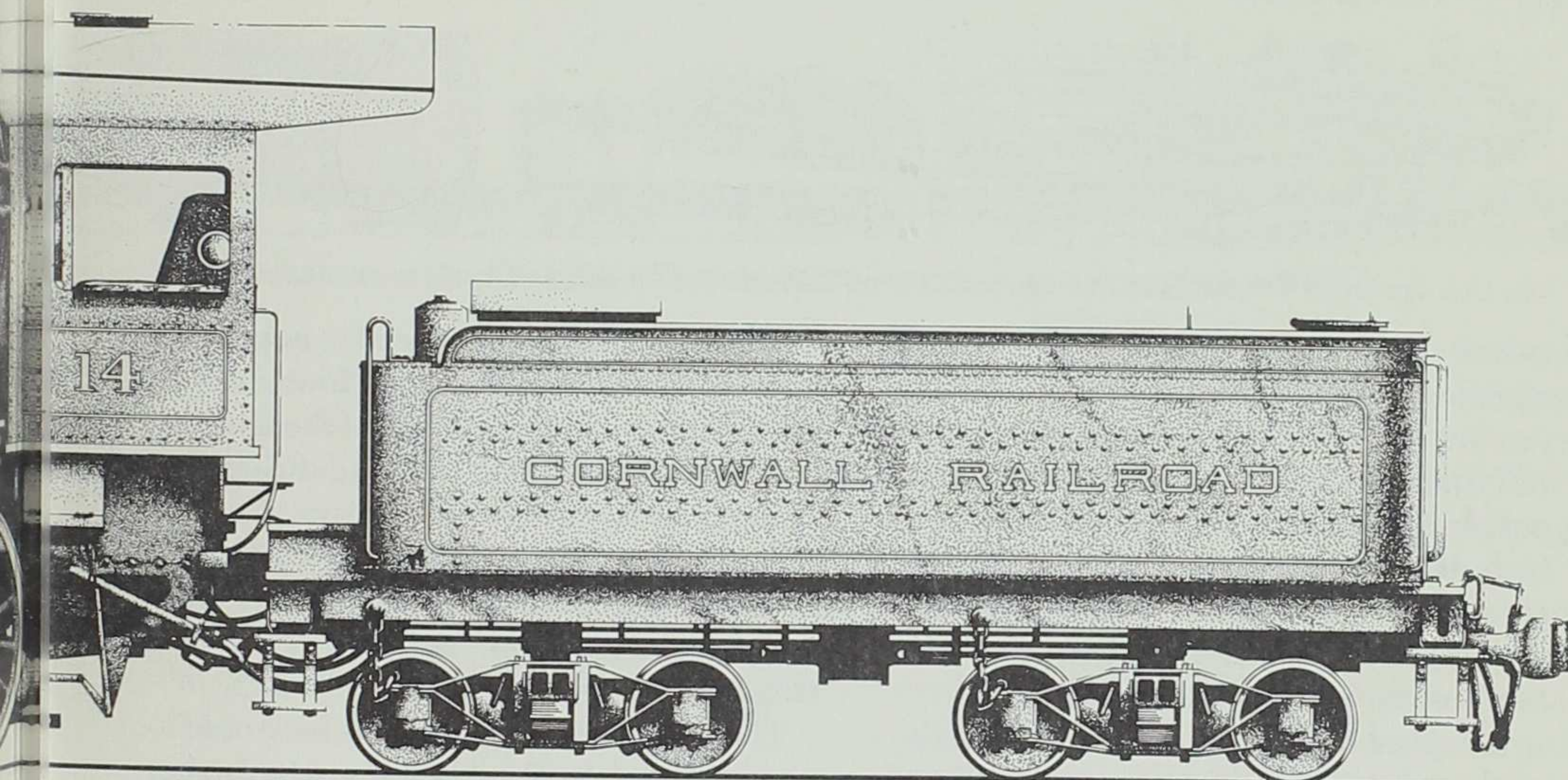


THE STEAM LOCOMOTIVE R

Text and Illustrations

by

James D. Young



The last 4-4-0 "American" type locomotive, built in 1921.

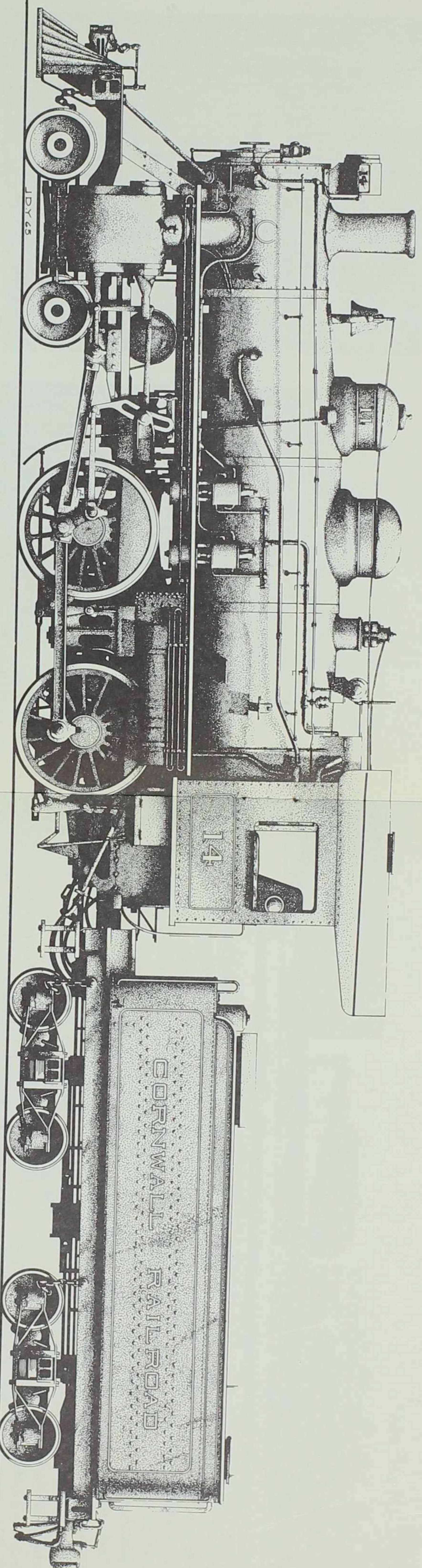
ROUND AND ABOUT IOWA

I was taking architecture and engineering courses at Pueblo Junior College in Pueblo, Colorado when I first decided to make drawings, historically accurate drawings, of steam locomotives. In those days I used to watch trains of dead locomotives being delivered to the railyards in Pueblo for scrapping. Very soon, I realized, these great machines would be little more than fading memories or, at most, vandalized hulks rusting beside some long-abandoned railroad station.

Most Iowans over 40 remember the steam locomotive as more than a means of transportation. It seemed to be a living, breathing thing, with a very real personality. Perhaps many who lived in the small towns along the right-of-way could recognize an engine by its sound alone, and even knew the engineer by how he played the whistle. And the trainmen learned the

qualities and quirks of their locomotive as they would come to know the eccentricities of a friend. If it was a poor steamer, they'd learn to coax it; if it was fine and nervous as a race horse, they'd learn to handle it. The locomotive was honest: nothing hidden. You could see all of its parts working.

The "Golden Age" of steam development began in 1925 when scientific and engineering expertise began to be applied to locomotive design. Before this the evolution of steam was pretty thoroughly a process of trial and error. The old "Q" — the Chicago, Burlington and Quincy — led the industry in locomotive development toward the end of the last century. Before 1880 the fire box that heated the locomotive's boiler rested on the frame between the rear drive wheels, as can be seen in the illustration of the Cornwall Number 14. But the "Q" introduced a set of wheels



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A typical engine from 1925, the product of the advanced engineering the railroads had begun to adopt, is the 2-8-2. These numbers refer to the arrangement of the locomotive's wheels: a 2-8-2 has two wheels up front, eight drivers in the middle, and two trailing wheels in the rear. By 1930 the Union Pacific was using A-12-2 9000 class locos as its standard freight "hog."

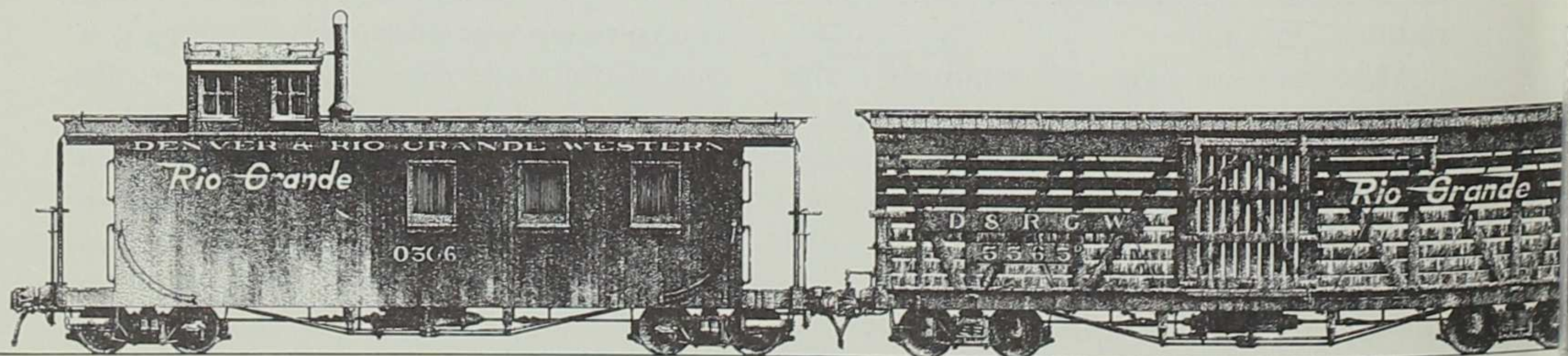
In that same year another important innovation was introduced when roller bearings were installed in axles and siderods. When these bearings became standard equipment in 1935, the Union Pacific was able to design its class 800 4-8-9 Northern to reach a sustained 110 miles per hour, although in practice the 800s cruised at 90 m.p.h. pulling 1000-ton passenger trains.

