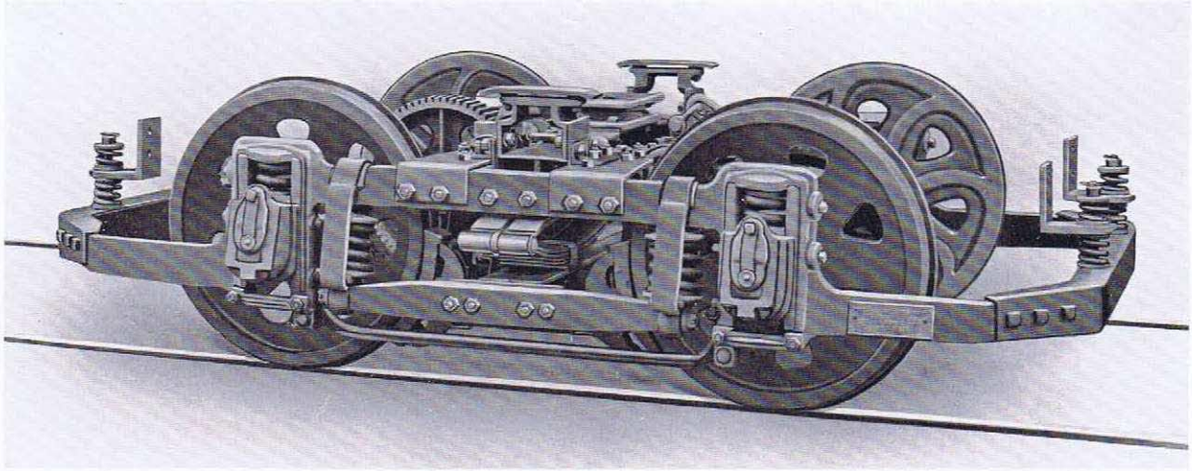


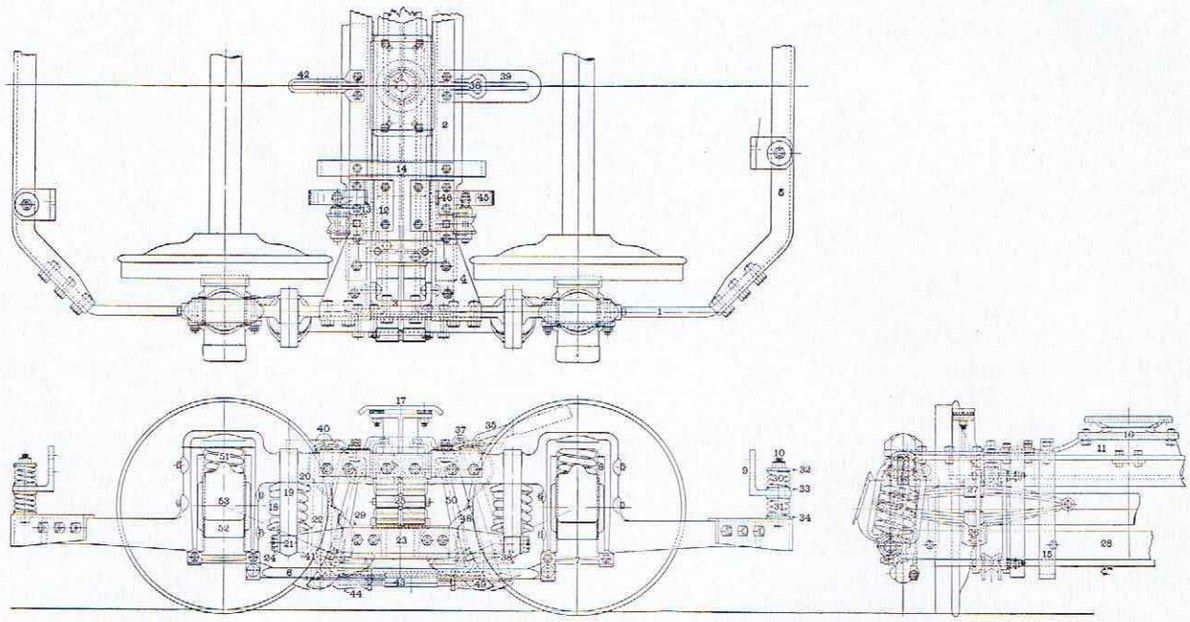
BRILL No. 27-F TRUCK

THE No. 27-F Truck combines the short-base feature of the No. 27-G with the spring system of the No. 27-E High-Speed Truck. The frame and motor supports are identical with those of the No. 27-G Truck, and except that the wheel base and equalizing bars are shorter, the truck is practically the same as the No. 27-E type. The spring system of the No. 27-F Truck is equal in elasticity to that of the No. 27-G, three sets of springs being used in both, and the method of equalization is the same in principle and result.

