SERVICING 200 TRAINS

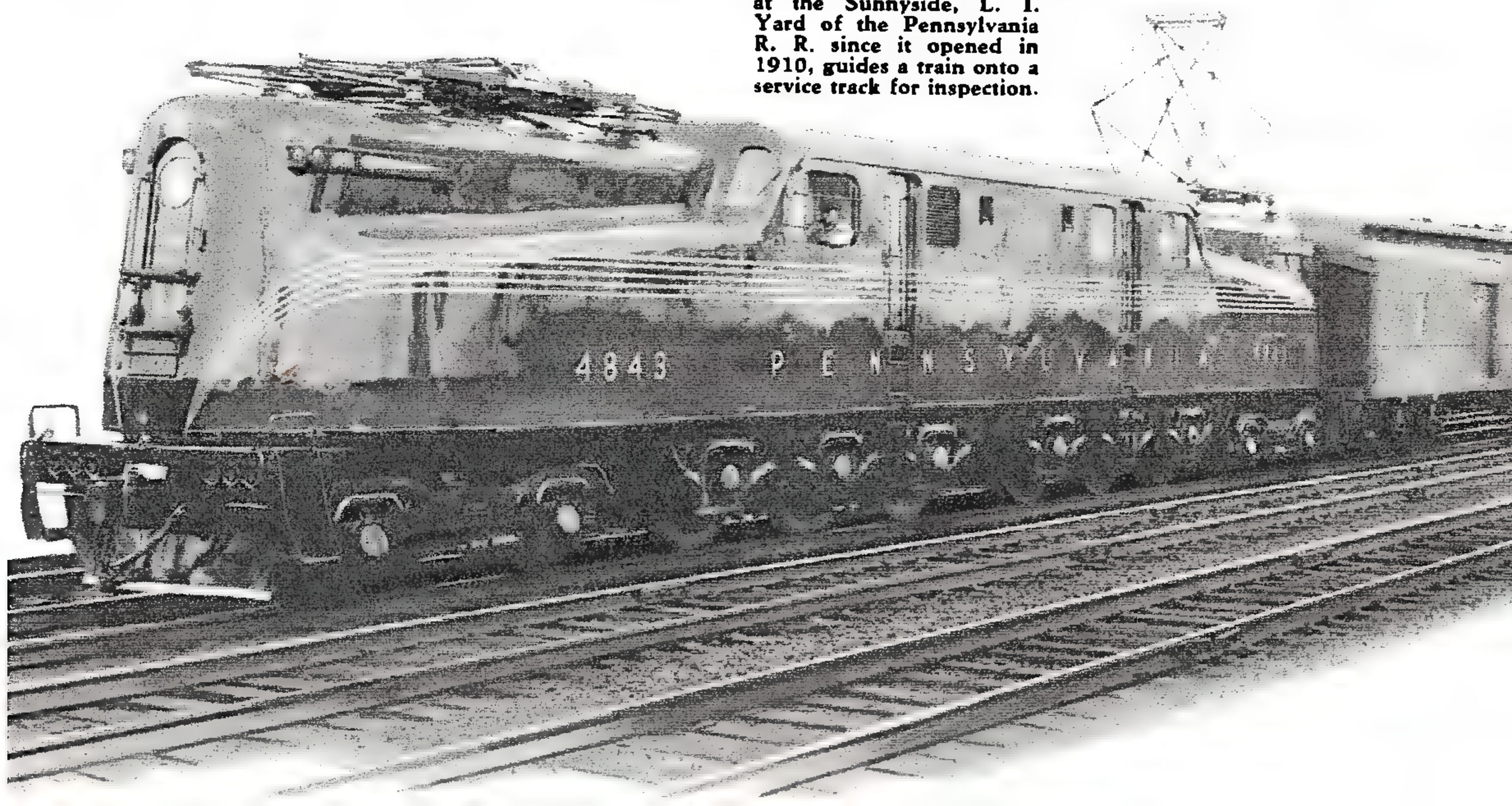
Long Island Plant of Pennsylvania, Greatest Passenger Yard in World, Achieves Hourly Miracles Oiling, Cleaning, Refrigerating, Repairing Its Array of Streamlined Marvels.

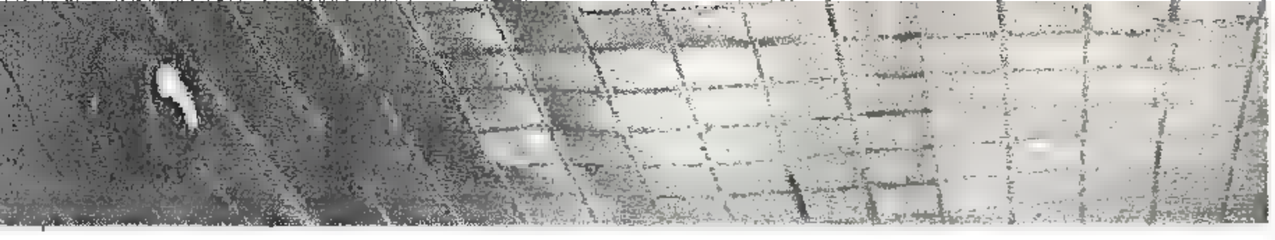
by Brian Hayward

WHAT happens to the train when you leave it at the terminal? In earlier days it wasn't necessary to ask such a question. A clanking old switcher hooked on to the line of cars and yanked them out into the adjacent yard in full view, there to reach bake oven temperature in the summer sun or to become traveling refrigerators in winter. The terminal was then literally the end of the road and the engine of your train was right at rail's end when it stopped in the depot.