The 1930s and '40s saw the heyday of high-speed railroading, and Iowa had its share. I wish I had drawings of the Chicago and Northwestern's 4-6-4s and 4-8-4s that once roared across central Iowa. But the little Northwestern 0-6-0 yard switcher I have illustrated was a lovely little locomotive just as vital to the industry as the "Big Hogs."

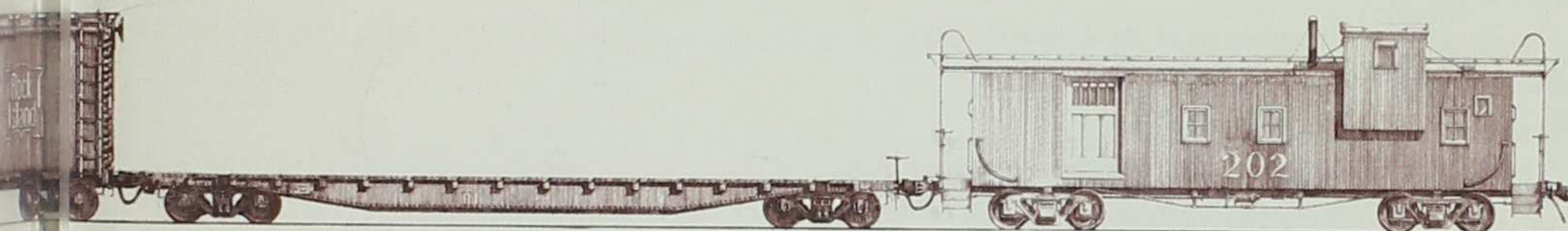
The Rock Island Line ran its fleet of general service 4-8-4 Northern — the largest such fleet in the nation — all over Iowa. Big, nicely proportioned locomotives, they could handle high-speed passenger service as well as fast freight.

Santa Fe track touched Iowa at Fort Madison on its way to Chicago. Between 1930 and '40 this road ran its high-speed 4-8-4s out of Los Angeles to La Junta, Colorado, where the 4-8-4 was exchanged for a faster 4-6-4 to complete the run to Chicago. These engines pulled the fabled Superchief at an average of 45 m.p.h. That does not sound very fast until we realize that the average included many station stops.

The "Q" ran 4-6-4s and 4-8-4s second to



Though Iowa once had narrow-gauge steam locomotives, the tracks were early changed to standard gauge.



CGW is long gone; the CRI&P is still struggling to operate as an independent railroad.

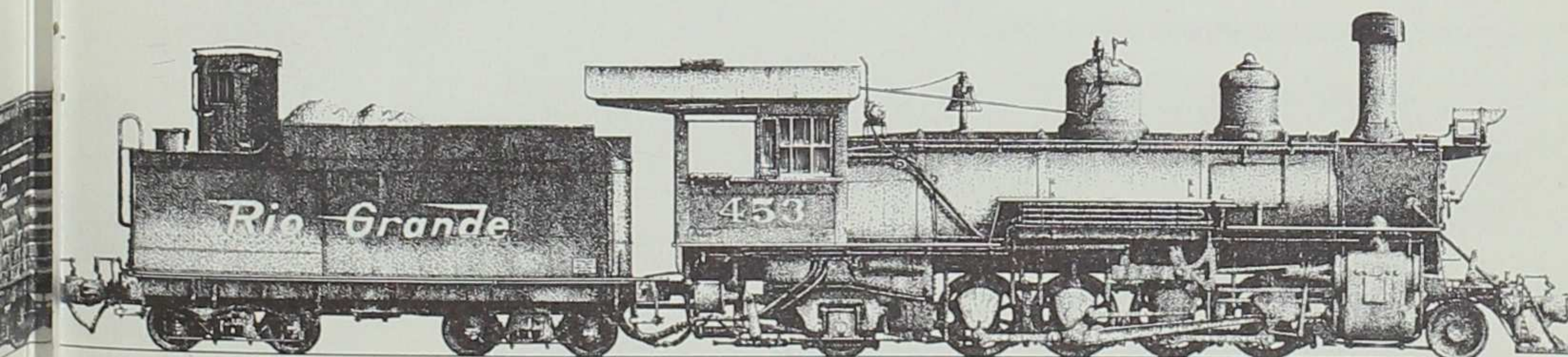
none along the raceway it laid across southern Iowa. Its second series of 4-8-4s were built in the company's West Burlington shops. One, number 5632, still survives on display in Chicago, although its tender (coal car) was accidentally scrapped.

Locomotive models with colorful names like "American," "Consolidation," "Mogul," "Atlantic," "Pacific," "Santa Fe," "Mountain," "Hudson," "Mikado" — which was renamed "MacArthur" during World War II — "Texas," and "Northern" worked throughout Iowa during the great age of steam. The huge "Texas" type 2-10-4 did have its share of problems. Its poorly balanced running gear had a lamentable habit of tearing up track so that a maintenance crew often followed the locomotive to put the track back together. This uneconomical arrangement was rectified by Theodore Olson, a Northwestern mechanical engineer, who devised a means of balancing the gear.

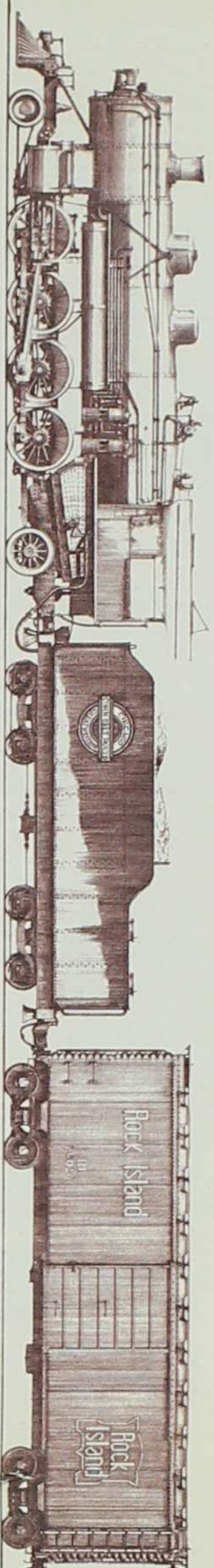
The only locomotives that did not run in Iowa were the real giants, the "articulated" or "double" engines. Iowa's gently rolling landscape did not call for such monsters as

the Southern Pacific 4-8-8-2 cab-forward model (illustrated) or the even bigger Union Pacific 4-8-8-4. This locomotive was 131 feet long and sustained speeds of 70 to 80 m.p.h. — pretty fair for something weighing better than a million pounds.

The sound of a steam locomotive "losing its footing," its drivers slipping, straining against tons of inertia as the train begins to pull out of the station, will never be heard again in Iowa. The whistle's lonesome call of a late autumn night has vanished — except in a myriad of songs — before most of us realized what we were losing. 1975 saw the last high-performance standard-gauge steam locomotive move through Iowa. It was a former Southern Pacific fast passenger loco that had been growing moss for many years on a siding in Portland, Oregon. Locomotive 4449, class GS-4 (general service) pulled into Iowa from the northwest as the "American Freedom Train." She was laughed at by some because she had trouble negotiating a few heavy grades. But she was pulling 26 passenger cars, and a high-drivered (large wheel diameter)



This is an example of one of the best known narrow-gauge steam locomotives in the western states. The D&RGW Mikados still pull tourist trains from Durango to Silverton in southwest Colorado.

