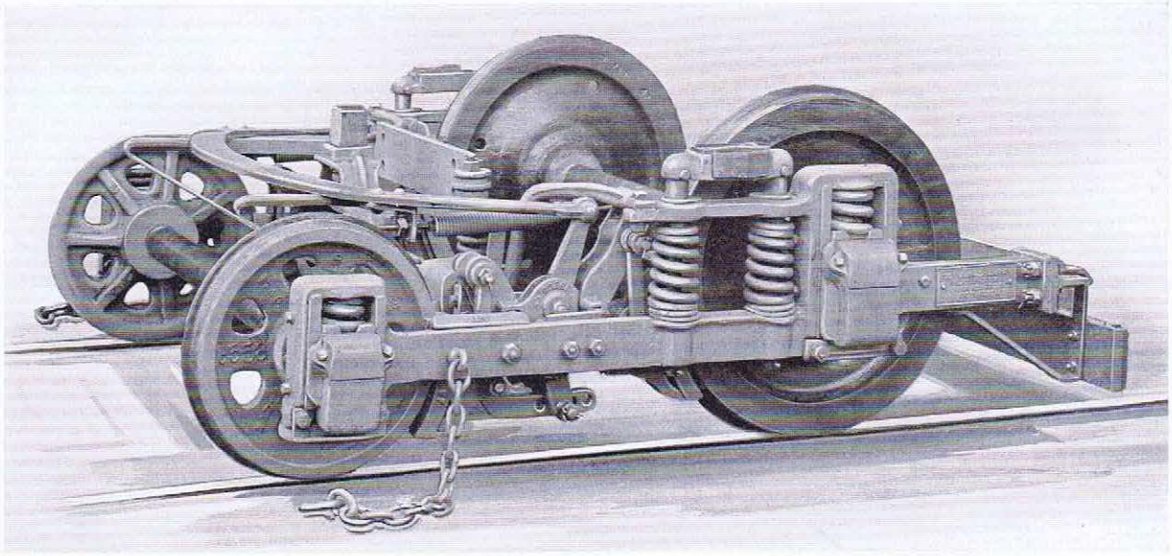


BRILL No. 22 AND No. 22-E TRUCKS

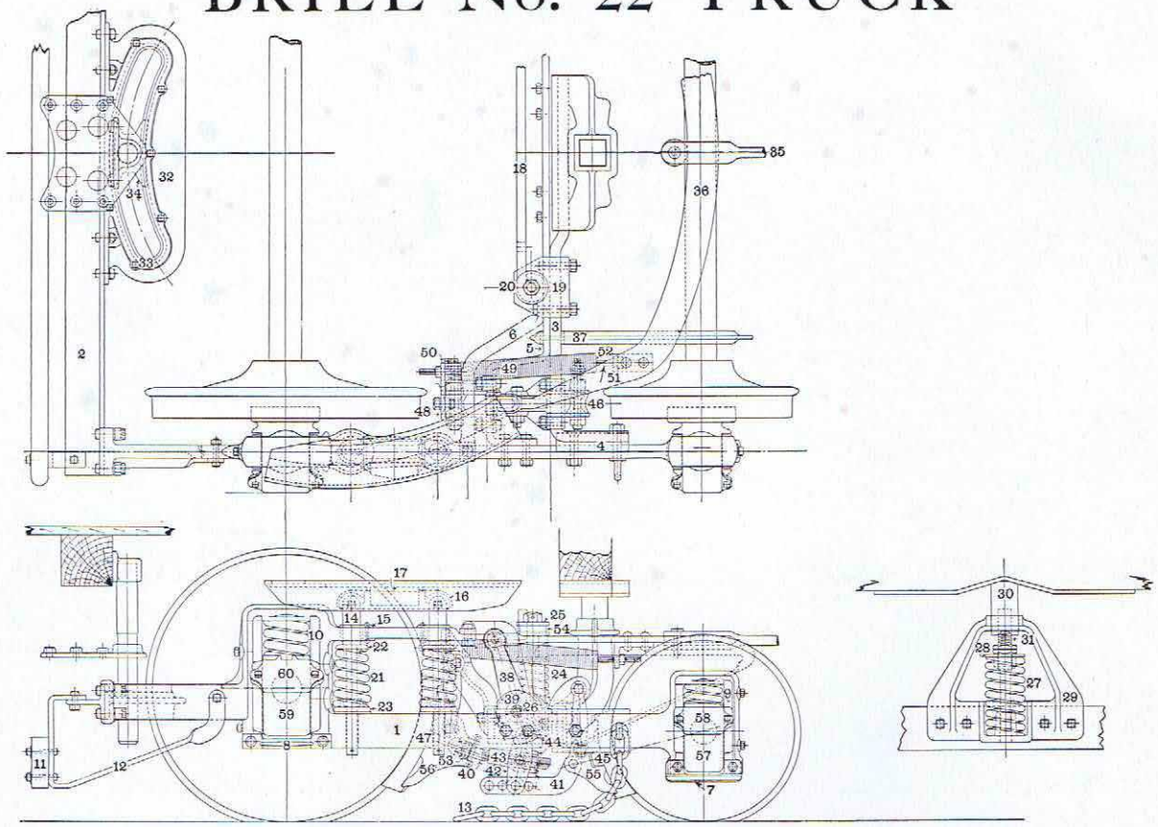
THE single-motor truck is essentially a city type, designed to minimize the height of the car floor by providing for radiation of the truck between the sills of cars having narrow bottom framing and also to reduce the initial cost, operating and maintenance expenses, by the single-motor equipment. In addition it can be used interchangeably with closed and open cars.

