To all whom it may concern:

Be it known that I, THOMAS H. SYMINGTON, of Baltimore, State of Maryland, have invented certain new and useful Improvements in Check-Plates for Draft-Gears, of which the following is a specification.

This invention relates to a check plate casting for draft gears and particularly to a new and improved construction of check plate in which the metal is so distributed as to present to the stresses applied to it the greatest possible resistance in proportion to the weight of metal employed.

A further object of the invention is to so form and arrange the check plate and the various features thereof that the necessity for the use of cores is eliminated and the cost in time and labor as well as in the weight of metal used in the production of the castings, is reduced to the minimum. Also the metal is of substantially uniform thickness throughout so that cooling is uniform and cracking due to internal stresses is prevented. In this way I produce a check plate which is most efficient for the general purpose to which it is applied both in that the metal is so distributed as to offer the greatest resistance per unit of weight and also in that the casting is so formed that it can be made with the least expenditure of time and hence with the minimum cost for labor; the labor cost being largely reduced because of the fact that cores, which are eliminated, are expensive to make and use, and in the production of cored castings, the highest price of foundry labor is essential.

My invention in its preferred form is illustrated in the accompanying drawings in which:

Figure 1 is an elevation of a check plate taken from the face which is turned in when the draft gear is set up. Fig. 2 is a bottom plan. Fig. 3 is a horizontal section on the line 3, 3 of Fig. 1 looking downward. Fig. 4 is a vertical transverse section on the line 4, 4 of Fig. 1. Fig. 5 is a section similarly taken on the line 5, 5 of the same figure.

Referring to the drawing, the device consists of a single casting. The check plate as shown is intended to be used with a tandem spring draft gear. Therefore it has not only the front stop or abutment 1 and rear stop 2, but it has also an intermediate abutment 3 which carries a front stop surface to cooperate with the rear set of springs and a rear stop surface 5 to cooperate with the front set of springs. Though the check plate shown is particularly designed for use in a tandem spring draft gear, it can, without invention, be so modified as to suit any type of draft gear.

To the end that the casting may be suitably lightened, the protruding portions forming the various abutments are made hollow; that the stop surfaces may be suitably supported, the hollows or chambers as formed are traversed by supporting webs 6, 7, 8. These, in order that they may present the greatest possible resistance to the drawing and buffing stresses in proportion to the weight of metal in use, are elongated and extend in the direction of the drawing and buffing stresses applied to the draft gear, so that the stresses applied thereto are of direct compression. As I have stated, the projecting portions of the check plate are hollow, the chambers thus formed opening in a direction normal, i.e., at right angles to the plane of the check plate or draft sills, so that the casting may be conveniently made in a two-part flask without cores.

Looking at the casting from its inner face, at each end and between the abutments are depressed portions 9, 10, 11 and 12 having their rear or outer surfaces 13 in a single plane which is vertical and extends longitudinally of the car when the check plate is in position, the surfaces 13 being in fact placed against the inner faces of the draft sills to which the check plates are riveted or bolted. The bolts pass through apertures 14 in the depressed portions. Between the stops or abutments proper 1, 2 and 3 are limiting abutments 15 and 16 for limiting the travel of the followers. These are slightly raised portions between the abutments, the same being hollow and open from the rear or flat surface 13. These limiting stops are partially reinforced by the raised portions 16 of the plate and the horizontal ribs 17.

By observation of the drawing it will be noticed that the distribution of the metal is uniform, the thickness at all points being equal, so that cooling is uniform tending to do away with internal stresses. The uniformity of distribution is such as to give equal cooling so that the cracks due to internal stresses set up at this time are reduced to a minimum. At the same time the strength
and resistance of the casting is in a way massed at the stops, particularly the rear stops which are to receive the thrust in buffing, so that the distribution of the metal is such as to give the greatest strength, and all parts are placed so that they do not interfere with the draft and no cores are necessary.

I have thus described specifically a single embodiment of my invention in order that its nature and operation may be clearly understood. However, the specific terms herein are used in their descriptive rather than in their limiting sense and the scope of the invention is defined in the claim.

I claim:—

A cheek plate casting for tandem draft gears, the casting being of uniform thickness throughout and having a flat rear surface 13 in a single plane to engage the sill, the cheek plate being provided with front and rear single-flange abutments 1 and 2 with supporting ribs and a central abutment 3 open to the front, limiting abutments 15 open to the rear, raised guiding portions 16 for the followers also open to the rear and depressed portions 10 and 11 open to the front and having apertures therein to receive bolts or rivets to fasten the cheek plates to the sills, the depressed portions being formed in the guiding portions and in the limiting abutments.

Signed by me at Baltimore this 27th day of December 1913.

THOMAS H. SYMINGTON.

Witnesses:
EDWIN F. SAMUELS,
E. W. WEHMeyer.