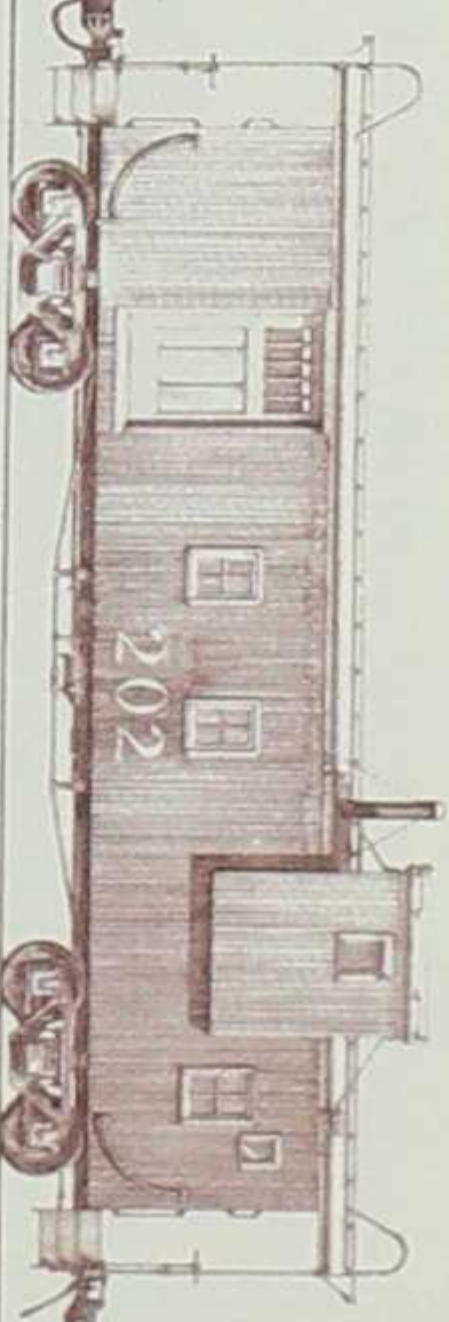


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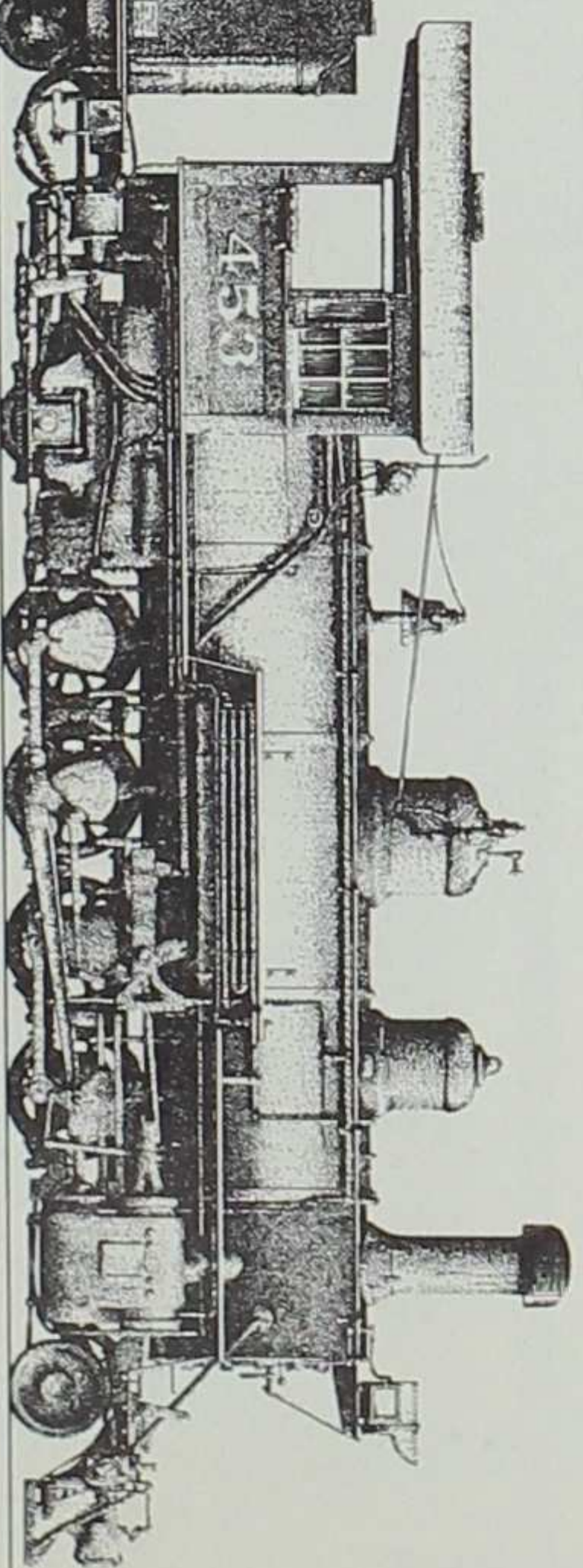
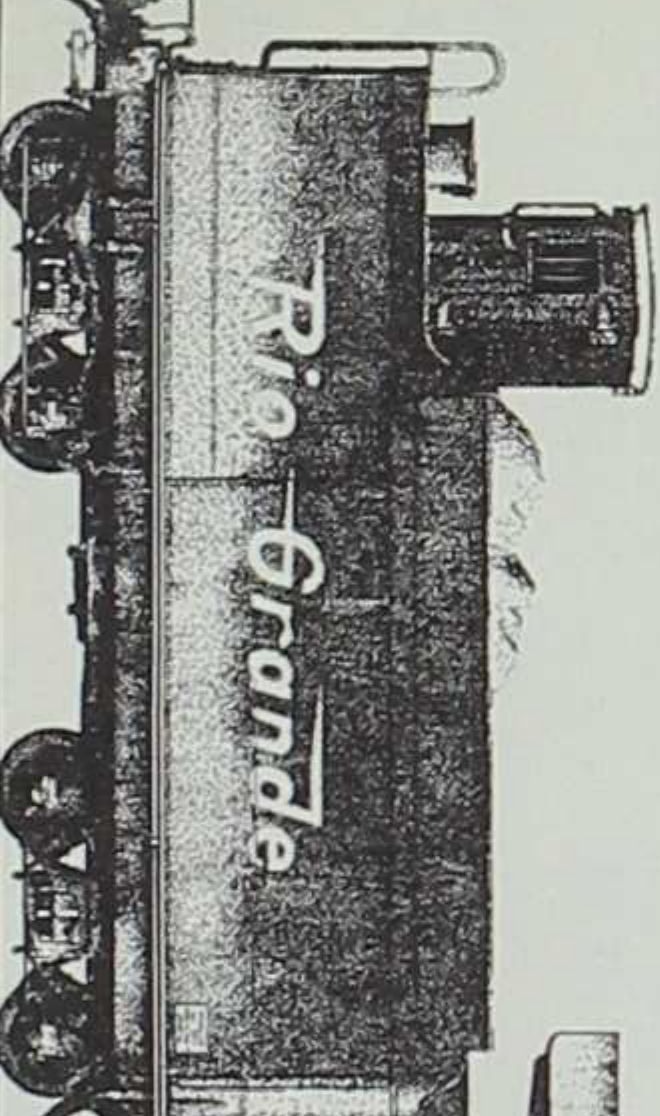
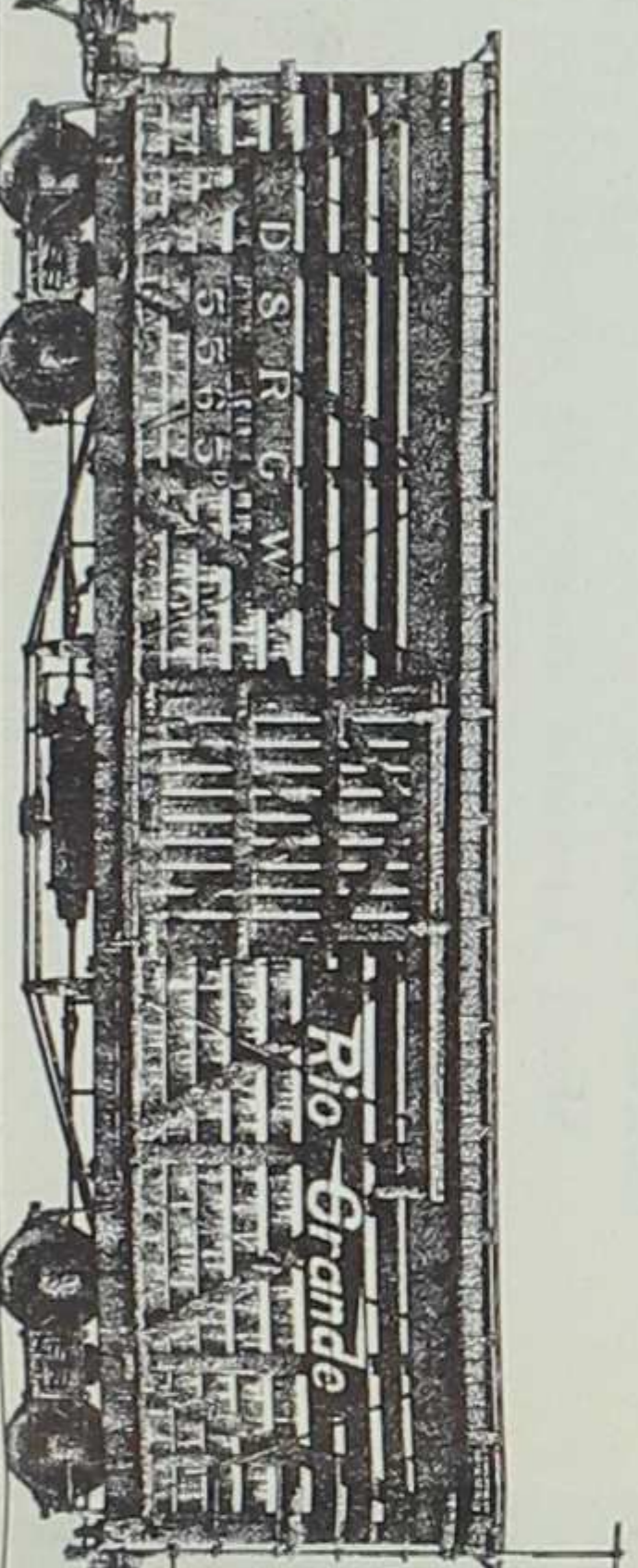
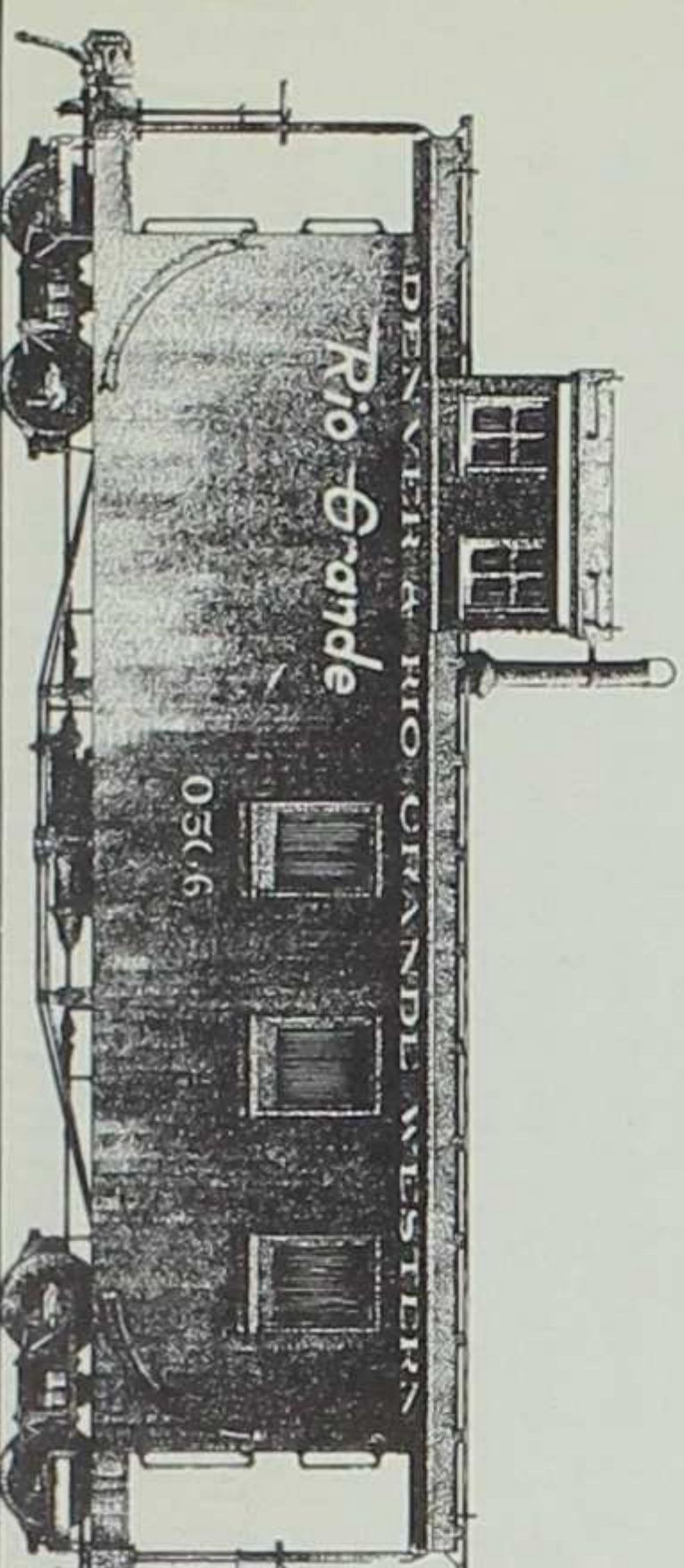
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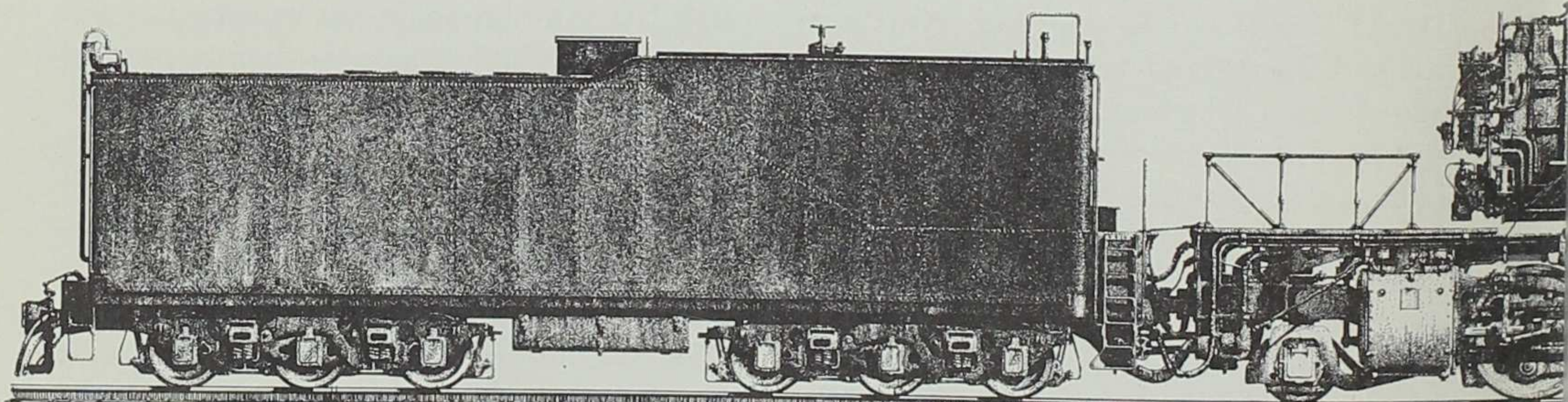