The trucks designated No. 22 and No. 22-E are the lightest double trucks made. They are identical except in the frame, the frame of the No. 22 truck being made with cast-steel wheel pieces, while those of the No. 22-E truck are solid forged. This type of truck is open at the center to accommodate large motors supported within the wheel base. The exact center is an imaginary point six inches inside the center of the driving axles; therefore the radiation of the driving wheels and motor is reduced to the minimum. As the truck is designed to be placed with the pony wheels toward the center of the car, the compression device for increasing the load on these wheels on curves is mounted on the truck and will be seen in the illustration at the center of the frame crossing near the pony wheels.

Except on curves the load is borne mostly upon side bearings which have anti-friction metal plates, one on the top and the other on the outside, which bear against the inner surfaces of angle plates attached to the side sills of the car. The angle plates are curved to confine the lateral movement on the truck on curves as well as on tangents. The pairs of spring posts on which the side bearings are mounted pass through brackets extending from the inner pedestals of the large yokes, the holes being fitted with bushings of anti-friction metal. The heads of the posts are round and the bolts which secure them in the sockets of the bearings allow a slight play for equalization.

The draft of the truck is taken by a king bolt secured to the end sill, or a sill specially introduced for the purpose, and supported by a casting bolted to two short timbers; the king bolt is connected to the truck by projecting downward through a block which slides in a radial slot in a casting attached to the end crossing.

