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# MILWAUKEE TRACKS

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A WESTINGHOUSE EP-3 BOX CAB  
ELECTRIC LOCOMOTIVE IN MILWAUKEE  
ROAD LIVERY



The Story on Page 2

# **The Westinghouse Early Box-Cab Electric Locomotive**

by: John Gray 1-6662 (see cover illustration)

The Westinghouse Corporation was established in the late 19<sup>th</sup> Century by George Westinghouse, and almost from the beginning it was in competition with General Electric (Thomas Edison) in the field of electrical engineering.

In 1895 the Baldwin Locomotive Works of Philadelphia joined with Westinghouse to develop AC railway electrification, running neck and neck with GE-ALCO in designing and producing electrified railway cars and locomotives. The early Westinghouse EP-2 and EP-3 electric box cab locomotives first began service around 1915, and in 1919 the EP-3 Quill drive 2-C-1 + 1-C-2 electrics were in operation on the Milwaukee Road Railway, which operated in the Mid-West and the Pacific North West (*see front cover illustration*)

The Westinghouse EP-3 had six 566hp double traction motors mounted to the frame with one above each drive axle. It has twelve 68 inch drivers and was a double ended unit designed for high speed passenger service. It was 69 feet long and weighed 175 tons, with a top speed of 70 M.P.H., developing 3400 HP - 1 hour 4800 HP, with a tractive effort of 50,000 lbs.

The EP-5 had large pantographs, using an overhead catenary system, and ran on 3300 volts AC. These units were quite different from the early General Electric S-1 series 660 volt DC locomotives, which required an electrified outside third rail contacted by an extended pickup shoe.

In 1891 Westinghouse had made substantial improvements on the earlier Sprague traction motors, producing the first electric traction motor that included most of the requirements that later became the standard: series armature winding, machine wound coils, and four field coils, with a gear ration of 4-1.

This included a hinged cover containing the field windings that enclosed the armature and provided protection, while giving better performance, There was also a single drive gear, and the pinion and gear were enclosed in their own oil-filled case (*see illustration of next page*).

By this time most of the basics for the modern DC traction motor were then in place, which remained in use for the next 100 years.

Continued on page 3....

# **President's Column**

by: Don Lewis

Continued from previous page.....

## Ives and the Westinghouse Box-Cab Electrics 1924-1930

After the success of the Ives 0-Gauge, 1-Gauge, and the Wide gauge toy electric locomotives designed after the early General Electric S-Series center-cab electric locomotives, the Ives Company turned its attention to the early box-cab electric locomotives coming into use on America's railroads, many of which were designed and developed by the Westinghouse Corporation. These included several types of smaller and larger electric locomotives used by numerous American railroads.

From 1924 to 1930, Ives produced a line of Wide Gauge box-cab electrics styled after the New Haven type, which came in several colors, with a cast-iron frame, stamped steel body, and four drive wheels. It included small brass pantographs (one or two) with a single headlight, and metal railing on the roof and ends. It had three windows on each side with louvered ventilators in between.

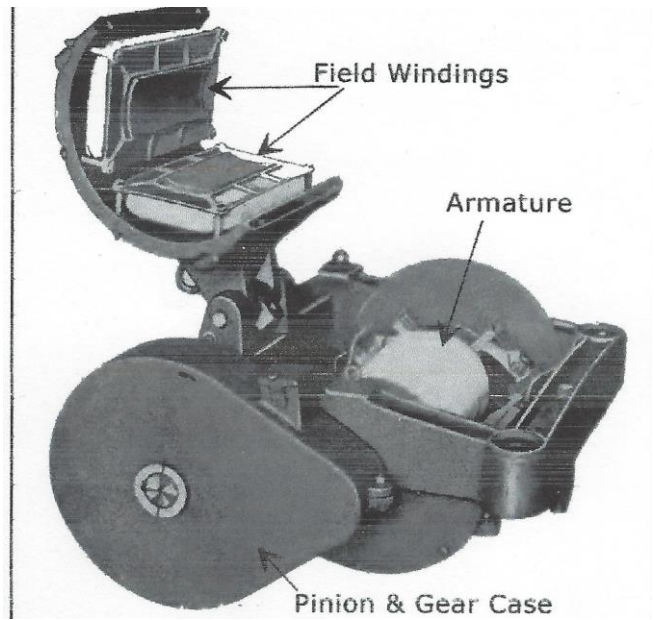
The 3235 had a hand reverse, and the 3235R had an automatic sequence reverse. They were rubber stamped "THE IVES RAILWAY LINES" under one window and "N.Y.C. & H.R." under the other. These were later produced with brass side plates and stamped steel frames mounted with brass air tanks and springs over the journal boxes.

