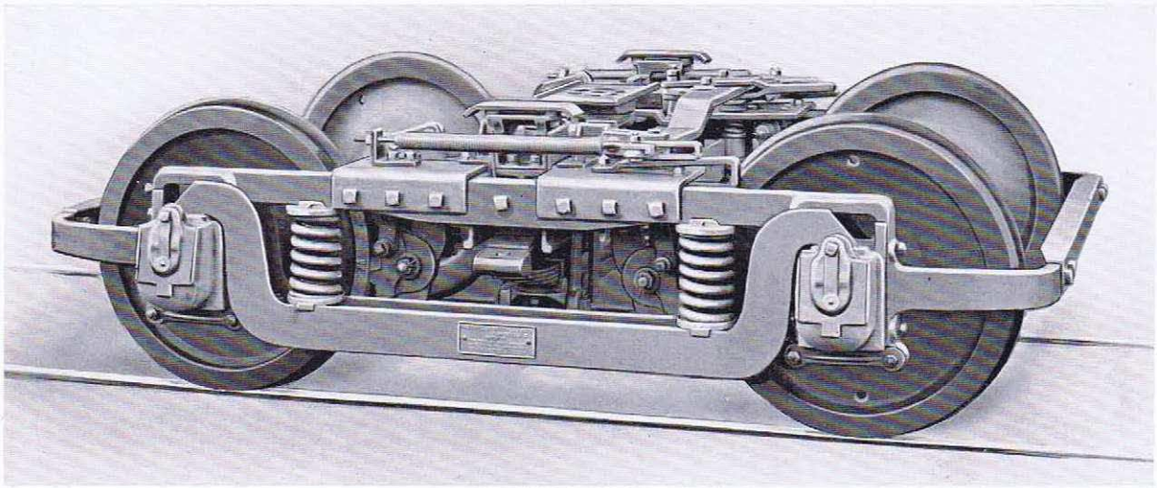


No. 27-M. C. B. 1 Truck

BRILL No. 27-M. C. B. TRUCK

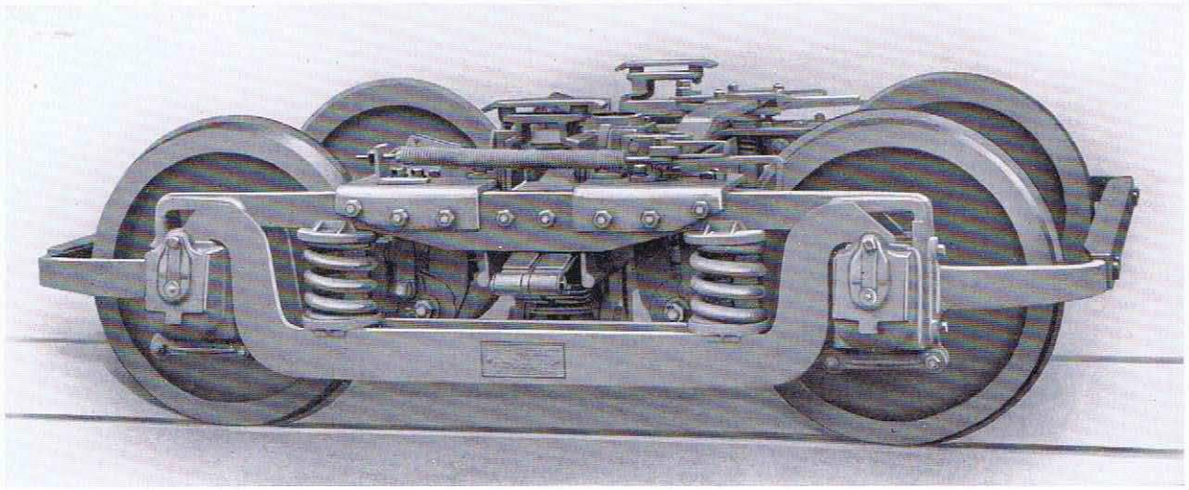
THIS truck is a "Master Car Builders" type with a distinctively Brill frame and Brill features, and is built for all classes of high speed motor and trail service. In design and construction it embodies the principles that have proved most desirable from every standpoint of operation and maintenance.

Frame construction is of paramount importance in trucks of this class. Broad experience with all forms of construction has proved conclusively that a frame with solid forged side frames is the only construction capable of maintaining squareness and providing security against loose parts, general deterioration and breakdowns. The torque of powerful motors, the frequent strains of rapid brake application when running at high speed, the cornerwise thrust in taking curves demand a frame with solid forged side frames for safety, efficiency and economy.

