F. B. MORSE.

Improvement in Felly-Plates.

No. 115,504. Patented May 30, 1871.

fig. 1.

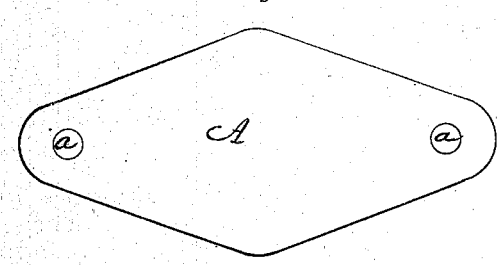

fig. 2.

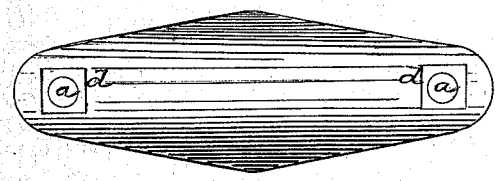

fig. 3.

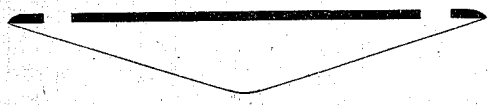

fig. 4.

Witnesses
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UNITED STATES PATENT OFFICE.

FRANCIS B. MORSE, OF PLANTSVILLE, CONNECTICUT, ASSIGNOR TO H. D. SMITH & CO., OF SAME PLACE.

IMPROVEMENT IN FELLY-PLATES.

Specification forming part of Letters Patent No. 115,504, dated May 30, 1871.

To all whom it may concern:

Be it known that I, FRANCIS B. MORSE, of Plantsville, in the county of Hartford and State of Connecticut, have invented a new Improvement in Felly-Plates; and I do hereby declare the following, when taken in connection with the accompanying drawing and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawing constitutes part of this specification, and represents, in—

Figure 1, the blank; Fig. 2, a top view of the plate complete; Fig. 3, a longitudinal central section; and in Fig. 4, a transverse vertical section.

This invention relates to an improvement in the plate which is arranged upon the inside of the felly at the joint and bolted to the felly, for the purpose of securing the two ends of the felly at their meeting; the object being the construction of a plate so that it may as little as possible interfere with the symmetry of the felly.

Heretofore fellies have been made of an equal thickness over the entire surface, leaving a square edge to appear, or in some cases lightly chamfered. This causes the plate to show its full thickness on the surface of the felly, and gives a bungling appearance, which by my invention is overcome; and it consists in constructing the plate from a blank first cut of suitable size and form, and drawn from a point at or near the center to the edge, reducing the thickness gradually from or near the said central point to the edges, as more fully hereinafter described. My invention also consists in forming upon the surface of the plate flat beds for the nuts.

The blank A, Fig. 1, is cut from a sheet of metal of suitable thickness and of the size and form of the plate to be produced, less so much as the plate will be extended by drawing. The flat blank is then placed over a die, the perforations *a a* serving as guides to hold it in position, and the die the shape of the inside of the plate when finished—that is to say, the die is curved or made to a convexity corresponding to the inner surface of the felly to which the plate is to be applied, as denoted by the concave side in Fig. 4. Then over this is forced down the follower, which is made concave corresponding to the exterior of the plate to be produced, as denoted by the outer surface of Fig. 4. This bends the blank down over the die, and as the follower or upper die is narrower than the lower die, with the thickness of the metal added thereto, it will draw the metal from the center toward the edges, producing it in the shape seen in Fig. 4, gradually diminishing in thickness from or near the center to the edges, the rounded ends in like manner drawn as in Fig. 3.

By this construction the plate, when fixed to the felly, presents only the thin edge, and that gradually increasing to the full thickness at at the center it is scarcely perceptible on the wheel, and does not disfigure the wheel as does the common felly-plate.

Heretofore the nuts which secure the plate to the felly have been screwed on to take their bearing upon the curved surface of the plate, and as this can only be done in a central line the bearing for the nut is extremely small, and a recess is necessarily left between the edges of the nut and the plate. This arrangement is objectionable, both from its appearance and the liability of the nut to be loosened, in consequence of its small bearing.

To overcome these objections I form a flat surface, *d*, on the plate around the bolt-holes *a*, either by leaving the metal flat, as at *f*, Fig. 4, presenting a slightly-raised surface, or by making a depression at the same point, and this is done by the same die, before described, for shaping the plate.

I claim as my invention—

1. A felly-plate which, in the process of forming, is reduced or drawn from a point at or near the center to the edges, substantially as described.

2. A felly-plate having the flat seats *d d* formed around the bolt-holes *a*, as and for the purpose specified.

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Witnesses:
E. E. PADDOCK,
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