After the takeover in 1928, Ives started using Lionel parts, and the cab was from a Lionel #8 with stamped steel body and frame. The Lionel cab was heightened to allow clearance for the larger Ives motors, and the window frames were brass.

It wasn't until 1932 that Ives produced, for one year only, the beautiful #1764 electric bod-cab locomotive with its long graceful lines and terra-cotta and maroon colors. This much more closely resembled the Westinghouse EP-2 and EP-3 electric box-cab locomotives then in use on the nation's railways, see Track issue of March 2019.

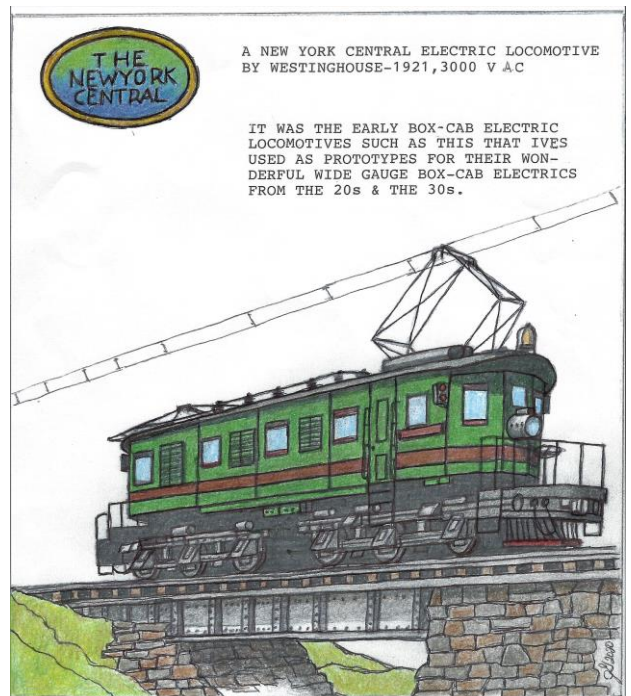
It was manufactured for one year only with a set of 1766, 1767, and 1768 matching passenger cars in Wide Gauge. It was essentially a Lionel set, and represented the last of the truly beautiful trains offered by Ives before the Company closed its doors forever. As far as I know, Ives never produced a line of 0-Gauge box

cab electric-style locomotives.



Above: The Westinghouse electric traction motor

Below: John Gray drew two covers of the Westinghouse Electric for Tracks. The one used on the cover represents the Milwaukee Road electric, and the one below represents the New York Central Lines electric.