The solid forged side frames of these trucks are guaranteed against breakage, excepting when caused by collisions or derailments. We believe it to be a fact that no such guarantee can consistently be given on any side frame but a solid forged. As we are the only makers of frames by the solid forged process—side frames in which the pedestals are an integral part of the forging—we are in a position to build the best truck of this class.

The pedestal tie-bars consist of a channel double-bolted to an extension or foot on the inner pedestal (this extension or foot is not bolted nor welded on, but is included in the forging). There are two pedestal caps, or short tie-bars, to each pair of pedestals. The bolts which hold these bars in place are not in shear, as the lugs cast on the tie-bars take the strain. The arrangement prevents the bolts from rusting in. This and other betterments in details save time in replacing parts. Another excellent feature in the solid forged frame of these trucks is the low curved extension at each end, giving more clearance and adding more to the squareness of the entire frame than possible to any other construction; also the curving of the extensions gives plenty of surface to which to bolt the angle end frames.

A vital point in frame construction and one on which the squareness mainly depends—the junction of the side frame and the transom—is where this frame excels as much as in having solid forged side frames. It is because of the ample section of metal of the solid forged side frames that forged gusset plates of large

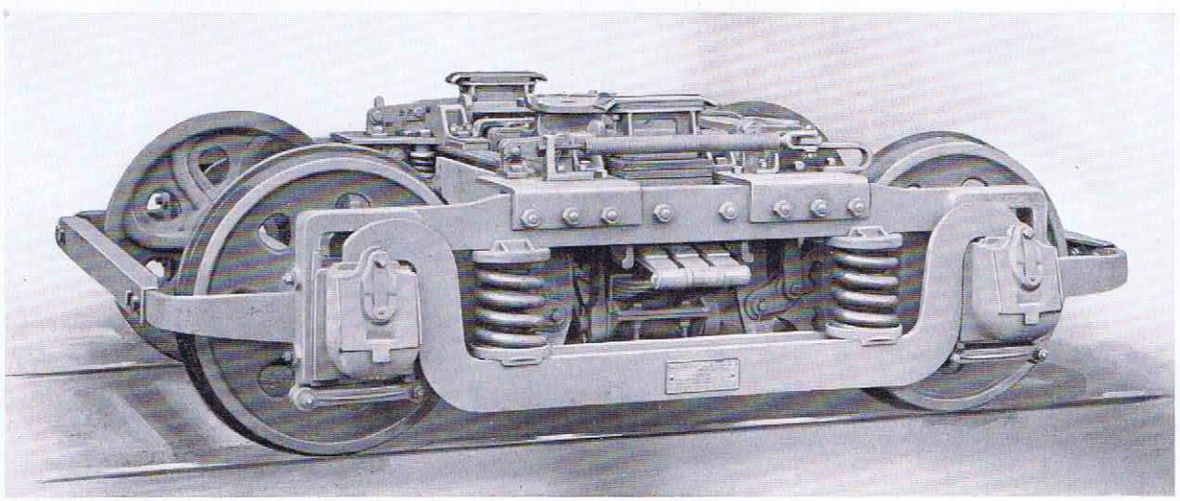


No. 27-M. C. B. 2 Truck

dimensions bent over and bolted through the side frame can be used, and also that wide forged single- and double-corner brackets can be employed. The bearings for the bolster swing links are on the gusset plates.