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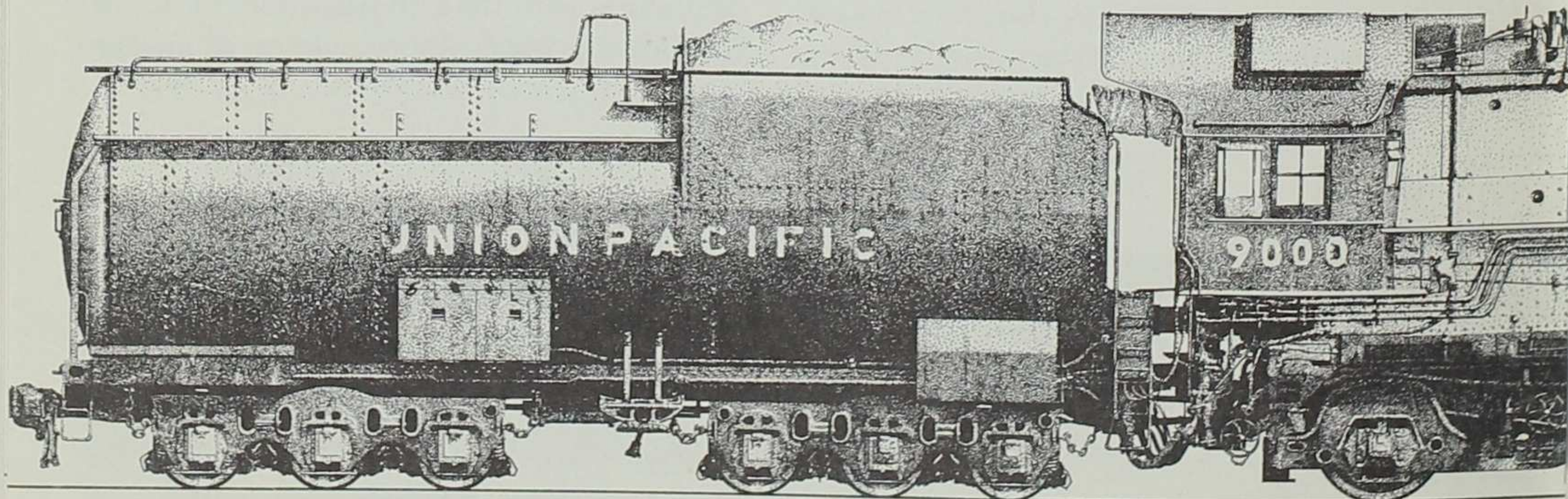
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That was the last of the oldtimers to come through Iowa. Although a few steam locomotives are in very limited operation elsewhere, giving children an experience they would otherwise never know, Iowans must now travel outside of the state to see what remains of mainline superpower steam. □

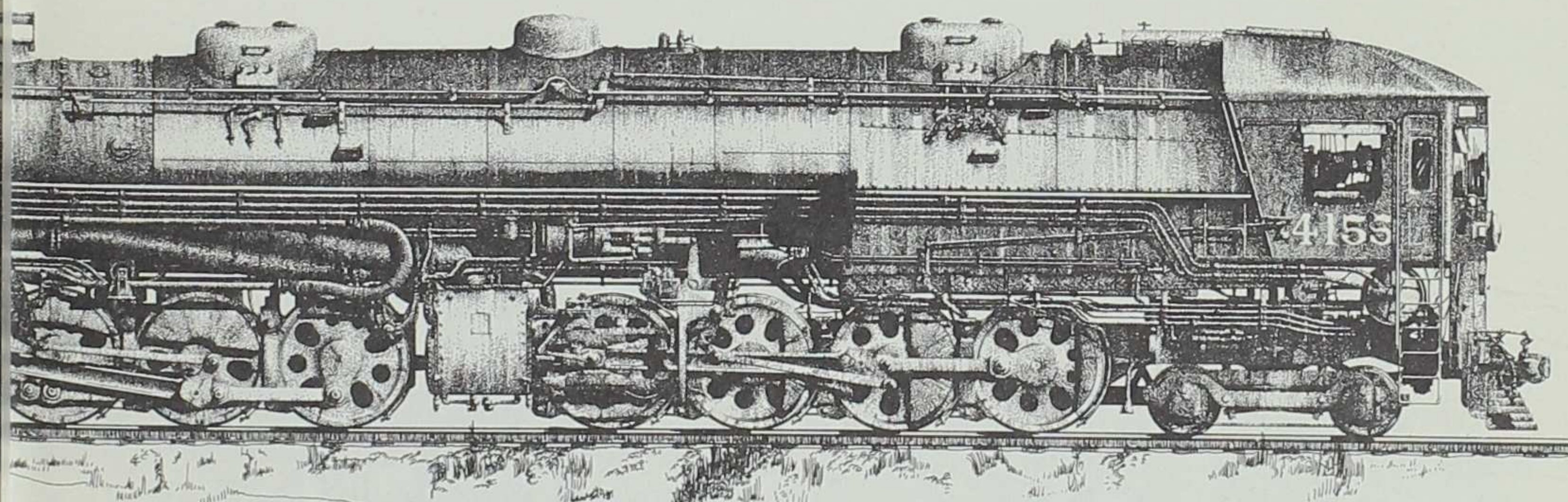
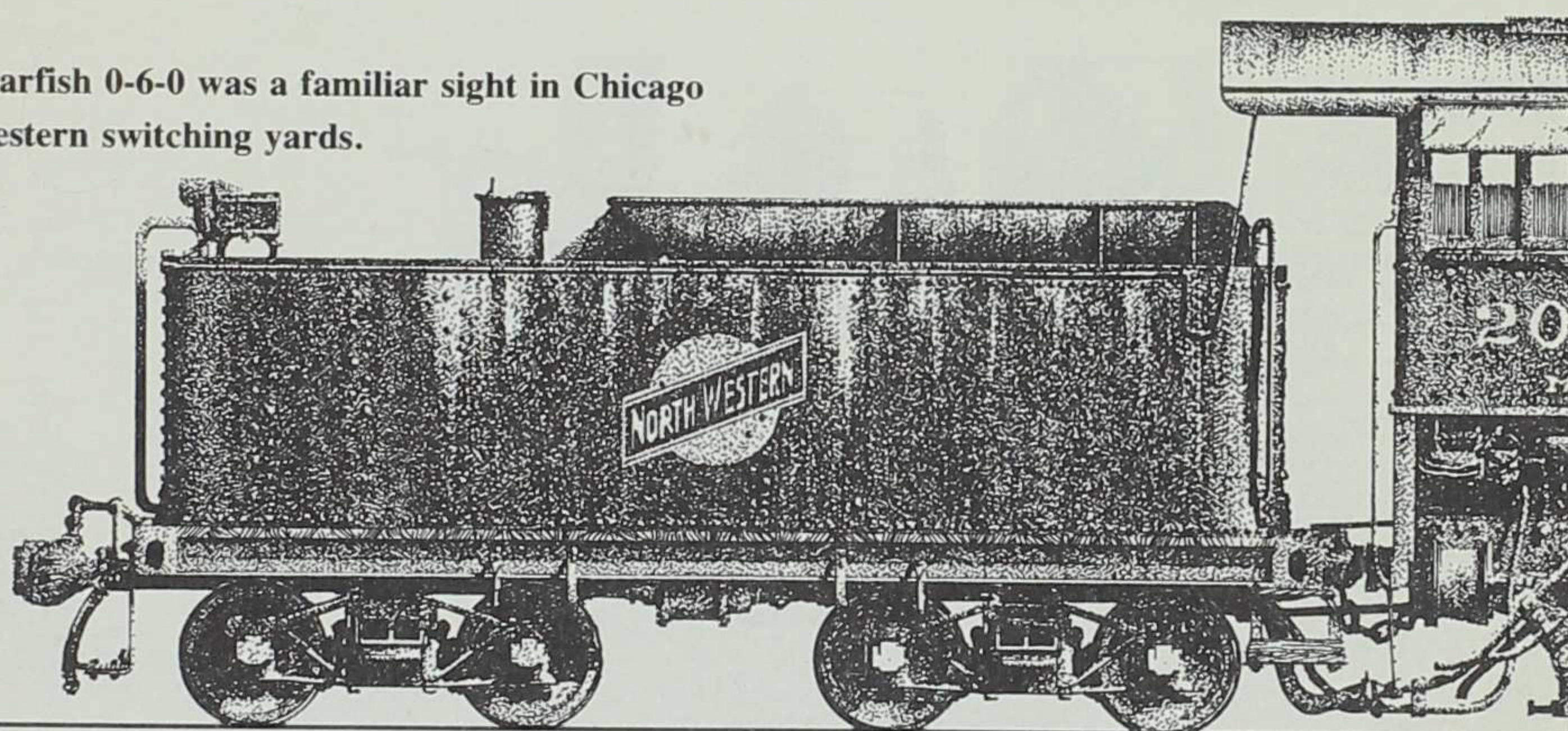