# Finding Ives in the Most Unusual Places

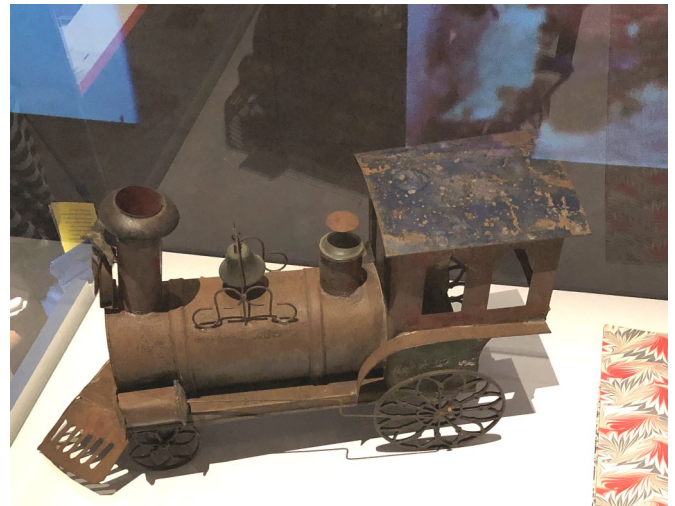
By: Kevin Harbison

This past June my wife and I visited the Denver Art Museum and walked through the *Serious Play: Design in Mid-Century America* exhibit. The exhibit showcased how many factors – new materials and manufacturing processes, more disposable income and leisure time, an emerging focus on child development and Cold War anxiety – had an effect on design ideas for the American home, children’s toys and play spaces and corporate identities in the 1950s and 60s.

Imagine my surprise when I walked up to a display case of the *House of Cards* game designed by Charles and Ray Eames in 1952. On display was a card that pictured an Ives floor train – with the model for the photo right next to it! (As you can see in the photo, the date of the train model is “unknown”. Perhaps they should have contacted someone from the Society to help date it for them?!?)

Just before leaving the exhibit we passed a large screen that was showing *Toccata for Toy Trains*, a 13.5-minute film created by the Eameses in 1957. The vast majority of trains depicted in the film appear to be prewar European models. However, at the 10.5 minute mark what looks to be an Ives No. O IMC set appears onscreen: an F.E. 1 locomotive pulling a 50 US Mail Express and a 51 Brooklyn car. The film is very charming and is easily available on YouTube. They must have had a significant budget for this as I noticed in the credits that Elmer Bernstein composed the score. This would have been only a year after he did the music for a little film called *The Ten Commandments* and before he went on to do *To Kill a Mockingbird*, *The Great Escape*, and *Airplane!* - among many other movies.

This just goes to prove that you never know where an Ives train is going to pop up. In retrospect, I shouldn’t have been surprised to see an Ives train on display in an art museum. We in the Society have known for years that Harry Ives turned out works of art. It’s time the general public knew that as well!



## CORRECTION TO THE JUNE 2021 ISSUE OF “TRACKS” *Malcolm Laughlin, (member I-7158)*

As an NYC fan, I enjoyed the article about the S motors (as we called them on the NYC), but there are two significant errors that I saw. First, 1904 is the year the first S was built, as a prototype. The use of these motors in road service did not begin until late 1906, when the first segments of suburban line electrification were placed into service. Other sources say that the first locomotive hauled train from Grand Central Terminal was in January of 1907. I've sent an inquiry to the NYCSHS members group to see if I can get an exact date. Secondly, the comment about the use of the pantographs is wrong. There was no tunnel with a charged overhead system. There were overhead third rails only over the long series of double slip switches in “GCT”. The problem was that the gaps in the third rail were so long that if an engine stopped, it might have no shoes in contact with the third rail. Normally momentum carried the locomotive across the gap. But when a motor got caught in the gap, the pantograph was raised to get back to third rail contact. then the pantograph was lowered. This was the only use of the pantographs that we see on so many tinplate models of NYC “S” and “T” motors.

