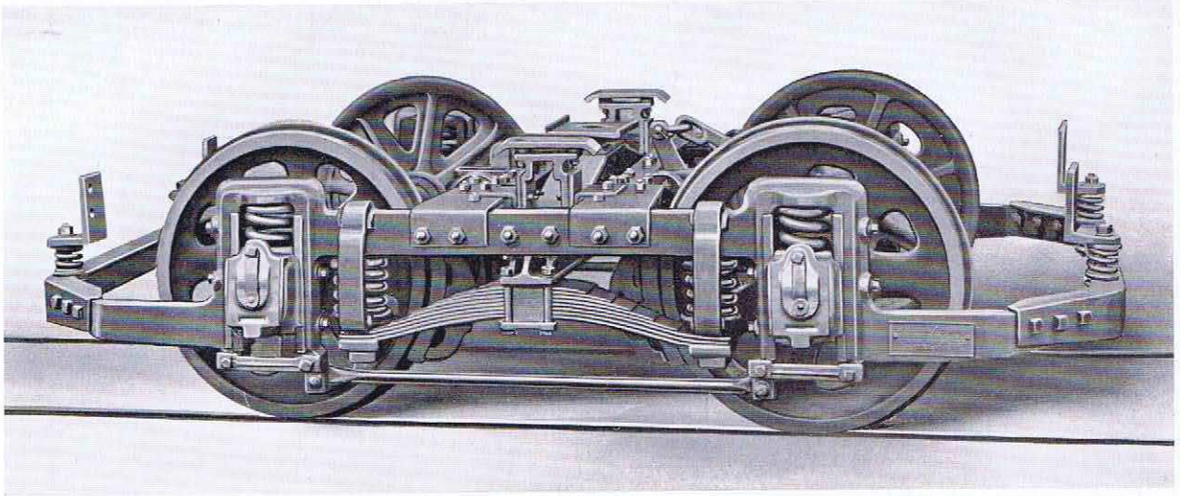


BRILL No. 27-G TRUCK

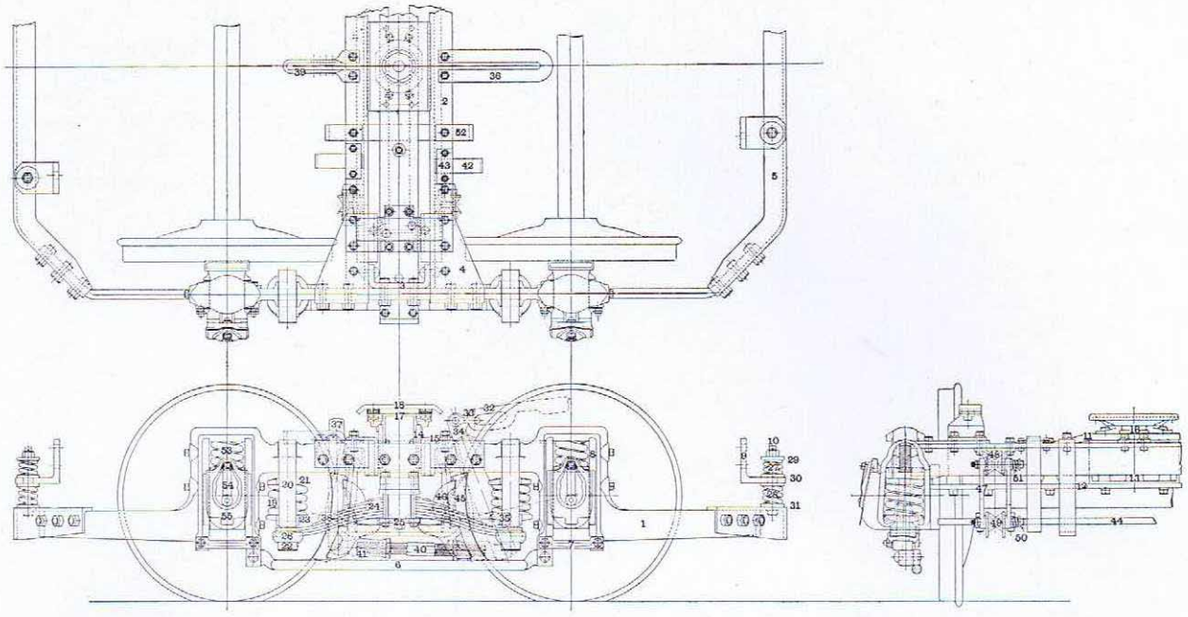
THE No. 27-G type has a wide field of service, but is especially adapted to combined city and suburban work. Many light interurban cars are operating with this truck, as it is capable of a speed of thirty miles an hour. To enable a center-pivotal truck, having equal-sized wheels, to radiate in the narrow space between the car sills, and clear the steps when rounding the short curves of city streets, a wheel base of not greater than four feet six inches is necessary. As the short base leaves no room for the motors to be placed between the axles and the transoms, they must be attached to supports resting on the truck frame end pieces. When the speed exceeds thirty miles an hour, the motors, with most of their weight outside the wheel base, set up oscillation in the frame. This is a necessary limitation in all trucks having outside hung motors.