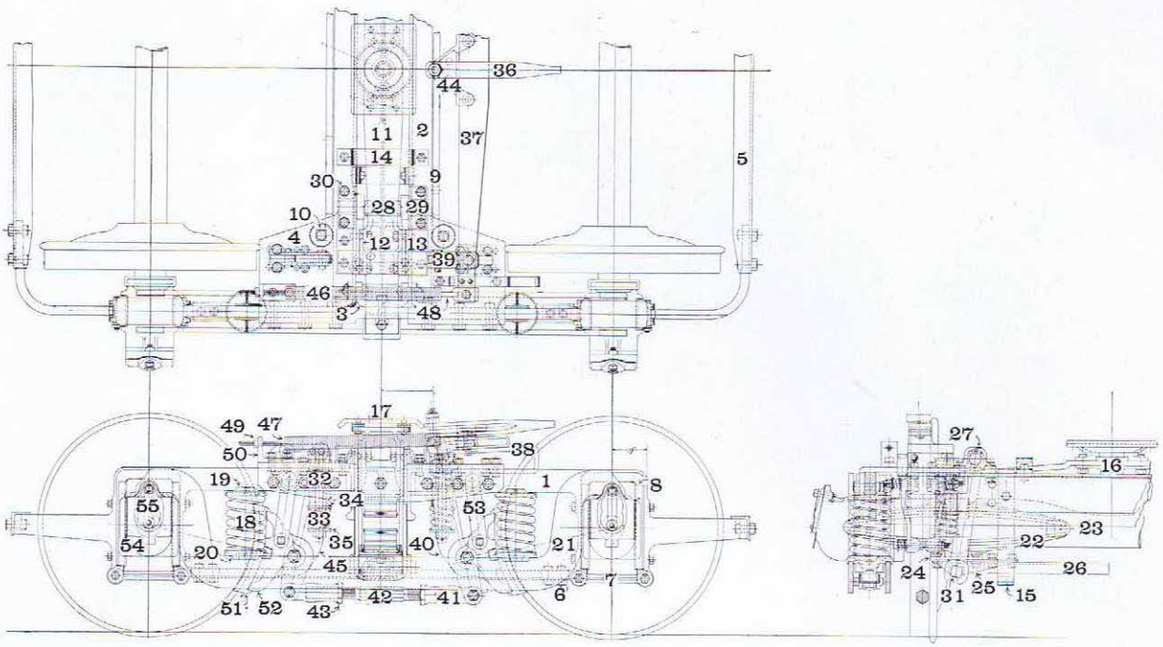
The one piece cast-steel bolster, of special design, is given the greatest strength for its weight by a correct distribution of metal. The use of shims for adjusting the height of the side bearings to compensate for wheel wear cannot be improved on for absolute dependence and simplicity. Having the chafing plates as high as the truck center plate gives a bearing for the bolster against the transoms directly in line with the pull. The chafing plates can be shimmed or replaced without removing the bolster.

The spring plank is of a special design and comprises substantial castings at the ends, connected across the truck by a channel.



No. 27-M. C. B. 3 Truck

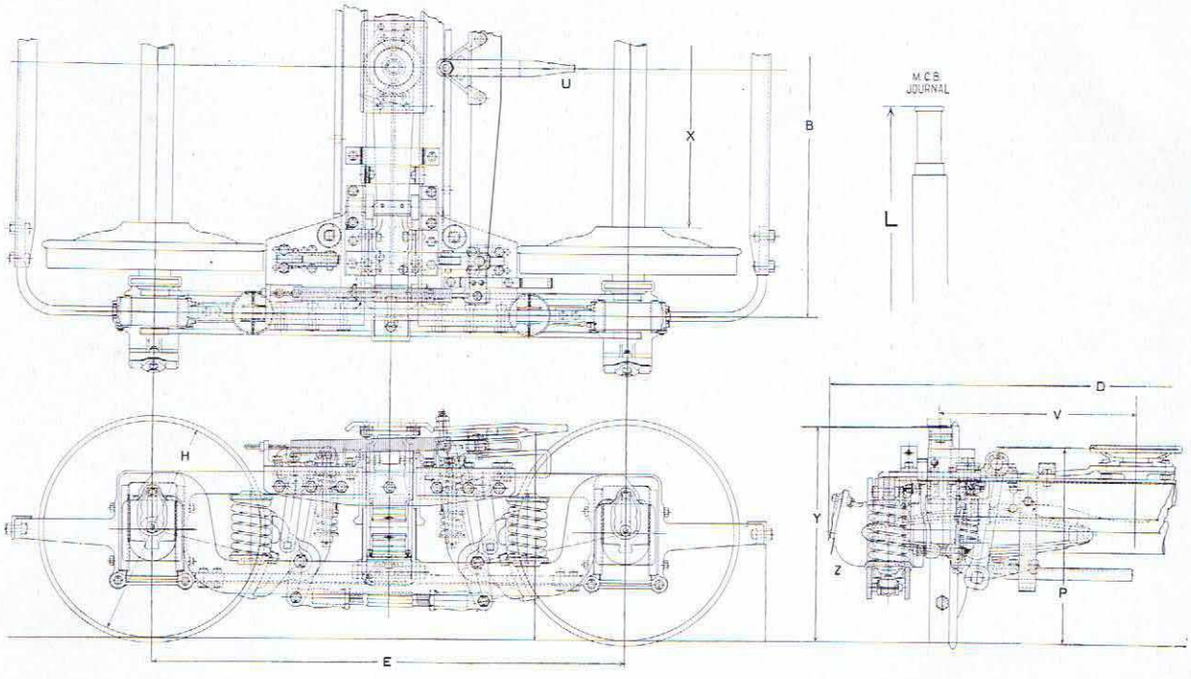
NAMES OF PARTS OF
BRILL NO. 27-M. C. B. TRUCK