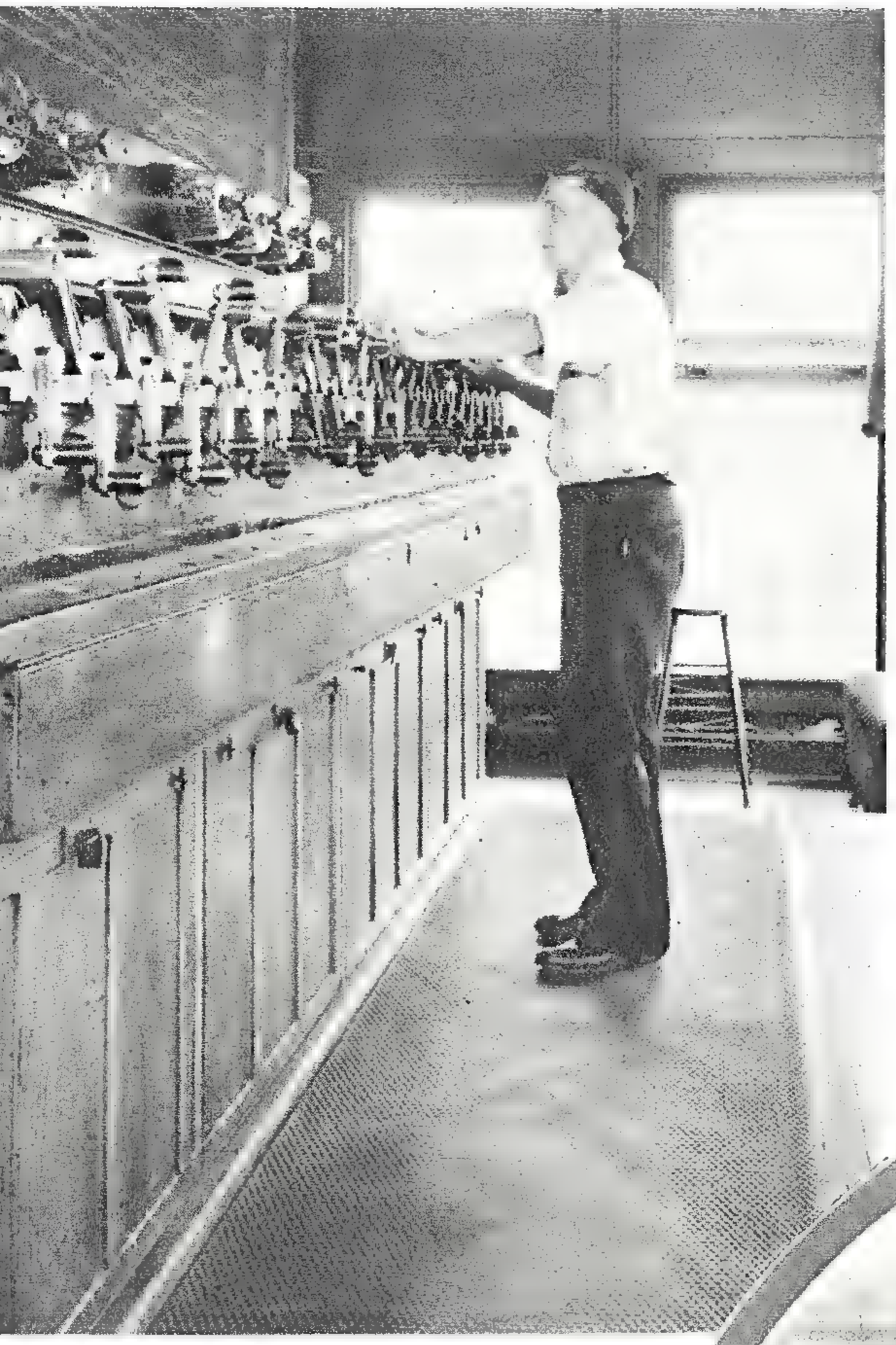
But modern railway terminals are in the center of big cities where land costs for the several hundred acres necessary for a present day railroad yard are prohibitive. Trains have to go elsewhere to the cleaners and the twenty to thirty other trades that service

Above—J. D. Maple, Yard Passenger Conductor at the Sunnyside, L. I. Yard of the Pennsylvania R. R. since it opened in 1910, guides a train onto a service track for inspection.





