foot than upon a long one, because the locomotive, which is much heavier than an equal length of cars, may cover the whole of a short span, but only a part of a longer one. The largest engines in use upon our railroads weigh from 75,000 to 80,000 pounds on a wheel-base of not over twelve feet in length, or 2,800 pounds per foot for the whole length of the engine, and from 20,000 to 24,000 pounds on a single pair of wheels. The heaviest coal-trains will weigh nearly a ton to the foot, ordinary freight-trains from 1,600 to 1,800 pounds, and passenger-trains from 1,000 to 1,200 pounds per foot. Any bridge is liable to be traversed by two heavy freight-engines followed by a load of three-quarters of a ton to the foot; so that if we proportion a bridge to carry 3,000 pounds per foot for the total engine length, and one ton per foot