## Comments by John DeSantis: **THE RARE 1930 IVES CIRCUS WAGON TRANSPORT CAR**

The guys in the design room at Ives started thinking about creating a "Circus Train" in the mid-1920's. They gave credit for the idea to their boss, Harry Ives, who on a number of occasions noted that Bridgeport was also the home of P.T.Barnum himself, the Barnum Museum, and the Winter Headquarters of The Greatest Show On Earth. Their first effort was to mock up an O Gauge version, which just sat on the shelf for a couple of years and never was produced. Then in 1927 they began in earnest to create a 2 1/4 Gauge set. It was first announced to the public in a full page ad that appeared in the Barnum & Bailey Circus programs as they toured the country during their 1928 season. The set utilized Ives regular production 1928 freight cars, in bright circus yellow/red colors and special rubber stamping. The flat cars were modified with wheel blocks to hold in place animal cage wagons and ticket wagons when the train was in motion. After the Ives bankruptcy in Summer 1928 and the takeover by Lionel and American Flyer, the set was reworked for 1929 using American Flyer bodied stock and box cars but retaining the Ives body flat cars for the wagon loads - all again in the bright yellow/red. But by 1930 American Flyer was gone; Lionel was now the sole owner. For the Circus set, this meant that there were two different one-year-sets: the 1928 with Ives freight bodies and the 1929 with AF freight bodies. But there was a THIRD Circus Set - the 1930 version, even more rare that it's two brothers. Shown here is a comparison of the 1929 Circus Set (upper shelf) and the 1930 Circus Set (lower shelf). The differences are in the two 1134 locos - from 1929 with high headlight and 1930 with integral boiler-front headlight - and the flat cars which carry the circus wagons. For 1930 the flat cars are changed to normal 1930 production - orange Ives body with decals on the side panels - with the car decks modified in a different way to prevent the wagons from rolling off. Instead of the wheel blocks used in 1928 and 29, these cars utilized an Ives axle ground down on one end and inserted into a hole at either end of the car. Beneath the deck, a knurled nut as used on transformer terminals has been soldered under each hole to form a receptacle for the upright post. Of course, by 1930 top of the line sets were finding fewer and fewer buyers. This accounts for the rarity of all transition era premium sets like the Olympian and National Limited - with the Lionel-bodied ones (1930) being the more difficult to find. In the case of the 1930 Circus Set, I am only aware of this one survivor. We speculate that there was an attempt to clear out the last of the AF bodied circus cars and that some regular production flats were needed to finish the sets. So the quickest possible modifications were made, and the inventory cleared.





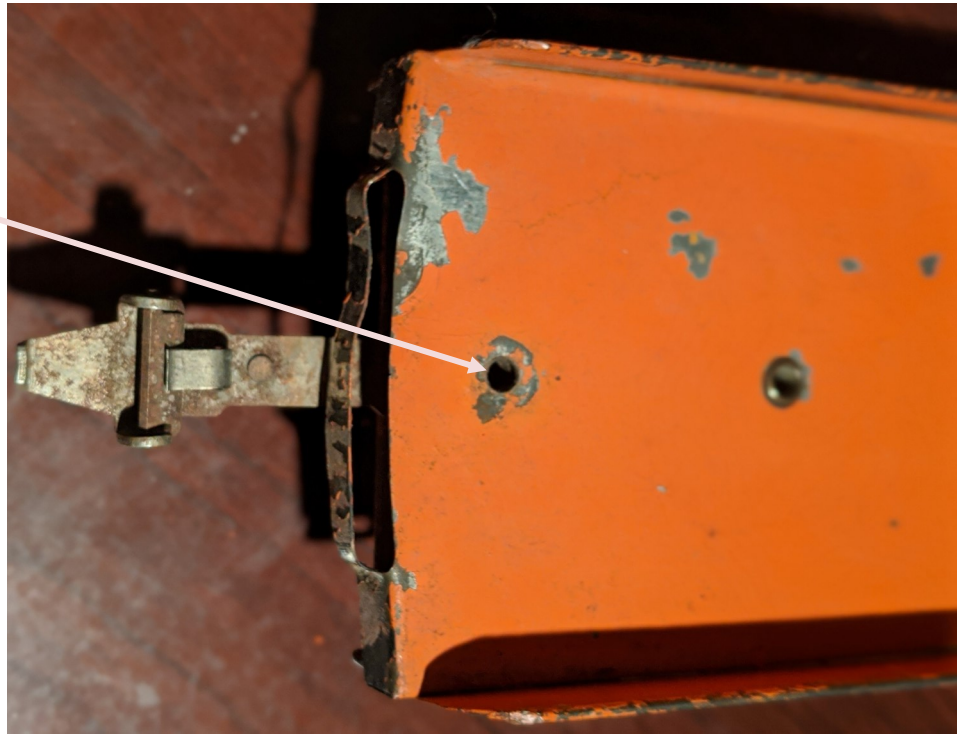
Top: Comparison of 1928/1929, yellow, rubber stamped, circus wagon cars with the extremely rare 1930 wagon cars that are highlighted with decals and painted orange. The decals do not state "Ives Railway Circus", but state on the left "IVES R.R. LINES" and on the right "IVES NO. 196". Basically what makes these circus wagons in 1930 is the metal pin used at either end of the wagon to support the cages as shows below.