DAILY AT SUNNYSIDE

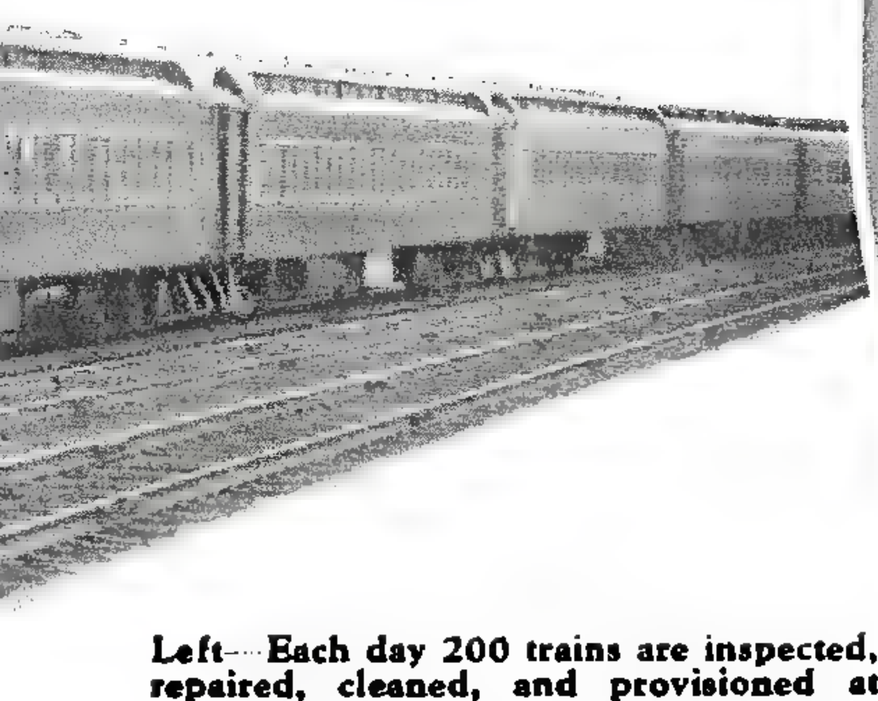


them before they again appear in the terminal headed in the other direction—west or south.

Suppose you have, just come in on the Pennsylvania's crack No. 28, the sixteen-and-a-half hour Broadway Limited from Chicago. What becomes of it before it again appears in the Penn Station as No. 29 headed West? Odd numbers are west or southbound—even numbers east or northbound trains. When the engineer of a stalled train whistles his rear end brakeman back aboard, he blows five blasts if west or southbound, four if headed the other way.

In an old terminal the passengers walked the length of the platform, passed the big steamer with its compressor chugging as if the engine were actually panting. Instead of departing horizontally on the same level as the train, he now leaves by the nearest stairway and comes out into daylight two flights above. The 4,600 h.p. streamlined electric that picked up his flyer at Paoli is so far up ahead in the recesses of the great underground station that he never sees it. But as soon as he

Above—"H" Tower, Sunnyside Yard. This is the interlocking tower that controls train movements from Long Island into the Pennsylvania Station in the heart of New York City. The trains are routed to tracks beneath East River. Underground route is 4½ miles long.