Never used in Iowa's flat land, this mountain-type locomotive had its cab forward to keep the crew ahead

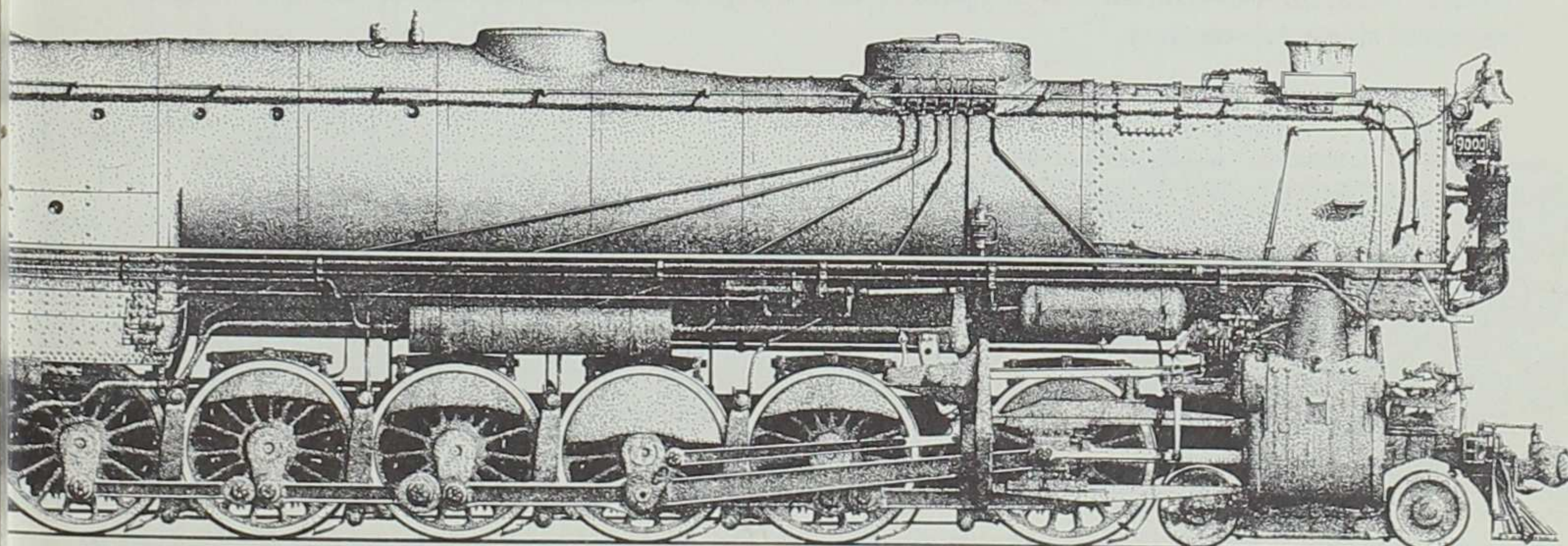


A Union Pacific standard "freight hog" A-12-2,

This dwarfish 0-6-0 was a familiar sight in Chicago Northwestern switching yards.



of smoke in tunnels and snow sheds. These monsters burned oil rather than coal.

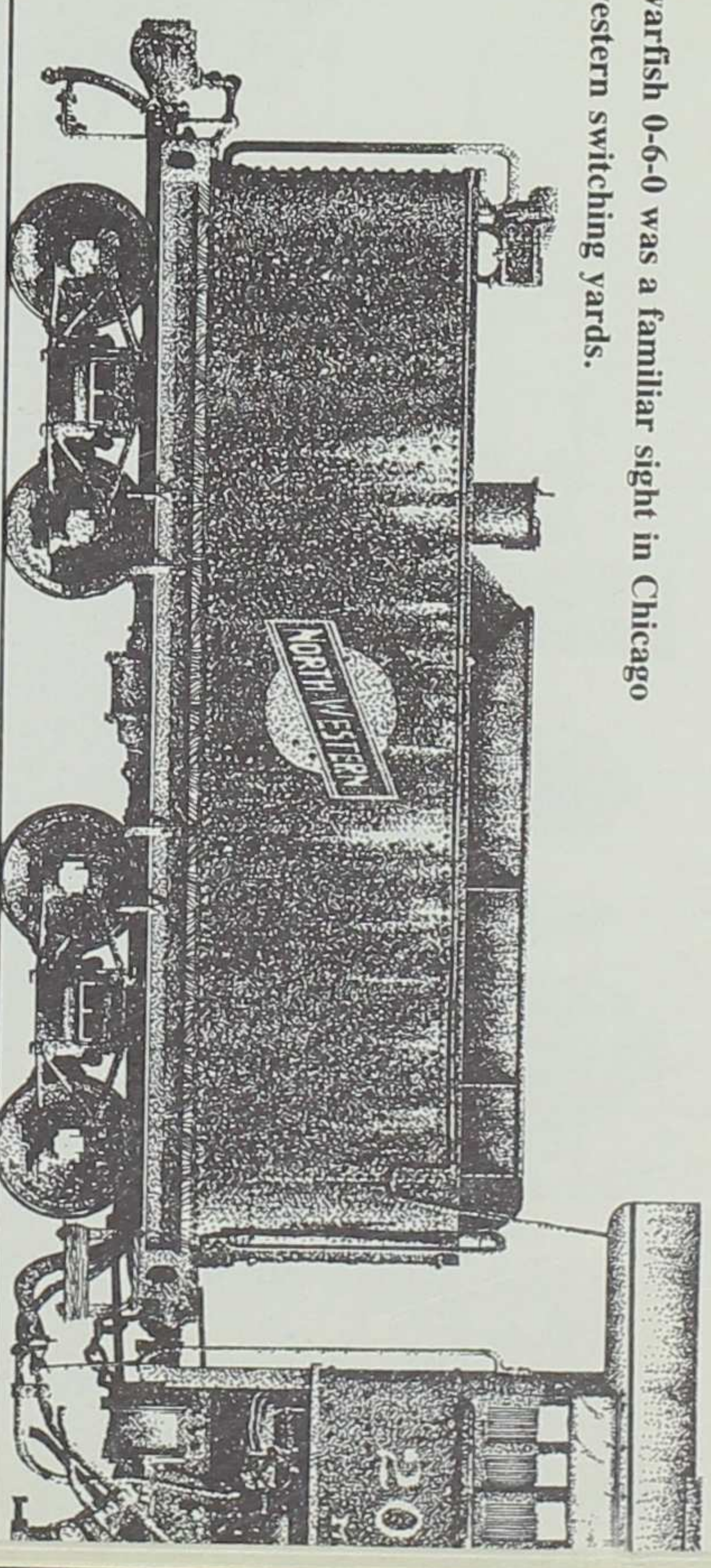


9000-class locomotive, introduced in 1930.