The spring system consists of three sets which work in series and distribute the load from the truck bolster equally to each wheel without variation for the different levels on which the wheels may be resting. The truck bolster bears directly on semi-elliptic springs, which receive the load at their centers and transfer it to the frame at points wide apart, to obtain the greatest stability possible. The spring links amplify the action of the semi-elliptic springs, provide a wide spring base for the load, an elastic connection with the frame, and a cushioned side swing to the bolster. Journal springs bring the load to the wheels without interfering with the easy action of the boxes in the jaws; they are a part of the system of equalization, inasmuch as they permit the wheels to assume independent vertical positions.

The spring links of the No. 27-G Truck swing out at curves, and at the end of the swing the springs are compressed, cushioning the motion so that the car body is softly and steadily drawn away from the line of its momentum. The wheel flanges share the benefit of the cushioned side swing and take the curves without grinding or "climbing" the rail heads.

The brake rigging arrangement is of an exceedingly simple order, facilitating inspection and repairs. Inside hung brakes are used as the standard of this truck.

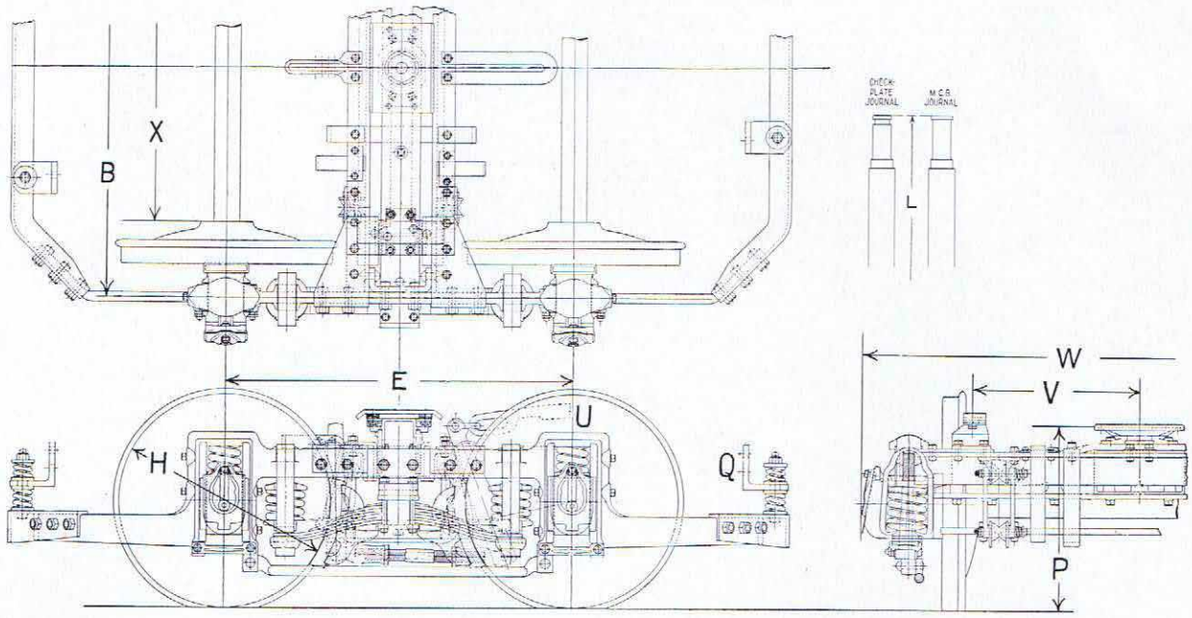
NAMES OF PARTS OF
BRILL TRUCK No. 27-G



1. Side Frame
2. Transom
3. Transom Corner Bracket (Inside)
4. Transom Gusset Plate
5. End Frame
6. Pedestal Tie Bar
7. Pedestal Cap
8. Pedestal Gib or Wear Plate
9. Motor Suspension Bar
10. Motor Suspension Bar Bolt
11. Bolster Top Plate
12. Bolster Bottom Plate
13. Bolster Filling Casting
14. Bolster Chafing Plate
15. Transom Chafing Plate
16. Truck Center Plate
17. Side Bearing
18. Side Bearing Wear Plate
19. Equalizer Spring
20. Equalizer Spring Link
21. Equalizer Spring Cap
22. Equalizer Spring Bolt
23. Equalizer Spring Seat
24. Bolster Spring
25. Bolster Spring Seat
26. Bolster Spring Seat Rocker
27. Motor Suspension Spring (Top)
28. Motor Suspension Spring (Bottom)
29. Motor Suspension Spring Cap
30. Motor Suspension Spring Seat (Top)
31. Motor Suspension Spring Seat (Bottom)
32. Brake Rod
33. Brake Rod Clevis
34. Live Lever
35. Live Lever Fulcrum
36. Live Lever Guide
37. Dead Lever
38. Dead Lever Fulcrum
39. Dead Lever Guide
40. Bottom Truck Connection
41. Bottom Truck Connection Jaw
42. Brake Release Spring
43. Brake Release Spring Clip
44. Brake Beam
45. Brake Shoe
46. Brake Head
47. Brake Hanger
48. Brake Hanger Carrier (Top)