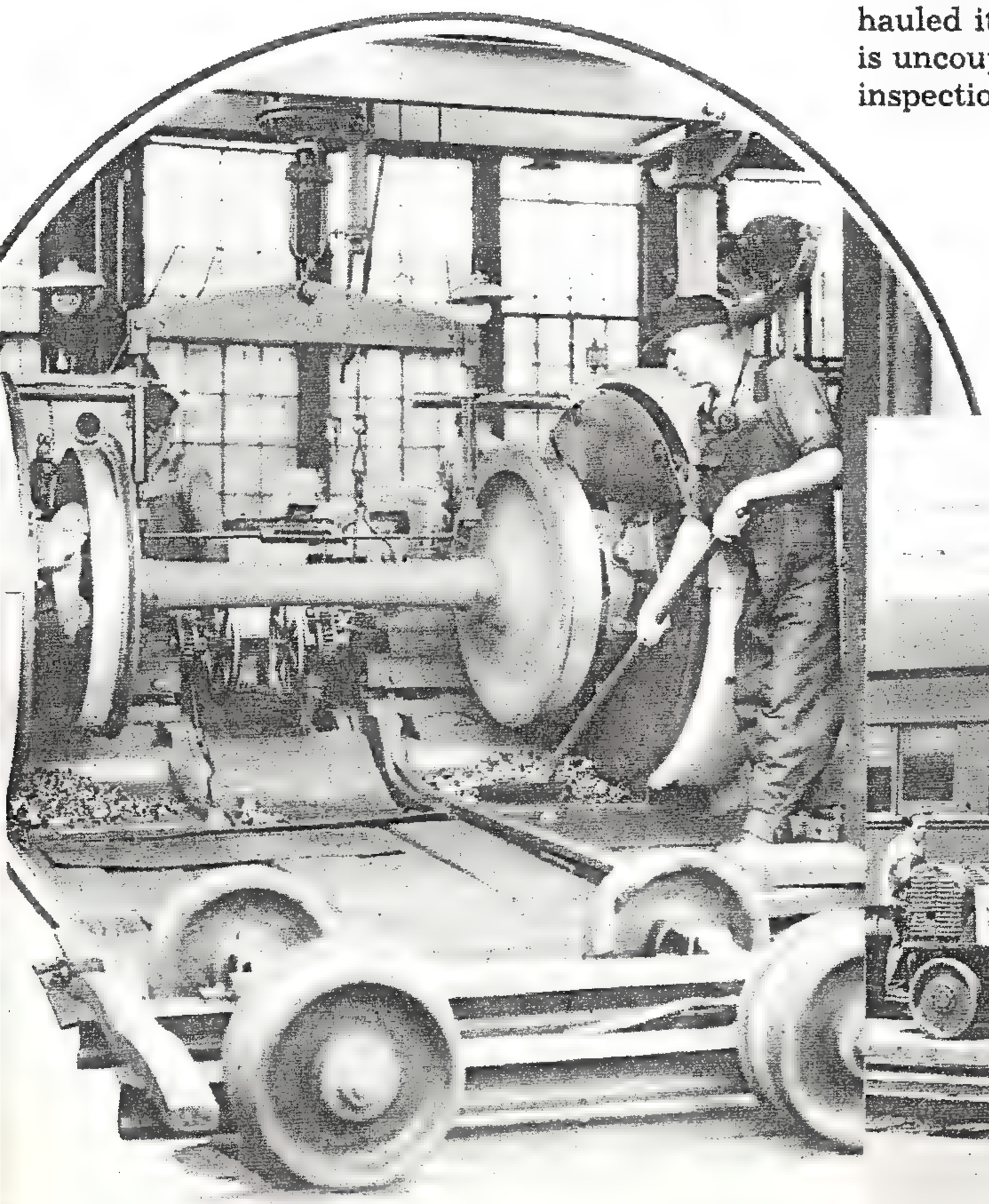
Left—Each day 200 trains are inspected, repaired, cleaned, and provisioned at Sunnyside. Right—A typical day's work.

Supplies to provision hundreds of dining cars are kept in a commissary at Sunnyside. Trucks carry supplies to waiting trains. Pennsylvania R. R. diners feed 10,000 travelers daily.