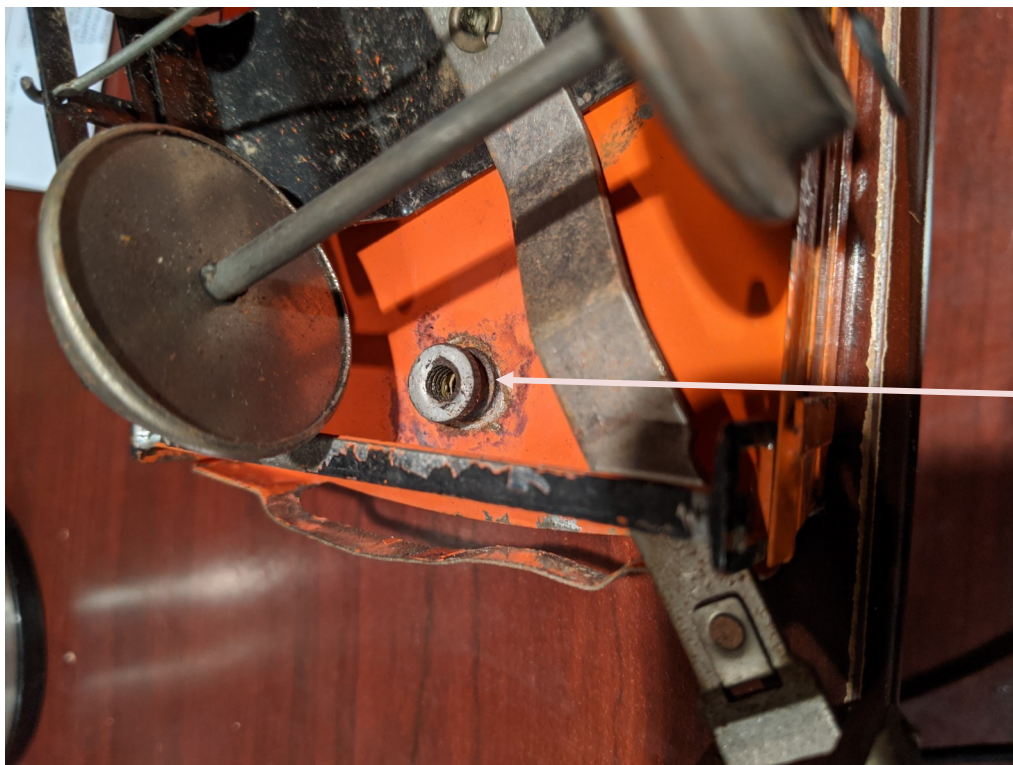
Top: Comparison of wagon supports

The regular 1930 orange flat cars (decals on the side panels) only have the holes in the car floor that formerly were used to secure the couplers - before the switch to snake-pull. These coupler holes remain on all snake pull era flat cars; obviously Ives didn't bother to change the punching dies. The regular 1930 cars do not have an added bushing below the car floor.

Right: Normal hole that was used to secure the coupler before snake-pull



On the circus cars, Ives reused the former coupler holes. On the underside they soldered a knurled nut - the same ones used on transformer terminals. This receives the shaft of the axle that serves as a retaining post for the circus wagons. As shown in the photos that I posted, one end of the axle has been ground down so that it will fit down into the receiving hole.



Left: Underside of a 1930 Circus wagon car showing a knurled nut soldered to support the wagon support pin.