Although the principles of its design are readily comprehended, it will nevertheless be interesting to trace the load through the truck. The load is first received on the bolster, which rests on double elliptic springs; these springs are carried on the spring plank, to the end of which the equalizing bars are rigidly secured; spring links at the ends of the equalizing bars transfer the load to the frame; journal springs bring the load from the frame to the wheels. Each of the three sets of springs carries all of the car body load, and together they furnish an amount of spring action which produces an easy, steady and equalized truck. The action of the journal springs is vertical, that of spring links vertical and transverse, and the elliptics, besides having a vertical action, assist in the equalization by their torsional movement.

A feature which has an important bearing on the easy riding qualities of this truck is the entire freedom of the spring links and elliptic springs from the deadening effect of the weight and torque of the motors. The car body, therefore, derives the full benefit of the action of these springs, and in addition the journal springs cushion the truck frame against inequalities in the track and track crossings.

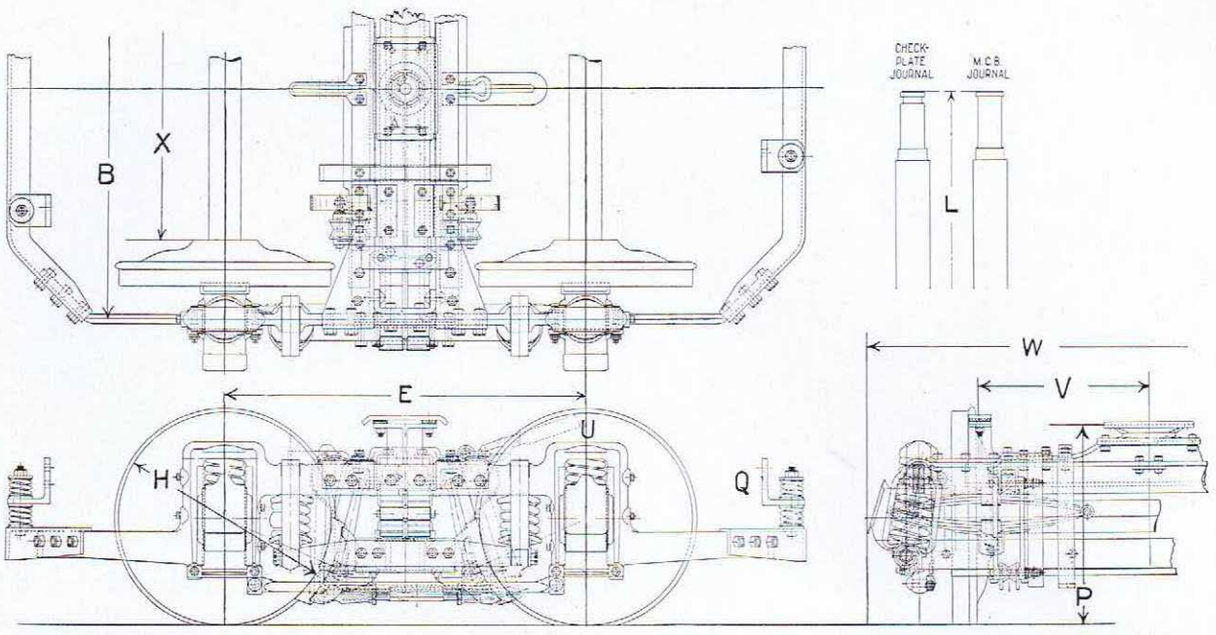
NAMES OF PARTS OF
BRILL No. 27-F TRUCK



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

BRILL No. 27-F TRUCK

Patented and patents pending in the United States and Foreign Countries



Dimensions of Brill 27-F. 1 and 27-F. 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′10⅝″	5′2″	5′8½″	5′9¼″*	6′0¾″*	6′2⅝″*	6′3¾″*
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′5⅜″	5′6¼″*	5′9⅜″	6′3¾″	6′5″*	6′8⅜″*	6′10¼″*	6′11⅜″*
	" " " —Check Plate Journal—Restricted Width	5′5⅜″	5′6¼″	5′9⅜″	6′3¾″	6′4⅞″*	6′8⅜″*	6′10¼″*	6′11⅜″*
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′5⅜″	6′6¾″*	6′10¾″*	7′0⅛″*	7′1¼″*

Dimensions of Brill 27-F. 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′10⅝″	5′2″	5′8½″	5′9¼″*	6′0¾″*	6′3″*	6′3¾″*
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′1¾″*	7′4¾″*	7′7″*	7′7¾″*
	" " " —Check Plate Journal	6′0½″	6′1⅛″	6′4½″	6′10⅝″	6′11¾″*	7′3¾″*	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.