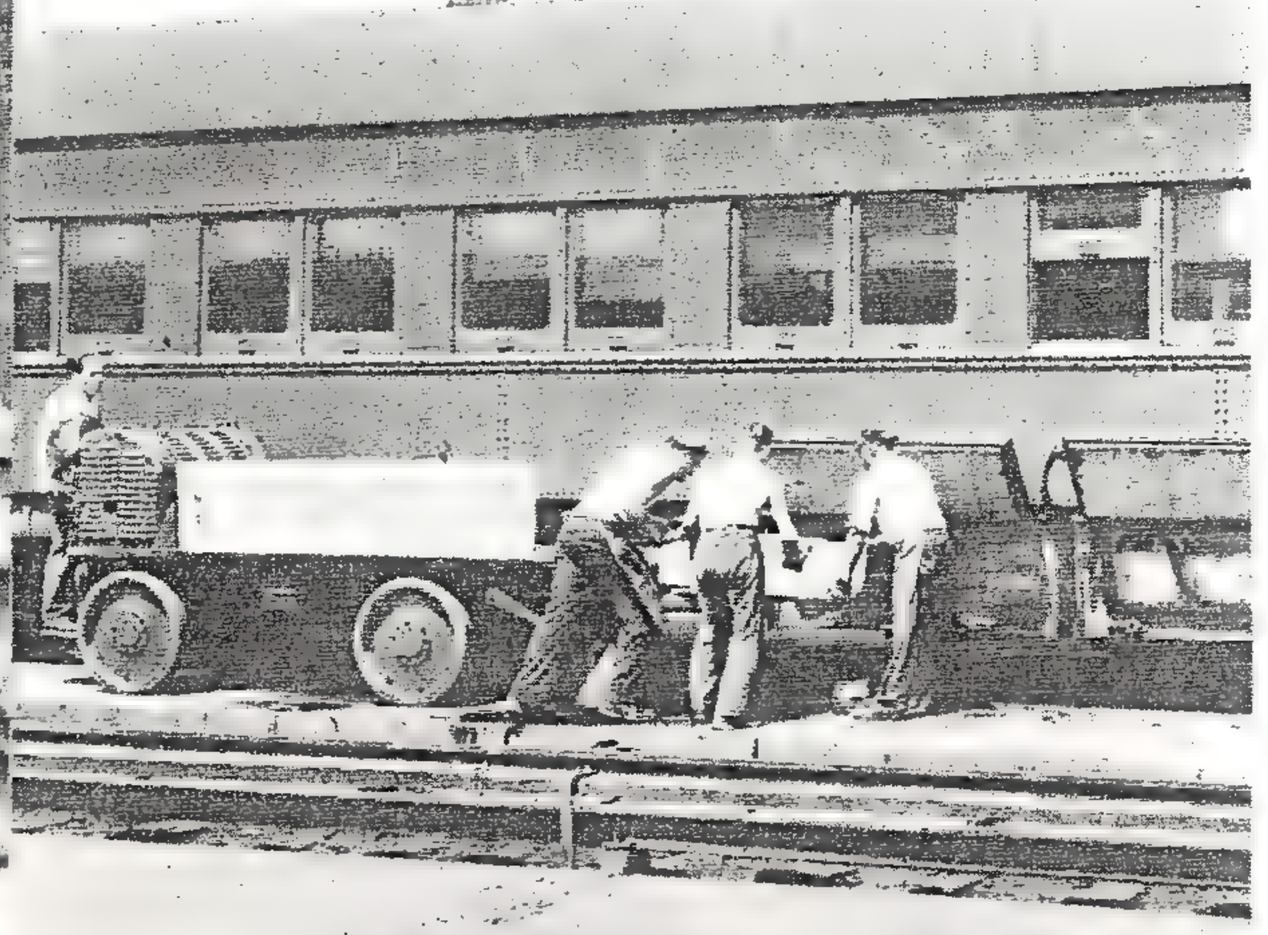
and the rest of them have departed, it continues its eastbound trip through a 100 million dollar system of under river tunnels for another 4½ miles until it rounds the loop and stops on one of the 75 tracks of Sunnyside—the world's largest railroad passenger yard.