# **Toy Trains and Tariffs, Part III: Prelude to 1921, Harry Ives and the Tariff of 1913**

By: Eric W. Cook

A with historical research, new documentation has come to light. Lurking in the Congressional Record was another Ives document. Due to the loss of the Ives Corporate papers and a paucity of surviving private papers, it is rare to have new primary information about Ives. One of the things that struck me while researching my two earlier articles about Harry Ives' personal testimony before congress committee hearings in 1921 was that, despite his polished manner while addressing the political and large-scale economic issues at stake in the pending tariff changes, Ives' answers were rather desultory when answering questions about his firm's operation. It was especially stark to contrast his vague responses with the details that came tumbling out of W. Ogden Coleman about the operation, accounting, and production techniques at American Flyer. This newly letter located has led me to a slightly different conclusion than those proposed in the earlier articles.

November of 1912 saw the defeat of the incumbent Republican, William Howard Taft and the election of Woodrow Wilson to the office of the President of the United States. Wilson's coat-tails carried the Democrats to power in both houses of Congress. Today when Americans remember Woodrow Wilson, they mostly think of his foreign policy issues, his regressive racial policies, or his involvement with World War I and its aftermath. However, for most Americans in 1912, the issues at stake were almost exclusively economic. Wilson had campaigned on establishing his "New Freedom" program, an alternative to Teddy Roosevelt's "Square Deal." Wilson naturally rejected Taft's more conservative Republican agenda, but also the more traditional Democratic economic policy which sought to balance *laissez-faire* generated growth and agricultural populism. Wilson did continue one traditional Democratic economic ideal – low tariffs. Besides the Taft-Roosevelt grudge match Tariff reform was the primary hot-button issue during the campaign of 1912. Wilson, as a progressive Democrat, felt the need to appease the agricultural wing of his base, especially in the South and the West. He also desired to move the nation toward his American version of a Prussian state socialism, the cost of its social programs to be borne by a new graduated income tax. Income tax was a reform supported by a majority of Americans across the political spectrum. Wilson felt some pressure to outflank the Republican Progressives and to hold off more radical alternatives; after all, Socialist Presidential candidate Eugene Debs had just taken 6% of the popular vote. Wilson, though winning the election with a plurality of 42%, only did so because Theodore Roosevelt, running his third-party Bull-Moose ticket, split the Republican vote and ensured an Electoral College win for the Democrats.

Harry Ives in late 1912 and early 1913, was the treasurer for the Ives Manufacturing Company, and he was busy preparing to open a new showroom in New York City in the Fifth Avenue Building at the corner of Fifth Avenue and Twenty-third Street. His father Edward was still working daily but had already passed much of the executive operation of the company to Harry. The company was busy pushing the electric train line to new heights and experiencing substantial growth, but the recent congressional and presidential results must have alarmed the firm. Shortly after the Christmas rush subsided, Harry Ives penned a lengthy letter against the proposed changes to the United States Tariff schedule, the most significant proposed lowering of rates on imported manufactured goods since the Civil War and Reconstruction. Wilson moved quickly to enact his legislation. Congressional hearings held in the winter and spring of 1913 would determine the tariff rates and the effect on American manufacturers; indeed it would have far-reaching and permanent consequences in the structure of our



national revenue. On January 6, 1913, the Ways and Means Committee of the House of Representatives announced a schedule of hearings on Sundries rates, which would include toys (Schedule N), to be held on January 29. Ives' letter was dated January 25:

Gentlemen: ...Our business on the mechanical railways started in a small way in 1900, and at that time met with almost a failure; but persistence on our part and radical changes in construction brought it more into favor during the two or three years following. Another radical change in construction brought it rather more into competition with the foreign product, which, at that time, was not as substantial nor as well made as it is at the present time, and by our efforts and constant improvement we not only raised the standard of our own goods, but were the means of raising the standard of all imported articles of a similar character.

It was predicted by many that goods of this character could not be successfully manufactured in the United States, but we have demonstrated that it can be done. We have now a very nice business established, and our product enjoys considerable popularity. We are frank to confess that the German manufacturers do not appreciate our efforts and the last two years have been offering extraordinary values in order to take business away from us.