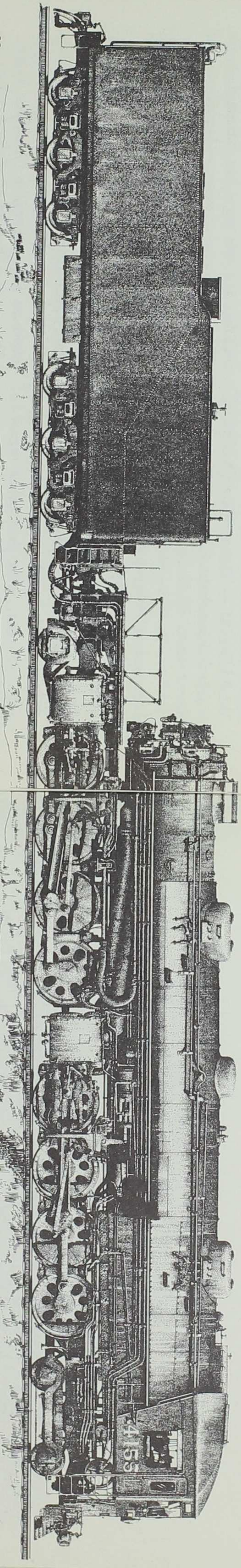
JDY 71 N°4 1/2 INK

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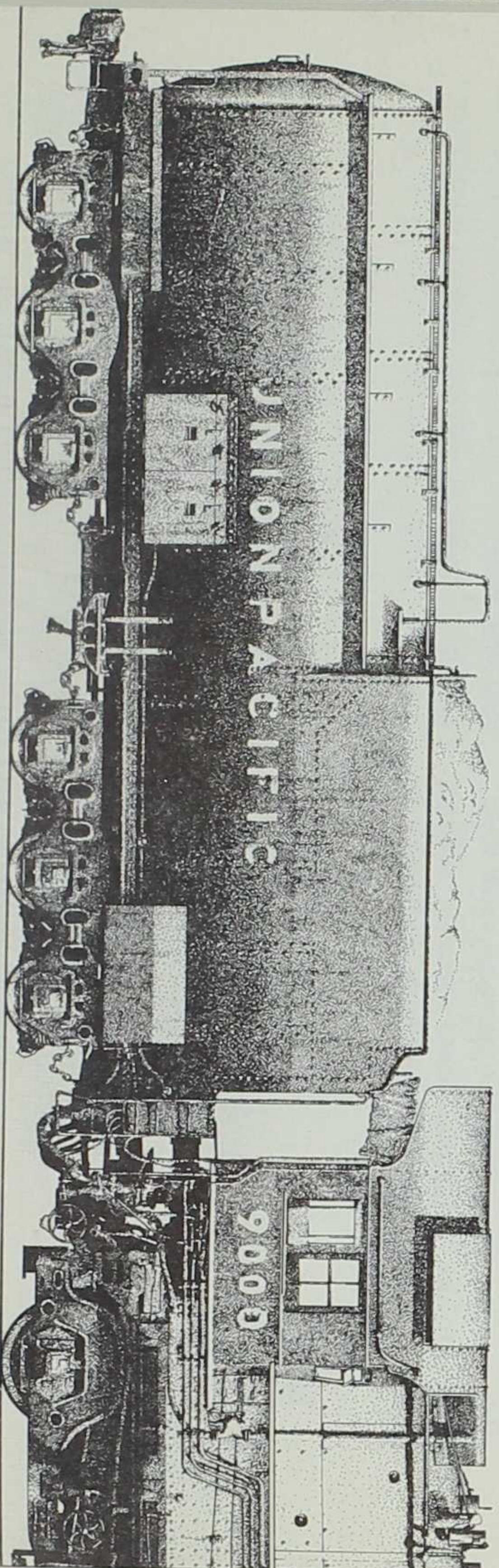
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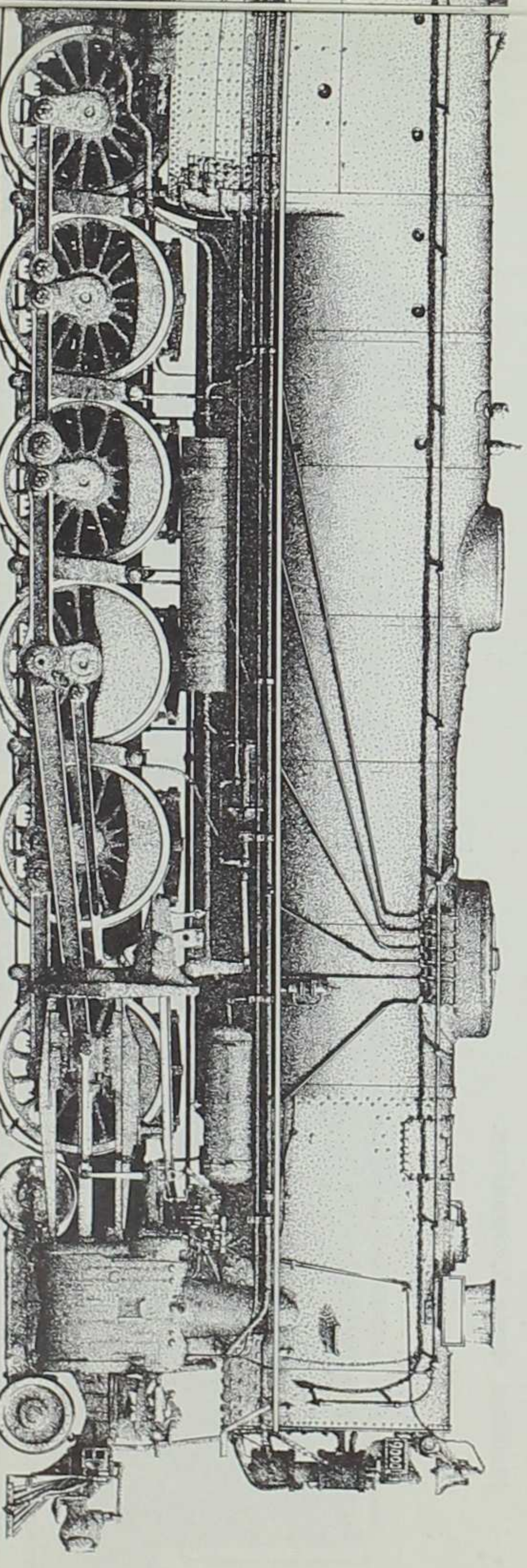
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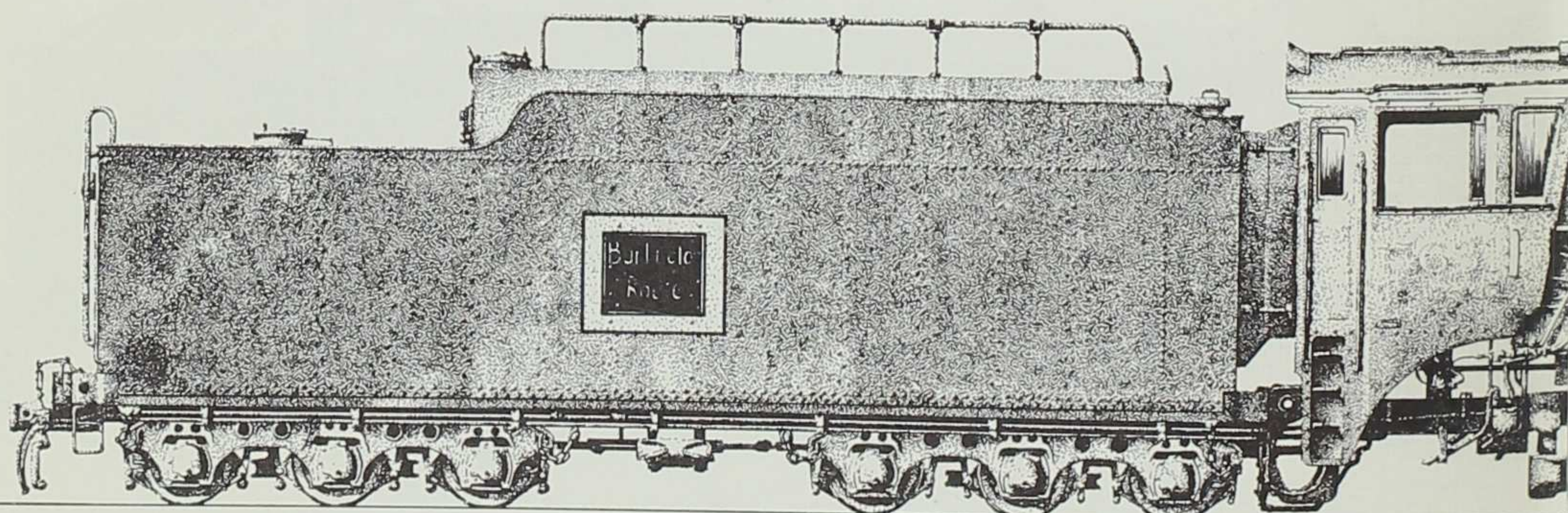
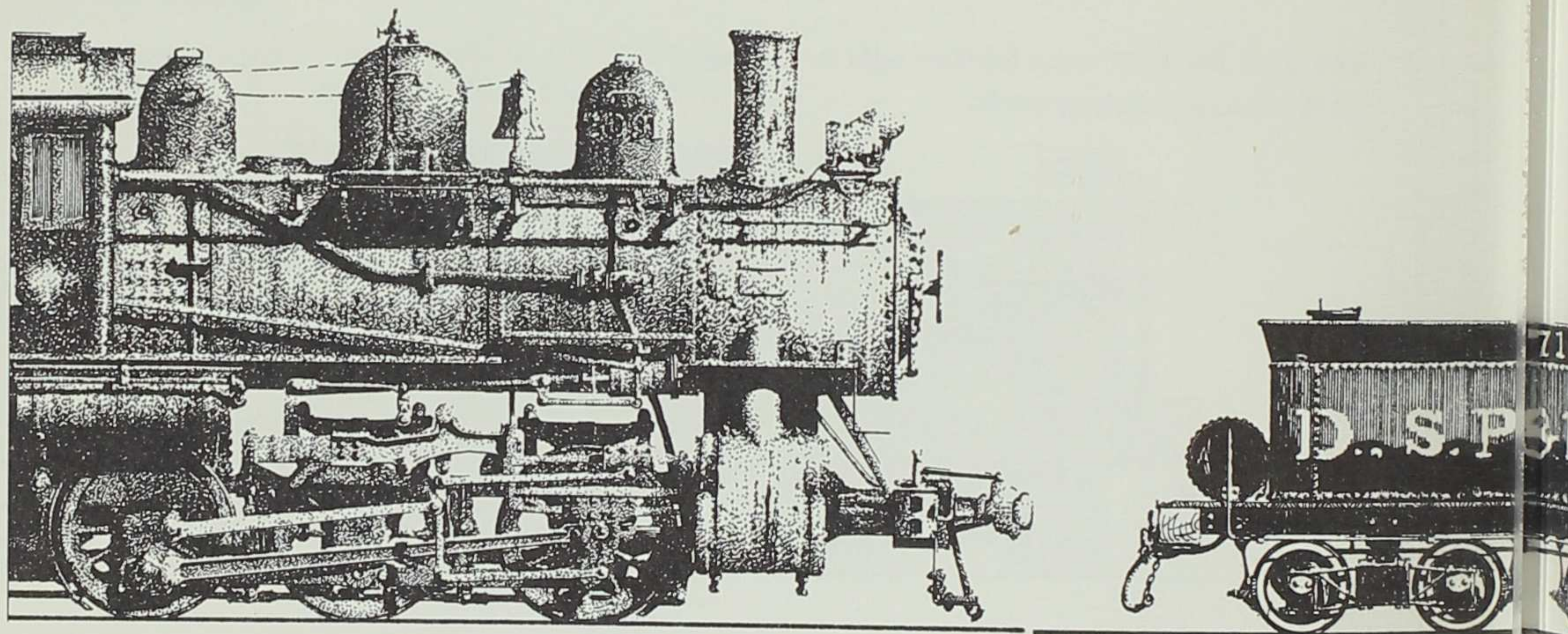