Sunnyside is a pretty sizable community in itself—one of those self-contained organizations where everybody works—whose activities go on apace 24 hours a day every day in the year. It is but one of the many important features of railroad service that the passenger never sees but one so essential to modern railroading that a breakdown here would mean the disruption of operations to a great extent on some 700 miles of main line, chiefly between New York, Washington, Harrisburg and Pittsburgh. It handles an average of 200 trains a day, or a little better than four in and out every hour, the day's peak being reached between 3 and 8 p. m., when five to six arrive and depart each hour. With the exception of the hourly Philadelphia expresses during business hours, these are chiefly heavy limited trains, most of them with club, diner, observation and baggage or mail cars in addition to their lines of ten to twelve or more sleepers. In addition to its daily peak, the yard has week-end and holiday peaks.

When No. 28 reaches Sunnyside the 640,000-pound streamlined electric that hauled it at a ninety-mile clip on its last lap, is uncoupled and goes to the engine house for inspection, oiling and any adjustments or re-



Left—The wheel shop in Sunnyside Yard, showing a wheel turning lathe "turning down" wheels. Car wheels are "shaved" or turned down ⅜" at regular periods to insure smooth riding. Below—Supplying Pullmans with ice for cars that have no power air conditioners.



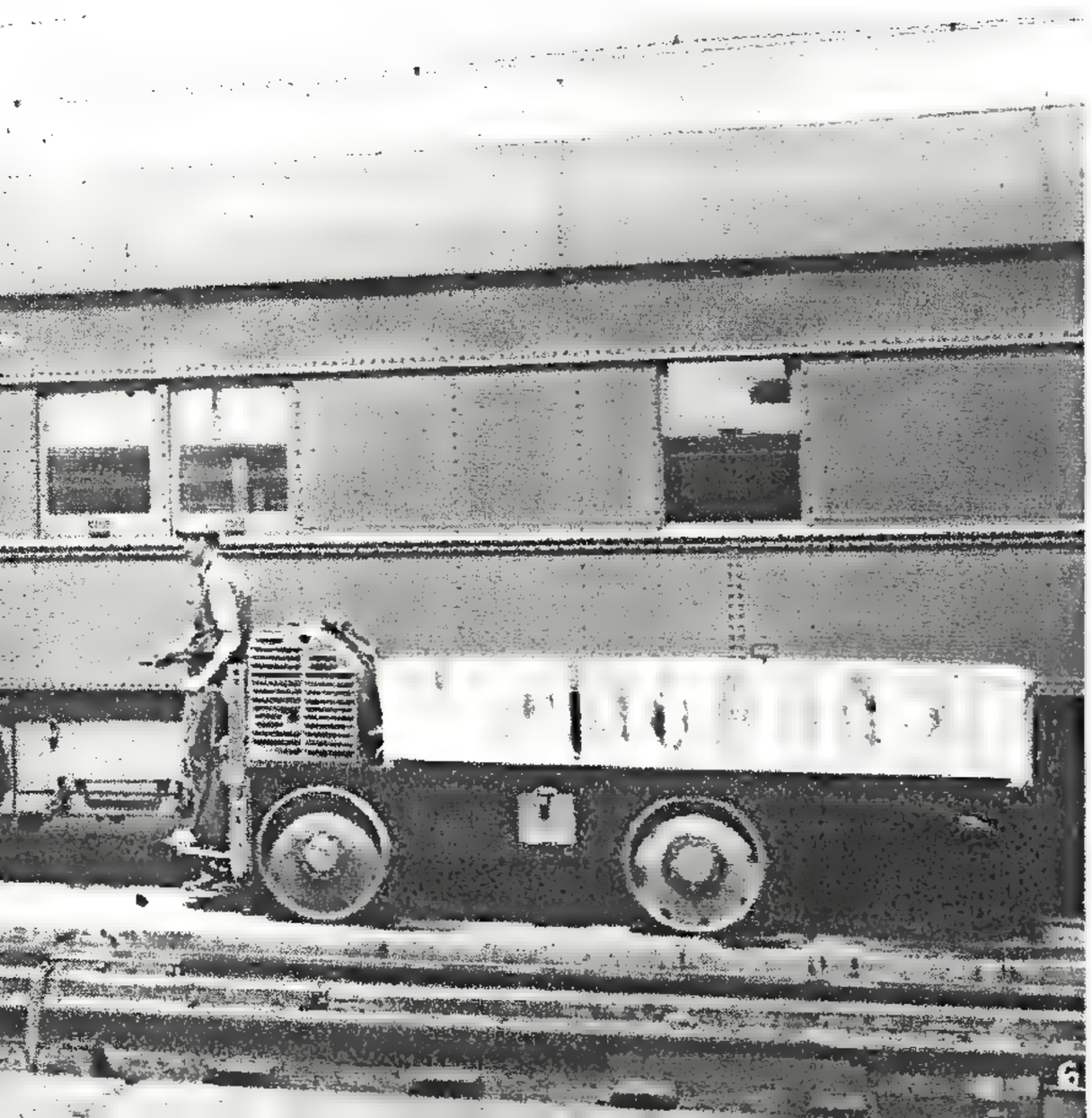
Above—A car-cleaning crew at work. Cars are cleaned thoroughly inside and out, even to the extent of washing the cars in oxalic acid. Right—J. J. McGann is Yardmaster at Sunnyside Yard, a job involving the solution to many problems that arise. He has a corps of experienced assistants.

pairs that may be necessary. Next it goes to the bunkering station to take on fuel and water just as the steamer does. The electric locomotive heats the train in cold weather from an oil-fired steam boiler, utilizing the standard heating equipment of the cars, as does the steam locomotive when it takes hold. So the next time you see the very latest thing in electric locomotives blowing off steam, don't be alarmed—it hasn't mistaken its ancestry and it doesn't carry a steam-driven plant to supply the juice that runs it—it's just a heating unit rarin' to be hooked on to its line of radiators.

Having been inspected, oiled and watered, the huge, high-speed power unit, almost as long as a modern sleeper, makes its last lap down the yard to be "sanded." More than a ton of fine-screened, baked-dry sand is shot over from the sand house by compressed air through pipe lines into its six sand bunkers and it's all set to go. The westerly switch tower, whose operator weaves the outgoing ends of any combination of the twenty-five to thirty miles of yard tracks into two departing strands at will, shunts it to the head of No. 29, and forty-five minutes in advance of the "all aboard" hour at the Penn Station, it once more dives under the mud and rock of the East River on its way west.

While the locomotive has been undergoing all this servicing what has happened to the train itself? The moment the engine pulls

[*Continued on page* 128]



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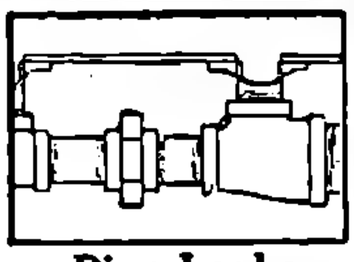
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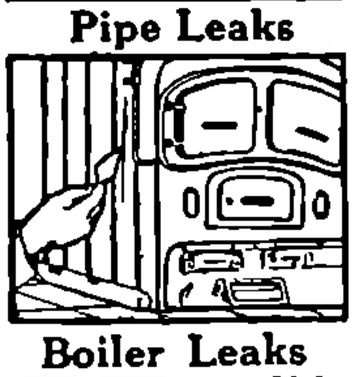
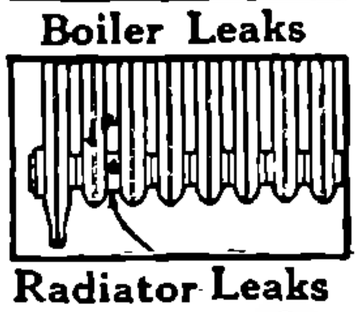
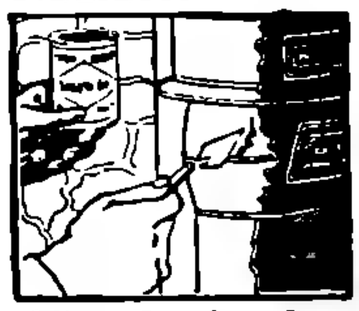