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. Spring Plank Safety Hanger
16. Truck Center Plate
17. Side Bearing Wear Plate
18. Equalizer Spring
19. Equalizer Spring Cap
20. Equalizer Spring Seat
21. Equalizer or Equalizing Bar
22. Bolster Spring
23. Bolster Spring Scroll
24. Bolster Spring Seat
25. Bolster Spring Seat Rocker
26. Spring Plank
27. Swing Link or Bolster Hanger
28. Swing Link Pin (Top)
29. Swing Link Pin Pivot
30. Swing Link Pin Bearing
31. Swing Link Pin (Bottom)
32. Motor Suspension Spring (Top)
33. Motor Suspension Spring (Bottom)
34. Motor Suspension Spring Cap
35. Motor Suspension Spring Seat
36. Brake Rod
37. Radius Bar
38. Radius Bar Guide
39. Radius Bar Clevis
40. Live Lever
41. Brake Turnbuckle End
42. Brake Turnbuckle
43. Brake Turnbuckle Lock Nut
44. Brake Rod Fulcrum
45. Dead Lever
46. Brake Release Spring
47. Brake Release Spring Casting (location indicated)
48. Brake Release Spring Hook Bolt
49. Brake Release Spring Nut
50. Brake Release Spring Clip
51. Brake Shoe
52. Brake Head
53. Brake Hanger
54. Journal Box
55. Journal Box Lid

BRILL No. 27-M. C. B. TRUCK

Patented and patents pending in the United States and Foreign Countries



Dimensions of Brill 27 M. C. B. Trucks

		27 M. C. B. 1							27 M. C. B. 2-X							27 M. C. B. 2						
	Gage	3′3⅜″	3′6″	4′0″	4′8½″	5′0″	5′2½″	5′3″	3′3⅜″	3′6″	4′0″	4′8½″	5′0″	5′2½″	5′3″	3′3⅜″	3′6″	4′0″	4′8½″	5′0″	5′2½″	5′3″
B	*Centers of Side Frames	5′0″	5′2½″	5′8½″	6′3″	6′6½″	6′9″	6′9″	5′1″	5′3½″	5′9½″	6′3″	6′6½″	6′9″	6′9″	5′1″	5′3½″	5′9½″	6′3″	6′6½″	6′9″	6′9″
V	Radius of Rub Plates	1′11½″	2′1½″	2′4″	2′6″	2′7¾″	2′9″	2′9″	1′11½″	2′1½″	2′4″	2′6″	2′7¾″	2′9″	2′9″	1′11½″	2′1½″	2′4″	2′6″	2′7¾″	2′9″	2′9″
L	*Length of Axle	5′8¾″	5′10¾″	6′4¾″	6′11¾″	7′2¾″	7′5¾″	7′5¾″	5′10¾″	6′0¾″	6′6¾″	7′0¾″	7′3¾″	7′6¾″	7′6¾″	5′10¾″	6′0¼″	6′6¾″	7′0¾″	7′3¾″	7′6¾″	7′6¾″
D	*Width Over All	6′6″	6′8½″	7′2½″	7′9″	8′0½″	8′3″	8′3″	6′7″	6′9½″	7′3½″	7′9″	8′0½″	8′3″	8′3″	6′7″	6′9¼″	7′3½″	7′9″	8′0½″	8′3″	8′3″
E	Wheel Base	6′0″ and 6′6″							6′0″ and 6′6″							6′3″ and 6′6″						
H	Wheel Diameter	30″		33″		36″			30″		33″		36″			30″		33″		36″		
P	Height of Body Bolster with Empty Body	28½″		30″		31½″			28½″		30″		31½″			29½″		31″		32½″		
Y	Height (Minimum) of Side Bearings with Empty Body	31½″		33″		34½″			31½″		33″		34½″			32½″		34″		35½″		