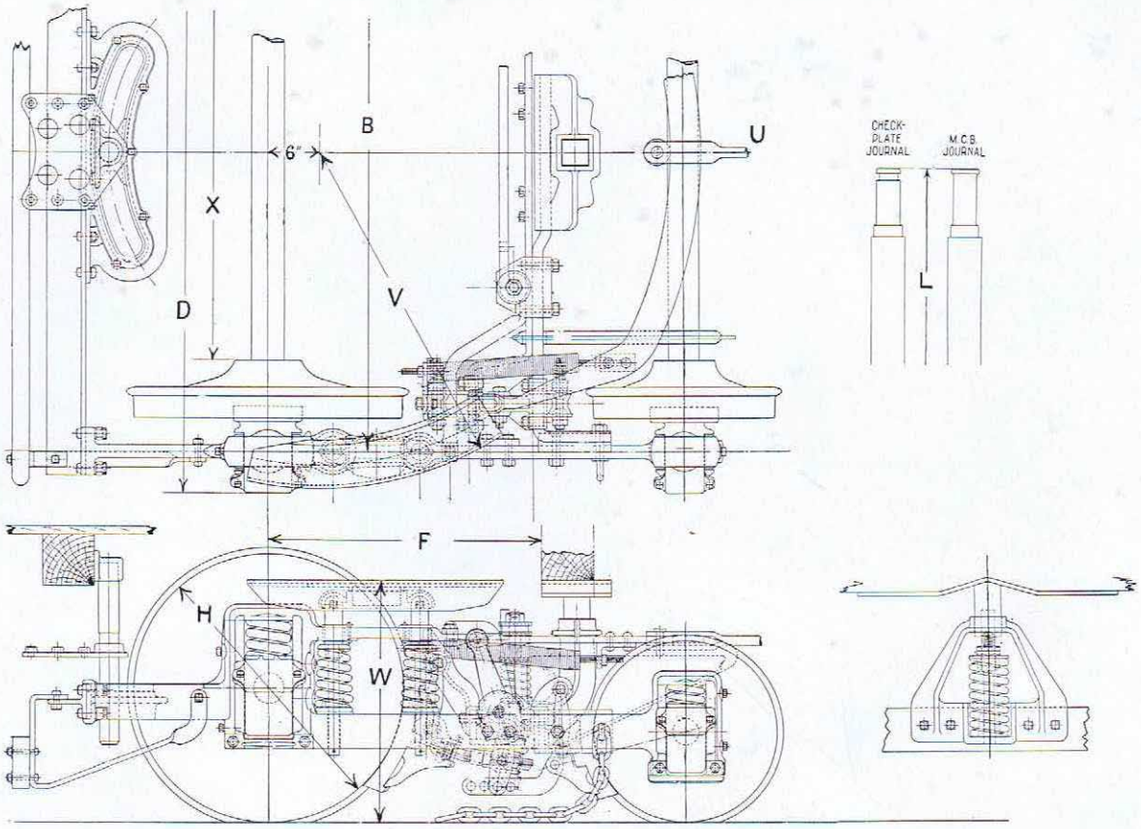
NAMES OF PARTS OF
BRILL No. 22 TRUCK



1. Side Frame
2. End Frame
3. Cross Bar
4. Cross Bar Carrier
5. Brake Hanger Carrier
6. Spring Post Frame Extension Brace
7. Pedestal Cap (Trail)
8. Pedestal Cap (Motor)
9. Pedestal Gib (Trail)
10. Pedestal Gib (Motor)
11. Wheelguard
12. Wheelguard Bracket
13. Safety Chain
14. Body Spring Post
15. Body Spring Post Bushing
16. Side Bearing
17. Side Bearing Wear Plate
18. Motor Suspension Bar
19. Motor Suspension Spring Bracket
20. Motor Suspension Bar Bolt
21. Body Spring
22. Body Spring Cap
23. Body Spring Seat
24. Motor Suspension Spring (Lower)
25. Motor Suspension Spring Cap (same for upper and lower springs)
26. Motor Suspension Spring Seat (same for upper and lower springs)
27. Compression Spring
28. Compression Spring Cap
29. Compression Spring Bracket
30. Compression Block
31. Compression Spring Post
32. Radial Casting
33. Radial Casting Plate
34. Radial Block
35. Brake Rod (Stub with Jaw and Roller)
36. Radius Bar
37. Radius Bar Slide
38. Live Lever
39. Live Lever Fulcrum
40. Bottom Truck Connection (Driving Wheel)
41. Bottom Truck Connection (Trail Wheel)
42. Brake Nut
43. Bottom Truck Connection Nut
44. Bottom Truck Connection Jam Nut
45. Brake Shoe (Trail Wheel)
46. Brake Hanger (Trail Wheel)
47. Brake Shoe (Driving Wheel)
48. Brake Hanger (Driving Wheel)
49. Brake Release Spring
50. Brake Release Spring Holder
51. Brake Release Spring Bolt
52. Brake Release Spring Nut
53. Brake Rod Spring
54. Motor Suspension Spring (Upper)
55. Brake Head (Trail Wheel)
56. Brake Head (Driving Wheel)
57. Journal Box (Trail Wheel)
58. Journal Box Lid (Trail Wheel)
59. Journal Box (Driving Wheel)
60. Journal Box Lid (Driving Wheel)