Boiler Leaks


Radiator Leaks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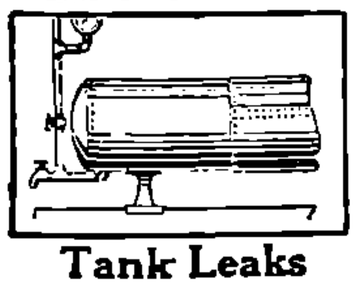
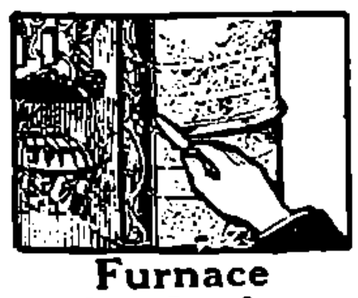
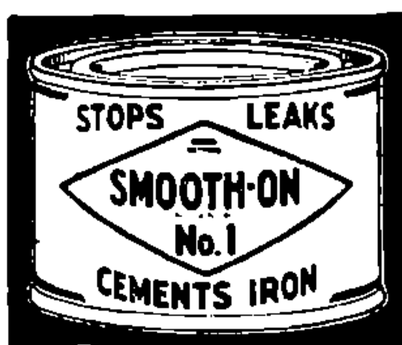
Smoke Leaks


Tank Leaks


Furnace Gas Leaks



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Make "Tin Can" Photo Printer

[*Continued from page* 114]

for printing. A piece of yellow paper similar to that used in the hinged frame is pasted over the opening in the side of the can to provide safelight illumination during the developing process. The printer is completed by making the printing frame. This is made from the hardwood board which is rounded on the corners and the center cut out to allow an opening of 3⅞" by 6½". On one side of the board rout out a recess to a depth of ½" so that it will fit snugly over the top of the can. Rout out the other side to take a 4½" by 7" sheet of glass so that it will be flush with the frame. Complete the printer by cutting a piece of ¼" plywood the same size as the frame, sawing it into three sections as shown in the accompanying illustrations and hinging together with small brass hinges. Before attaching the hinged sections to the frame back them with dark felt and attach a small knob for convenience in lifting the platen.

To use the frame mask the glass with black tape, placing the negative and printing paper on top. Close the platen securely then pull the cord which connects to the hinged frame inside the printer. This exposes the printing paper to the white light after which the cord is released, the paper removed and developed.

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away a blue flag is set up at each end, showing that it is under inspection. A whole crew of workers swarms over the train, inside and out. First and most important of all its servicing is the close inspection and lubrication of its complete running gear—wheels, bearings, springs, brakes and brake rigging as well as the rest of its below-decks equipment. Unlike the old Scotch song this isn't a place one could get that cushy job of helping the car wheel tapper listen.

When the cleaners take charge a fleet of yard trucks brings fresh linen for the sleepers, new supplies of provender for the diner while they haul away soiled sheets, pillow cases and towels, plus the garbage and waste paper accumulation.

That casual mention of soiled and fresh linen doesn't mean that laundry is just one of the many small chores the yard handles every day. In fact, it's rather a man-sized job, requiring a plant so large that it had to be located outside of the yard proper. That laundry handles an average of eighty to eighty-five thousand pieces in three eight-hour shifts. Then there's just another little laundry item—half a ton of wiping rags must be washed every twenty-four hours. The heaviest part of the job is in the summer. The cars have been washed outside—periodically they get an oxalic acid wash in addition to the daily hose and brush—their interiors have been vacuum

[*Continued on page* 136]

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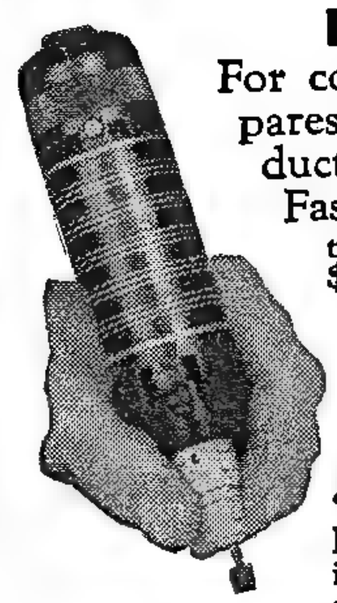

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INVENTORS SEE Pages 8 and 9

Inventions Contest Winners

[*Continued from page* 48]

welcome the automatic funnel device suggested by E. E. Swanson, of Los Angeles, Calif., himself a station operator. The funnel would show when a can is filled thereby eliminating the wasting of fuel by overflowing. Third prize of $5 cash was awarded Mr. Swanson for his practical idea.

Prizes of $2 each were awarded to Mrs. Florence Barter, Hartford, Conn., who suggested a detachable cloth covering for clothes lines to protect washed clothes from dirt and soot covered lines; to Fred Foesch, Freeport, Ill., for his idea of a long forceps for removing olives, pickles, etc., from tall jars; and to Mrs. Margaret Kiner, Jamestown, North Dakota, for her idea of an electric iron with a control for heating only the tip while ironing ruffles, curtain ends, collars, etc.