		27 M. C. B. 3-X							27 M. C. B. 3						
	Gage	3′3⅜″	3′6″	4′0″	4′8½″	5′0″	5′2½″	5′3″	3′3⅜″	3′6″	4′0″	4′8½″	5′0″	5′2½″	5′3″
B	*Centers of Side Frames	5′4″	5′6½″	6′0½″	6′4″	6′7½″	6′10″	6′10″	5′4″	5′6½″	6′0½″	6′4″	6′7½″	6′10″	6′10″
V	Radius of Rub Plates	1′11½″	2′1½″	2′4″	2′6″	2′7¾″	2′9″	2′9″	1′11½″	2′1½″	2′4″	2′6″	2′7¾″	2′9″	2′9″
L	*Length of Axle	6′2½″	6′5″	6′11″	7′2¼″	7′6″	7′8½″	7′8½″	6′2½″	6′5″	6′11″	7′2¼″	7′6″	7′8½″	7′8½″
D	*Width Over All	6′11¾″	7′1¾″	7′7¾″	7′11¾″	8′2¾″	8′5¾″	8′5¾″	6′11¾″	7′1¾″	7′7¾″	7′11¾″	8′2¾″	8′5¾″	8′5¾″
E	Wheel Base	6′3″ and 6′6″							6′6″ and 7′0″						
H	Wheel Diameter	30″		33″		36″			33″		36″				
P	Height of Body Bolster with Empty Body	30″		31½″		33″			33″		34½″				
Y	Height (Minimum) of Side Bearings with Empty Body	33″		34½″		36″			36″		37½″				

		27 M. C. B. 4-X							27 M. C. B. 4						
	Gage	3′3⅜″	3′6″	4′0″	4′8½″	5′0″	5′2½″	5′3″	3′3⅜″	3′6″	4′0″	4′8½″	5′0″	5′2½″	5′3″
B	*Centers of Side Frames	5′7″	5′9½″	6′3½″	6′5″	6′8½″	6′11″	6′11″	5′7″	5′9½″	6′3½″	6′5″	6′8½″	6′11″	6′11″
V	Radius of Rub Plates	1′11½″	2′1½″	2′4″	2′6″	2′7¾″	2′9″	2′9″	1′11½″	2′1½″	2′4″	2′6″	2′7¾″	2′9″	2′9″
L	*Length of Axle	6′6½″	6′9″	7′3″	7′4½″	7′8″	7′10½″	7′10½″	6′6½″	6′9″	7′3″	7′4½″	7′8″	7′10½″	7′10½″
D	*Width Over All	7′3¼″	7′5¾″	7′11¾″	8′1¾″	8′4¾″	8′7¼″	8′7¼″	7′3¼″	7′5¾″	7′11¾″	8′1¼″	8′4¾″	8′7¼	8′7¼″
E	Wheel Base	6′6″ and 7′0″							7′0″ and 8′0″						
H	Wheel Diameter	33″		36″					33″		36″				
P	Height of Body Bolster with Empty Body	33½″		35″					34″		35½″				
Y	Height (Minimum) of Side Bearings with Empty Body	36½″		38″					37″		38½″				

* If width of motor does not allow length of wheel hub to equal diameter of wheel bore, these dimensions may be increased.
X Distance between hubs. This is variable to suit motor.
U Truck brakes furnished to this point only.
Z Contact beam support cast on journal boxes if required.
King bolt not furnished by truck builder.

The Following Limitations are Recommended

	27 M. C. B. 1	27 M. C. B. 2-X	27 M. C. B. 2	27 M. C. B. 3-X	27 M. C. B. 3	27 M. C. B. 4-X	27 M. C. B. 4
Maximum Diameter of Journal	3¼″	4¼″	4¼″	5″	5″	5½″	5½″
Weight of Car Body with Equipment and Passenger Load—Not to Exceed	46,000 Lbs.	46,000 Lbs.	63,000 Lbs.	63,000 Lbs	88,000 Lbs.	88,000 Lbs.	120,000 Lbs.
Speed—Not to Exceed	50 M. P. H.	50 M. P. H.	60 M. P. H.	60 M. P. H.	65 M. P. H.	65 M. P. H.	75 M. P. H.
Motors—Not to Exceed	75 H.-P.	75 H.-P.	125 H.-P.	125 H.-P.	200 H.-P.	200 H.-P.	250 H.-P.