BRILL No. 22 AND No. 22-E TRUCKS

Patented and patents pending in the United States and Foreign Countries



Dimensions of Brill No. 22 and No. 22-E Trucks

			Metre					
	Gauge	3′0″	3′3⅜″	3′6″	4′0″	4′8½″	5′0″	5′2½″	5′3″
B	Centers of Side Frames	4′10″	4′10⅜″	5′2″	5′8⅛″	5′9¼″*	6′0¾″*	6′2⅜″*	6′2⅝″*
V	Radius of Rub Plates	2′8⅛″	2′9¼″	2′10⅞″	3′1⅞″	3′2 7/16″*	3′4 3/16″*	3′5½″*	3′5⅛″*
L	Length of Motor Axle—M. C. B. Journal	5′6¼″	5′6⅞″	5′10¼″	6′4⅜″	6′5½″*	6′9″*	6′10⅞″*	6′10⅞″*
	Length of Pony Axle—M. C. B. Journal	5′5″	5′5⅝″	5′9″	6′3⅛″	6′4¼″*	6′7¾″*	6′9⅝″*	6′9⅝″*
	Length of Both Axles—Check Plate Journals	5′5⅝″	5′6¼″	5′9⅝″	6′3¾″	6′5″*	6′8⅜″*	6′10¼″*	6′10¼″*
	Length of Both Axles—Check Plate Journals—Restricted Width	5′5⅜″	5′6¼″	5′9⅝″	6′3¾″	6′4⅞″*	6′8⅜″*	6′10¼″*	6′10¼″*
D	Width Over All—M. C. B. Journals	6′0¼″	6′1⅜″	6′4¾″	6′10⅞″	7′0″*	7′3½″*	7′5⅜″*	7′5⅜″*
	" " " —Check Plate Journals	6′0¾″	6′1⅜″	6′4¾″	6′10⅞″	7′0″*	7′3½″*	7′5⅞″*	7′5⅞″*
	" " " —Check Plate Journals—Restricted Width	5′7½″	5′8⅛″	5′11½″	6′5⅛″	6′6¾″*	6′10¼″*	7′0⅛″*	7′0⅛″*

H	Diameter of Driving Wheel	30″	33″
W	Height from Rail to Bottom of Car Sill—with Weight of Empty Car Body	26⅝″	28⅛″

* It is necessary to use a longer axle with wheels over 2¼″ width of tread. These dimensions require to be increased proportionately.

X Distance between hubs. This is variable.

F Distance from center of motor axle to crossing. We prefer to make this 31½″. It must be increased when the radiation of the truck on curves would cause the motor or motor supports to strike the 6″ crossings.

H Trucks built to suit driving wheels from 30″ to 33″ diameter; pony wheels from 20″ to 22″ diameter.

U Truck brakes furnished complete to this point only.

Driving wheel brake shoes can be hung outside the wheel base if desired to give clearance for magnetic brakes.

The Following Limitations are Recommended

Maximum Diameter of Motor Axle Journal	3¾″
Maximum Diameter of Pony Axle Journal	3″
Weight of Car Body with Equipment and Passenger Load—Not to Exceed	38,000 Lbs.
Speed—Not to Exceed	30 M. P. H.
Motors—Not to Exceed	50 H.-P.
	4′0″ Wheel Base