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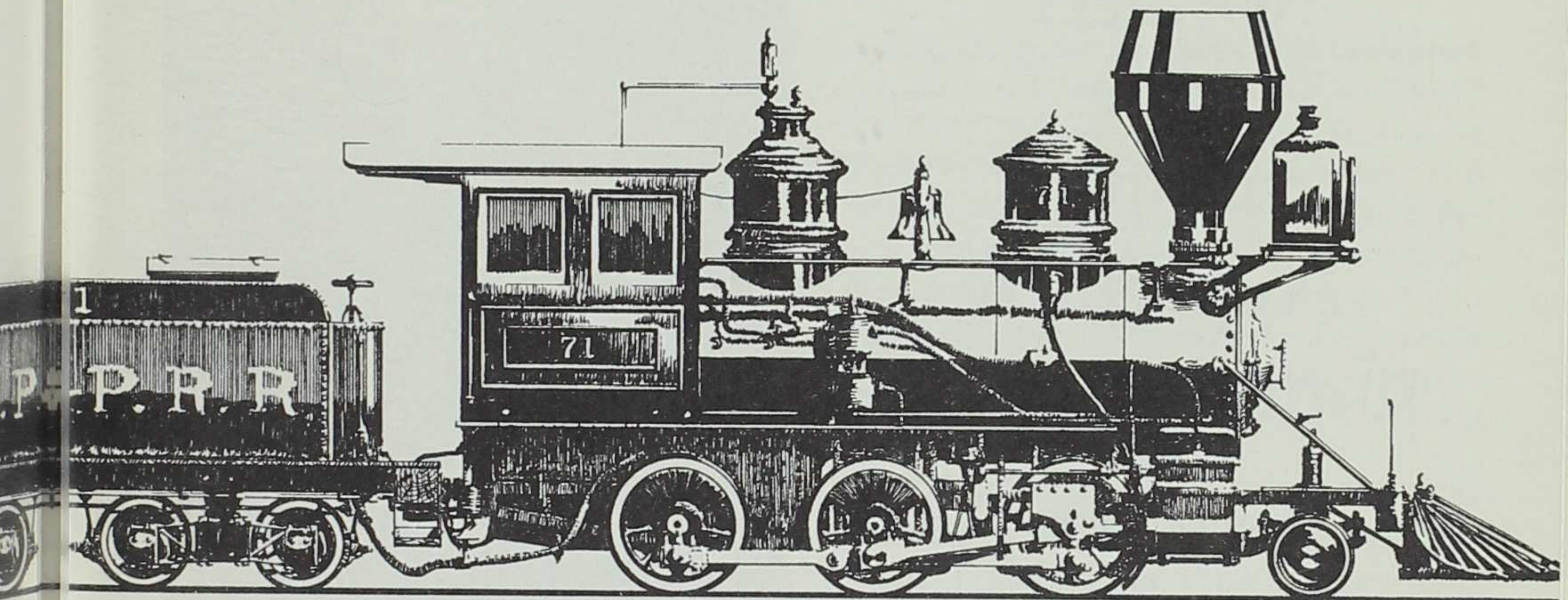


Built in Iowa, the 4-8-4 Northern was typical of the Burlington Route, and the last of the "Q's" long line of excellent steam locomotives.

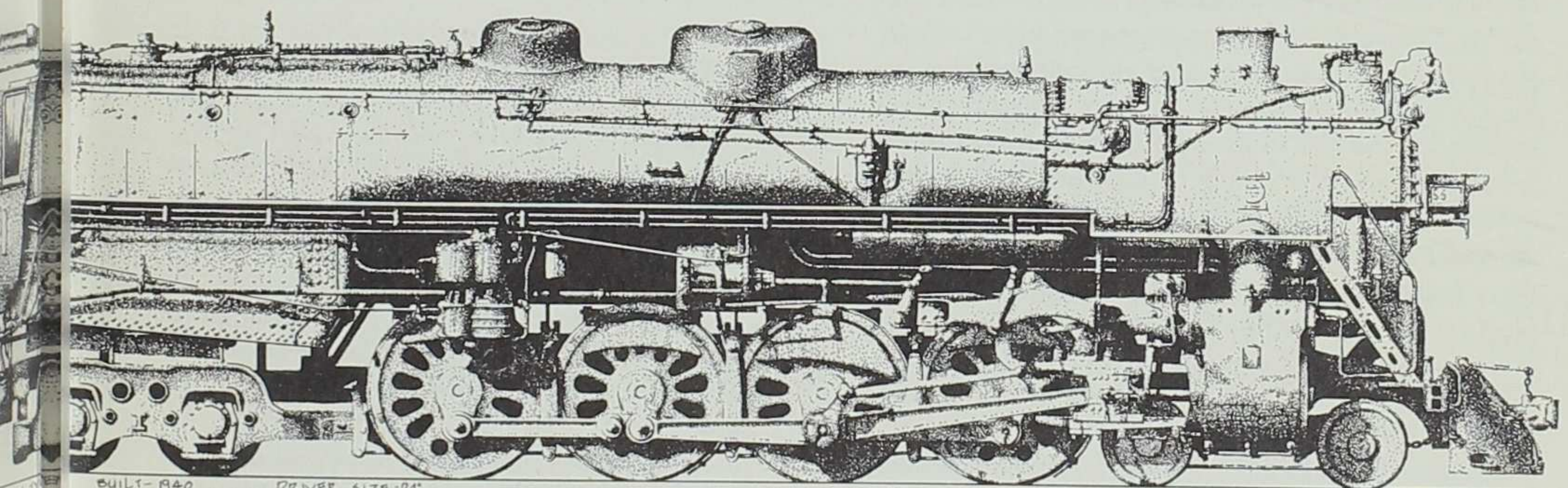
CHICAGO, BURLINGTON & QUINCY '05b' 4-8-4 NORTHERN



Never successful with articulated steam locomotives, the AT&SF (Atcheson, Topeka & Santa Fe) was "Texas" type. Its boiler pressure was 310 pounds, its driver diameter 74 inches, and its horsepower — at



Despite its toy-like appearance, the 2-6-0 Mogul enjoyed a long life of general service for the Denver, South Park & Pacific's narrow-gauge line in Colorado.