49. Brake Hanger Carrier (Bottom)
50. Brake Hanger Spring Cap
51. Brake Hanger Spring
52. Brake Beam Safety Hanger
53. Journal Box Spring
54. Journal Box Lid
55. Journal Box

BRILL No. 27-G TRUCK

Patented and patents pending in the United States and Foreign Countries



Dimensions of Brill 27 G. 1 and 27 G. E. 1 Trucks

			Metre					
	Gage	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′3¼″*
V	Radius of Rub Plates	1′3¾″	1′5 7/16″	1′6¾″	1′9¾″	2′2″	2′3¾″	2′4¾″	2′4¾″
L	Length of Axle—M. C. B. Journal	5′6¼″	5′6⅞″	5′10¼″	6′4⅜″	6′5½″*	6′2″*	6′10⅞″*	7′0″*
	" " " —Check Plate Journal	5′5⅝″	5′6¼″	5′9⅝″	6′3¾″	6′5″*	6′8⅜″*	6′10¼″*	6′11⅛″*
	" " " —Check Plate Journal—Restricted Width	5′5⅜″	5′6¼″	5′9⅜″	6′3¾″	6′4⅞″*	6′8⅜″*	6′10¼″*	6′11⅛″*
W	Width Over All—M. C. B. Journal	6′0¼″	6′1⅜″	6′4¾″	6′10⅞″	7′0″*	7′3½″*	7′5⅜″*	7′6½″*
	" " " —Check Plate Journal	6′0¾″	6′1⅜″	6′4¾″	6′10⅞″	7′0″*	7′3½″*	7′5⅜″*	7′6½″*
	" " " —Check Plate Journal—Restricted Width	5′7½″	5′8⅛″	5′11½″	6′5⅝″	6′6¾″*	6′10¼″*	7′0⅜″*	7′1¼″*

Dimensions of Brill 27 G. E. 2 Trucks

			Metre					
	Gage	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′3″*	6′3¼″*
V	Radius of Rub Plates	1′3¾″	1′5 7/16″	1′6¾″	1′9¾″	2′2″	2′3¾″	2′4¾″	2′4¾″
L	Length of Axles—M. C. B. Journal	5′7¼″	5′7⅞″	5′11¼″	6′5⅜″	6′6½″*	6′10″*	7′0¼″*	7′1″*
	" " " —Check Plate Journal	5′8¾″	5′9⅜″	6′0¾″	6′6⅞″	6′8″*	6′11½″*	7′1¾″*	7′2½″*
W	Width Over All—M. C. B. Journal	6′2″	6′2⅝″	6′6″	7′0⅛″	7′1¼″*	7′4¾″*	7′7″*	7′7¾″*
	" " " —Check Plate Journal	6′0½″	6′1⅛″	6′4½″	6′10⅝″	6′11¾″*	7′3¼″*	7′5½″*	7′6¼″*

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

If only one motor is to be used, the angle iron cross-piece at the other end can be made straight if desired.

King bolt not furnished by truck builder.

Allow 11 inches for distance between car body bolster and bottom of truck bolster.

E Standard wheel base 4′6″. May be increased or decreased if necessary.

U Truck brakes are furnished complete to this point only.

X Distance between hubs. This is variable.

Q Motor supports are arranged to suit style of motor.

H	Diameter of Wheel	30″	33″	34″
P	Distance from Track to Underside of Body Bolster—Car Empty	27″	28½″	29″

The Following Limitations are Recommended

	27-G. 1 Cast Steel Side Frames	27-G. E. 1 Solid Forged Side Frames	27-G. E. 2 Solid Forged Side Frames
Maximum Diameter of Journal	3¾″	3¾″	4¼″
Wt. of Car Body with Equipment and Passenger Load—Not to Exceed	40,000 Lbs.	40,000 Lbs.	50,000 Lbs.
Speed—Not to Exceed	30 M. P. H.	30 M. P. H.	30 M. P. H.
Motors—Not to Exceed	50 H.-P.	50 H.-P.	65 H.-P.