We have had to protect ourselves as best we could. The means adopted was that of publicity work. This, as you may know, is very expensive, and we spent large sums to keep our product in the minds of the American buying public. All of this has rendered the net returns much smaller than that ordinarily received from manufacturing concerns doing a corresponding amount of business.

We employ 75 hands which are more or less skilled in work of this character, and during the last six month of the year the number is increased to 130. A large amount of machinery and dies are also necessary to produce our goods.

Three years ago we added electricity to our lines, so that we manufacture both the electric and mechanical railways. You will note by looking through our catalogue that we make a large variety of accessories and equipment, all of which go to make a complete railway, and we feel that these items when handled by a small boy, act more or less as an educational feature.

Our business has been built up under the present tariff rate, [established in 1909 under the Payne-Aldrich tariff law] and we know that if you were to make a careful perusal of our books and note the annual statements they would prove to you conclusively that we were none too well protected.

As we understand that there would be no chance of any raise in the tariff, we take this means of addressing you with the hope that you can see your way clear to at least have the tariff remain as it is. Even so, we will have to resort to all means to hold our trade against the ever increasing German invasion. Do not take it that we fear competition on an equal basis. In fact, we court it, as it is the stimulant of all business, but it is hard to meet it when handicapped.

The writer of this letter is willing to bring books and statements before your committee, but would, of course, hesitate about doing so in an open hearing. The representative of the American toys industry will tell you other important facts concerning this branch of business, which we know will be of interest to you in many respects.

The miniature railway industry of this country, which is showing rapid growth, would be more seriously affected by a change of tariff than some other items. At the same time, we are not offering this suggestion with the thought that we want more than our due...

Yours, truly,  
THE IVES MANUFACTURING CORPORATION,  
H. C. Ives, *Treasurer*.<sup>1</sup>

Aside from the puffing, ballyhoo, and complaints about unfairness, there is much interesting information in the letter, some of it “between the lines,” granting us insights into the strategy expansion, difficulties, and development in those early critical years of Ives track-train production. Harry Ives clearly hoped that he and other concerned toy manufacturers could persuade enough congressmen to oppose the tariff. The Congressional Record is full of manufacturers’ letters, some short, like A. C. Gilbert’s, some long and passionate like Ives, to form a veritable who’s-who of major American toy makers from the 1910s, among them Spaulding, Dayton Friction (Hillclimbers), Schoenhut, Kenton Hardware, Wilkins, Leo Schlesinger, and Daisy Rifles. The letter writing campaign seems to have had some direction from Albert T. Scharps, who was one of Lionel’s in-house lawyers and later treasurer, although interestingly, Lionel never appears in any of the Congressional material concerning the tariff schedule (either in 1913 or 1922). Instead, Scharps appears in the record as representing the “American Toy Manufacturers” a group unknown to me and perhaps an *ad hoc* predecessor to the Toy Manufacturers of the U.S.A. In an introductory letter, Scharps, singled out Ives’ letter along with a few others, for the force of its writing and its polemical value to the debate.

President Wilson made tariff reform a priority; it held a central position in his first inaugural address. Wilson then took the bold step of a direct presidential address delivered to both houses of Congress on April 8, 1913. It was the first time since 1796 that a sitting President had addressed Congress. The proposed lower tariff rates were to be balanced by increased revenue from the collection of personal and corporate Income Taxes, newly made constitutional by the passage of the Sixteenth Amendment. The amendment reached the necessary threshold for ratification on February 3, 1913. Both elements (tariffs and income tax) of the Revenue Act of 1913 or the Underwood-Simmons Act passed into law October 3, 1913. The Act supported by agricultural populists and progressive Democrats, with enough progressive Republicans crossing the aisle, was passed into law on October 3, 1913. Tariff reductions from the 1909 law were 40% to 26% on average, and a graduated personal income tax enacted, thereby shifting the traditional federal revenue collection system from a reliance on import and other excise taxes to one based on income. Additionally, corporate taxes rates rose from 1% to 2%. The Revenue Act was one of the most far-reaching pieces of legislation in the early 20th century and has determined the course of national fiscal policy from 1913 to the present.