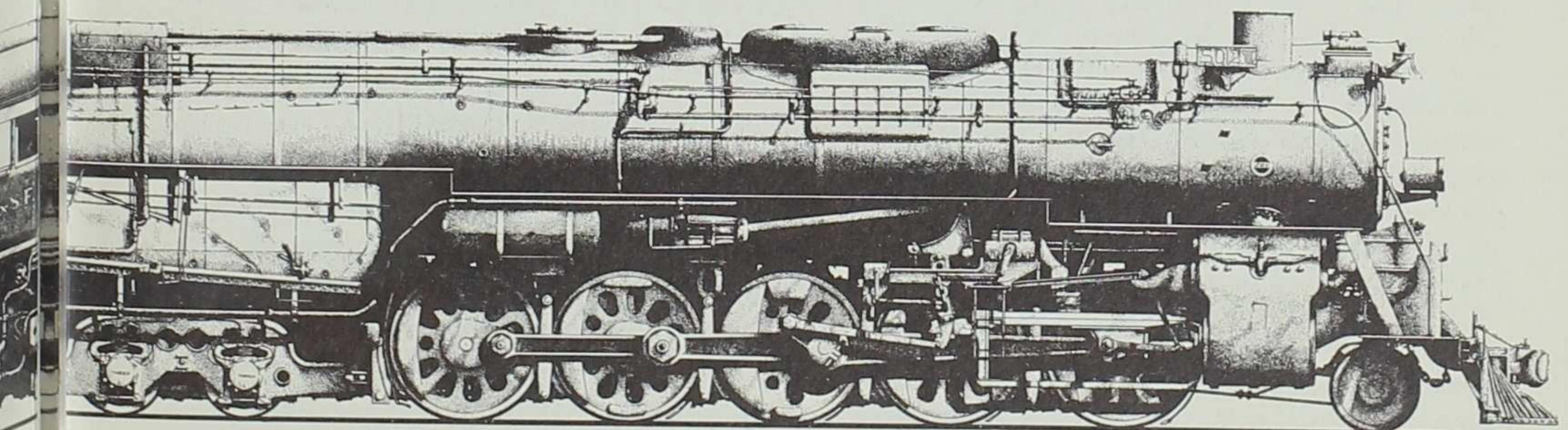


BUILT-1940

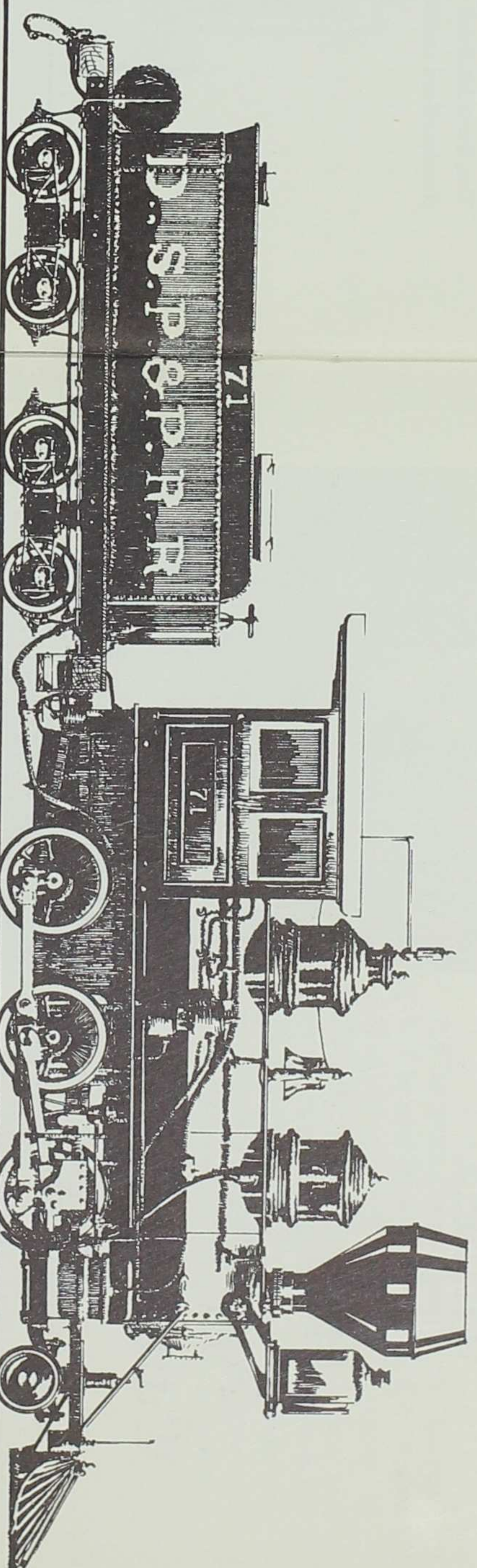
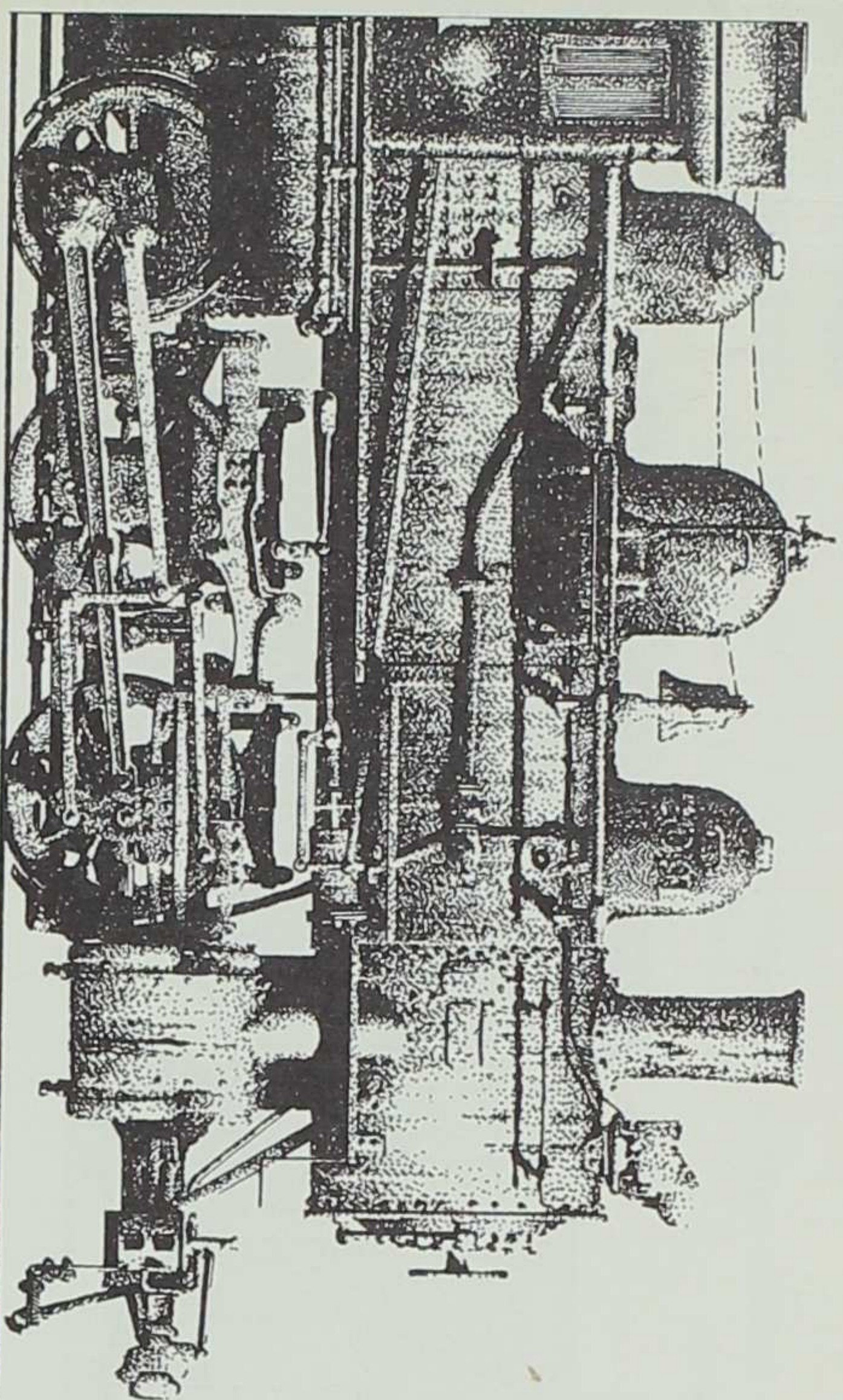
DRIVER SIZE-74"
BOILER PRESSURE-250 POUNDS

NUMBER 2 OF 1/4" INK SERIES

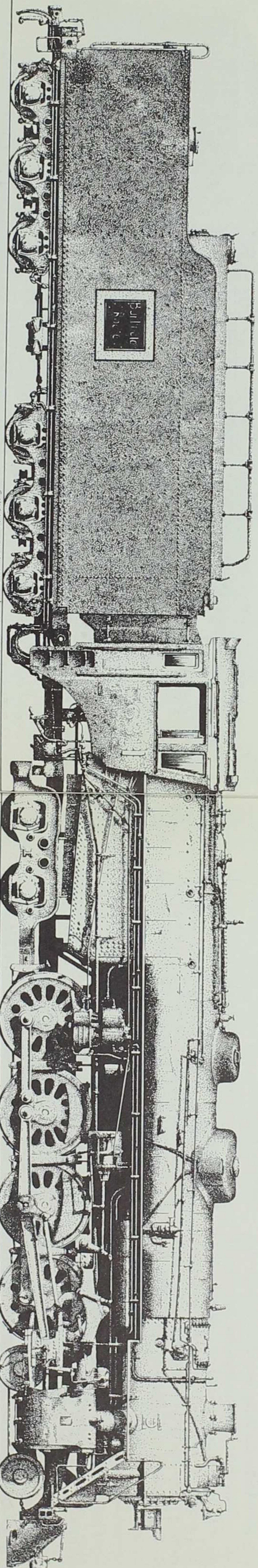
Jin Young 1991



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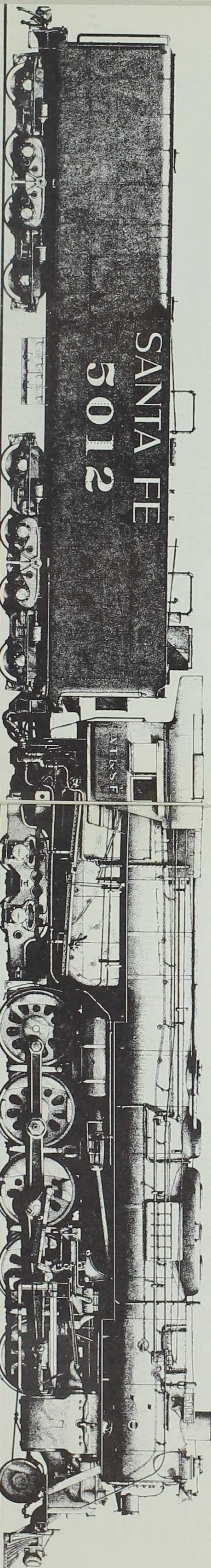
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CHICAGO, BURLINGTON & QUINCY "Q's" 4-8-4 NORTHERN TYPE

BUILT 1940 POWER 4,125 HP BOILER PRESSURE 250 POUNDS

NUMBER 2 OF 14 INK STEELS

JAN YOUNG, 1981



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