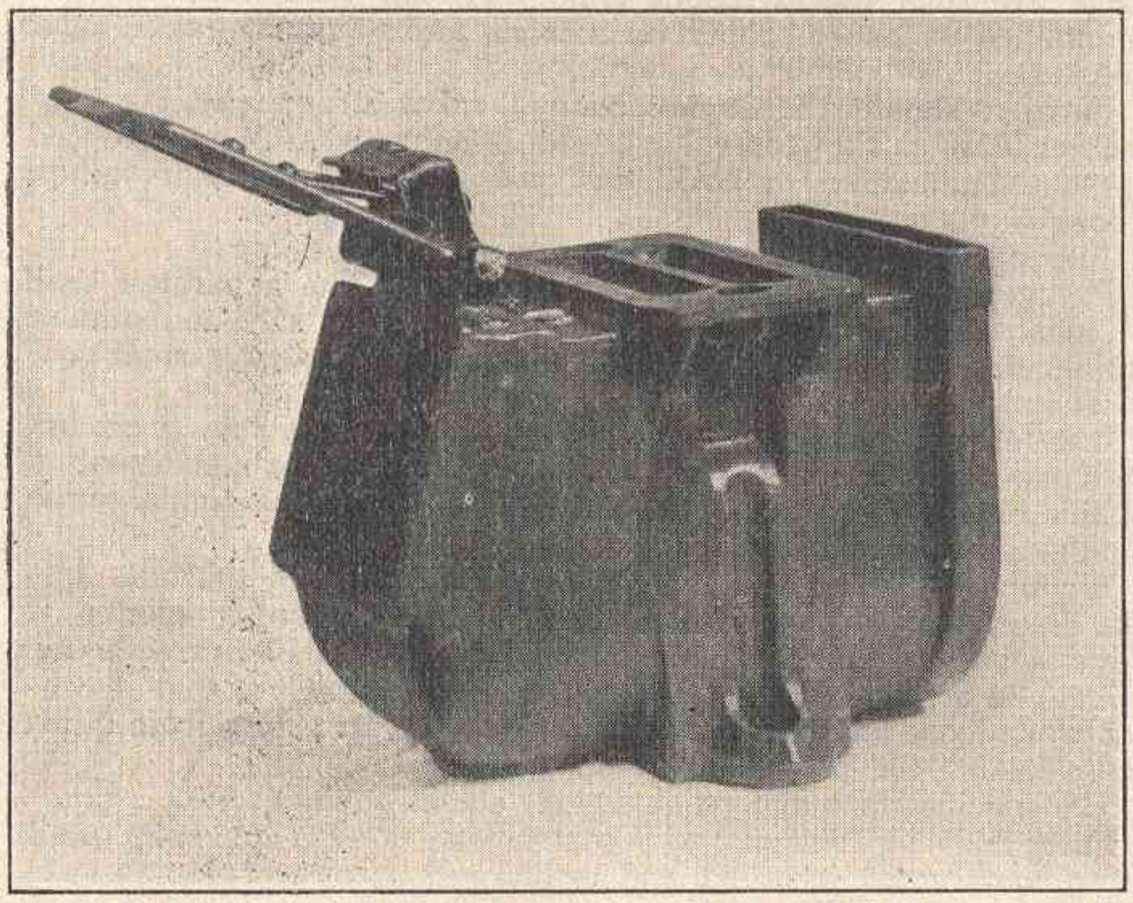
shops even though it could have employed almost an unlimited number of skilled workers. Subsequent to October 1, 1922, 29 locomotives were sent to outside shops for classified repairs, and certain additional contracts were entered into. Respondent states, however, that it desired its equipment to be repaired as soon as possible, and that it felt morally obligated to send further repairs to the contract shops.

Criticism Aimed at Costs, Not at Contract Principle

Our criticism here is not directed to the fact that the equipment was sent to outside shops, but to the unreasonable and excessive costs for such repairs at such shops. Clearly, the excessive costs for repairs on those locomotives sent to outside shops prior to July 1, 1922 and subsequent to September 15, 1922, were not incurred in the interest of efficient and economical management. There is also grave doubt as to the immediate necessity for sending out equipment for repairs during the period from July 1 to September 15, 1922, and certain facts should be pointed out bearing on the wisdom of respondent's action in so doing. There was no greater demand for power during this period than during the early part of 1921 when certain of respondent's shops were closed for intervals of from one to three months. As a general policy respondent reduced its shop forces during periods of depression, resulting in a like reduction in the output of repairs. Past experience had demonstrated that the locomotives sent out would not be, and in fact were not, available for service for several months. Respondent's witness, however, gives as an additional reason for sending its equipment to outside shops that such action helped to settle the strike. Assuming, however, that the resort to outside shops was necessary during this period, the great variation in the overhead charges in the contracts executed at about the same time indicates a disregard of efficiency and economy in management, and respondent has not justified the tremendous increase in costs nor the extraordinary allowances for overhead which to a great extent made up such excessive costs. The record compels us to regard these expenditures as improvident.