Harry Ives was likely not pleased. It helps to explain why, when Republicans regained control of both houses of Congress and the Presidency in 1921, he was determined, with other toy manufacturers, to restore higher rates, thereby reducing German and other foreign competition. Ives’ role in one tariff debate probably led to his finding his place, eight years later, in another Congressional debate. Especially, since New Haven attorney and US Representative, John Q. Tilson mentioned the Ives Company and Harry Ives in particular at Charles Hoyt’s fiftieth birth celebration. Hoyt was Ives advertising firm, and at the party, Tilson served as the keynote speaker. He took the occasion to deliver

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<sup>1</sup> Congressional Record, Vol. 5, schedule N, Toys, p. 5215.

a tirade about US tariff rates. Happy birthday, Charlie; the entire speech was later read into the Congressional record in 1922!

The reticence that Ives employed when discussing his company's internal operations and fiscal policies in his later testimony before the US Senate subcommittee in 1921 takes on a new light based on statements in this letter from 1913. Harry Ives no longer appears as an out of touch manager, or patrician, but as he indicates in this letter, as a proprietor keeping his operational procedures out of the reach of his competitors' eyes and ears.

Around November 20, 1913, many American newspapers carried a small anonymous wire notice from Washington D.C., entitled "Millions Worth of Toys Imported." The article highlights the increasing disparity between sales of domestic and foreign toys in the pre-Christmas shopping rush, focusing primarily on German competition. The item states that US retailers imported nearly \$2,000,000 worth of toys in September alone, for an annual total of nearly \$11,000,000. "Germany is the largest source of supply for imported toys. Exports of toys from the United States amount to less than \$1,000,000 a year."<sup>2</sup> Only World War I and the later rejection of Wilson's "War Socialism" would stem toy trade deficit after the passage of the new tariff laws and rates in 1922. Perhaps some of the "lessons" from this period for the Ives Company was the need for both more public and better-organized efforts to bring American Toy manufacturers into greater cooperation and a more patriotic appeal to American consumers. As Ives research continues, one wonders if that policy, and attitude, has more to do with the demise of Ives than previously thought. Finding old documents is easy compared to other forms of research, especially in the internet age. I read with delight and awe the forensic articles that appear here as other collectors piece the company history together from the trains themselves. If only, those Ives company books and papers had survived, what we might learn. Trade policy, tariffs, and socialism are debated once more in the land, and the very different lessons Americans draw from our past, across the political spectrum, means that these issues will remain with us. Moreover, it is interesting to see how our favorite toy train company played a role in the development of American political and economic history in the early 20th century.

#### SOURCES:

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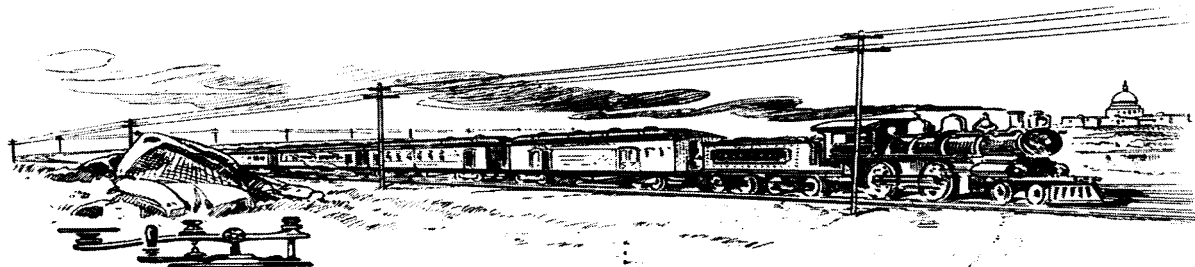
*R. L. Polk's Directory for 1919*

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<sup>2</sup> *Davenport Weekly Democrat and Leader*, November 27, 1913, pg. 7. As well of dozens of other local and regional papers, see newspapers.com

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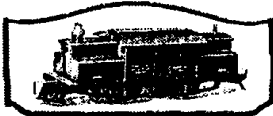


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