Prizes of $1 each were awarded to: R. M. Currie, Portland, Ore., Ralph Merrill, Milwaukee, Wis., John T. Newman, Cleveland, Ohio, and Micheal J. Zallas, Michigan City, Indiana.

If you have any good ideas for needed inventions, send them to the Needed Inventions Contest Editor. Here are the rules:

1. In 100 words or less explain your idea for a needed invention. 2. This contest is open to everyone except employees of Modern Mechanix Publishing Co. 3. You don't have to buy a copy of the magazine or be a subscriber to enter. 4. Write your name and address plainly on your entry. No entries will be returned. 5. The editors will be the judges. All decisions will be final. 6. Mail your entry to Inventions Contest Editor, Modern Mechanix Publishing Co., Greenwich, Conn. Contest ends February 1.

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cleaned and wiped down, windows washed, blankets and mattresses aired, fresh linen provided, the 250-gallon water tank filled, battery tested and charged if necessary, the panel boards, relays and lamps checked. Isn't she ready?

A few years ago, yes—but not any longer—at least not from May to October. Where then does the heavy job come in? To find that out I went to the big boss. I asked J. J. McGann, yardmaster, just as one railroader to another, what modern development of recent years had added most heavily to his grief as keeper of the world's largest passenger yard? Only one word was needed as an answer—"air-conditioning."

Close to 80 per cent of the more than a thousand cars that are serviced in Sunnyside every twenty-four hours are now air-conditioned and, as the super added, "We're getting more of 'em right along. Oh, yes, some are mechanically operated, but only a few," he went on. "If a system looks promising, the road will install it on a few cars and try it out, checking its operation closely. People don't realize that it takes a 15-to-20-k.w. generator and a 600-ampere-hour battery to air-condition a car. That's in addition to the lighting."

It's the seventy odd per cent of those more than

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Servicing 200 Trains Daily

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a thousand cars that aren't air-conditioned by their own power-driven equipment that provide the heaviest job of the yard for several months of the year. Putting the hundreds of tons of water required by the sleepers and diners daily into their tanks is an easy matter because they're simply hooked up to the pipe lines, but handling the four hundred tons of ice needed to air-condition the cars—and that includes chair cars and some coaches as well as sleepers—is something of a job in itself.

Four ice boxes with capacities ranging up to a maximum of three tons at a filling have been slung from the car frame. Water from the melting ice flows to a pump which forces it through a radiator in the roof of the car, while a blower circulates the air in the car together with a certain proportion of fresh air from outside, through the radiator, or cooling unit. The water which has served to effect a ten to fifteen degree drop in the temperature of the car and has become warm itself in the process, is then sprayed over the ice in the boxes and again circulated through the cooling unit.

That isn't all the ice that's handled at Sunnyside daily by many thousands of pounds since the refrigerators of the diners and the drinking water coolers of all those cars have to be filled with chopped ice, but that's boy's work compared with the man-sized job of air-conditioning.

Handling material in and out of cars, cleaning and repairing cars and engines and shifting them about constantly to make new train combinations hourly, however, are not the only problems of yard management. It has a population that fluctuates between the two and three thousand mark in the course of every twenty-four hours. The yard and Pullman servicing crews total some twelve hundred men and women who work in three shifts. The laundry adds another hundred. More than eight hundred porters and almost as large a number of waiters, cooks and dining car stewards arrive and depart in the course of the day.

Not the least of the intense activities that go on here unseen and unheralded, is the advance work on some thousands of meals destined to be served over the clicking rails. Sunnyside is one of the Pennsylvania Railroad's three principal commissaries. Every twenty-four hours it must stoke the rolling eateries with close to three tons of meat, poultry and fish, a quarter of a ton each of butter, eggs and coffee, as well as tea, sugar, salt and cream.

What, no vegetables? Of course, oodles of them, too. The diner wants spuds with his roast and 2,500 pounds of them are loaded daily for his benefit. He also expects to be able to command broccoli, cauliflower, asparagus, onions, strawberries or what have you just as if he were in the best of stationary hotels instead of aboard one traveling at high speed. And he gets them.

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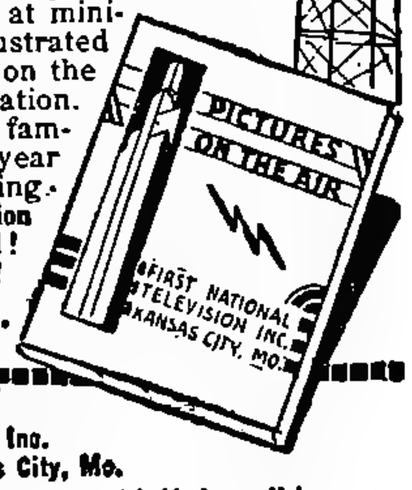

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