Self-Fitting Torsion Spring Journal Box Lid

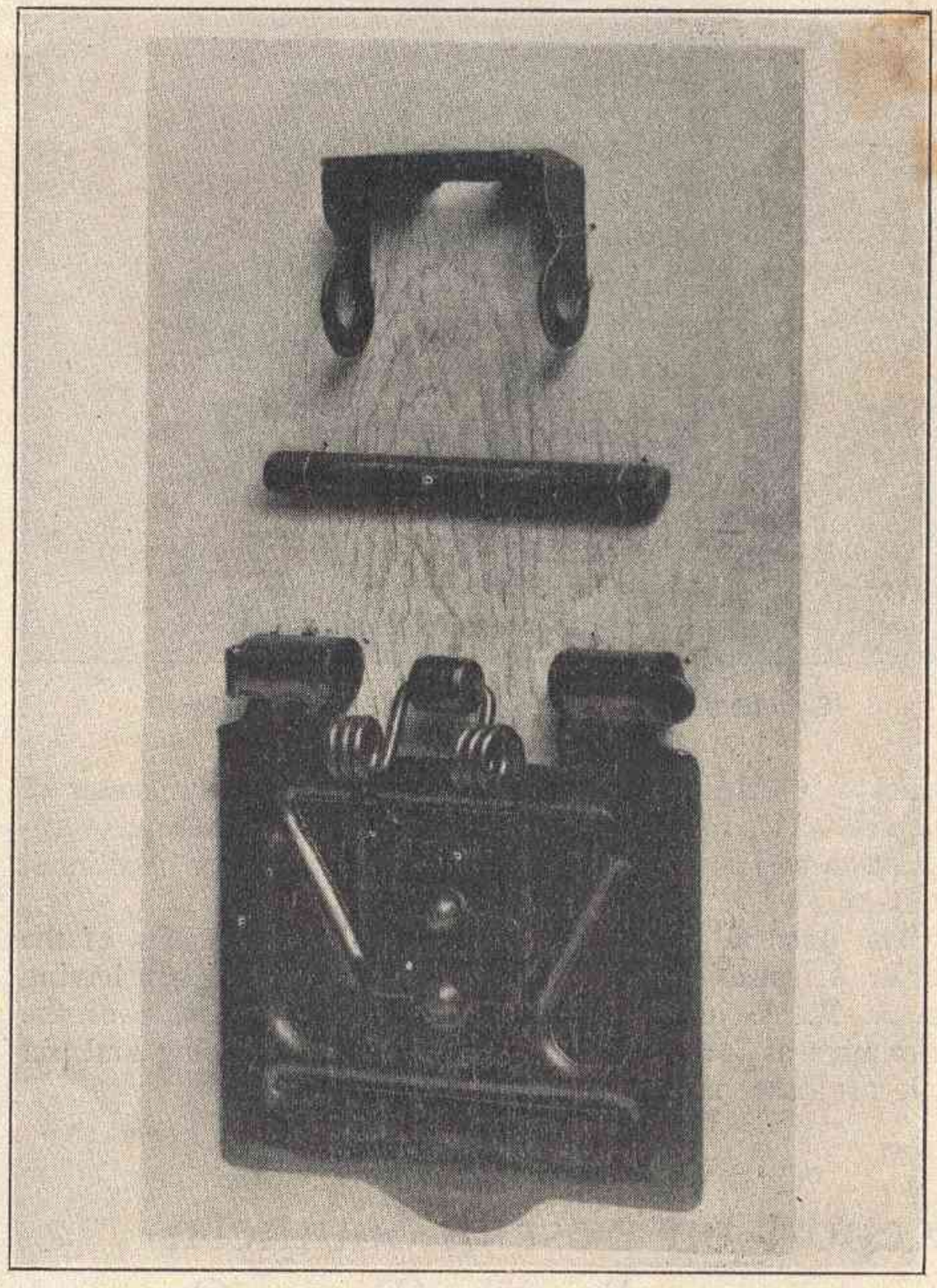
A NEW DEPARTURE in journal box lid construction has been developed by the Allegheny Steel Company, Brackenridge, Pa., in the Asco self-fitting, torsion spring lid illustrated. The main objects sought in the design of this lid are the elimination of wear on the journal box lug and the provision of a lid which will bear equally on the top, bottom and sides of the box face, consequently preventing dust and dirt from getting into the journal box and cutting the journal.



View with the Lid Open—The Pin is Retained by the Bent Down Scroll

Referring to the illustrations, the construction and operation of the lid will be at once apparent. The roller bearing on the box lug increases the spring efficiency and practically eliminates wear. Moreover, reference to the assembled view shows that the spring action is against the center of the lid, causing an equal pressure at the top and bottom of the box face. The scroll is elongated, providing clearance between the pin and the scroll, which allows the lid to go up tight against the top and the bottom of the box face. The elongated scroll also makes the lid independent of the diameter and location of the pin hole or the diameter of the pin. Another feature (present in former lids made by this company) is the turn down scroll which permits the use of a headless pin and also forms a positive lock for the pin.

The Asco journal box lid has been thoroughly tested in service and can be applied by any car man without special training in a fraction of a minute. The tools required are



Parts of the Asco Journal Box Lid—The Spring Retainer is Shown at the Top

a light hand hammer for turning down the scroll and a short pinch bar for snapping the spring retainer into its locked position.

The lid body is made of ⅛-in. pressed steel, properly embossed to provide stiffness. It has a rib on the inside just above the bottom side of the box face to cause any oil which is condensed to flow back into the box. Flanged edges provide greater strength and assist in keeping dust out where high spots exist on the box face.

The scroll has extended ears, the left ear being bent down in manufacture, the right being bent down after the lid is applied to the box. The left ear covers only one-half of the hole in the scroll so as to permit the use of a drift, should it be necessary for any reason to drive out the pin and remove the lid. The eye of the scroll is integral with the lid and is closed by electric welding. The elongated scroll permits the use of a headless pin, eliminating the necessity for apply-