

No. 775,807.

PATENTED NOV. 22, 1904.

E. EINFELDT.
METALLIC WAGON FRAME.
APPLICATION FILED JUNE 23, 1904.

NO MODEL.

2 SHEETS—SHEET 2.

Fig. 7.

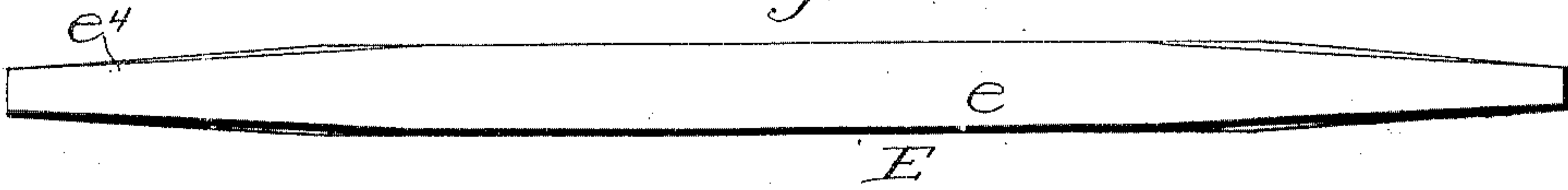


Fig. 8.

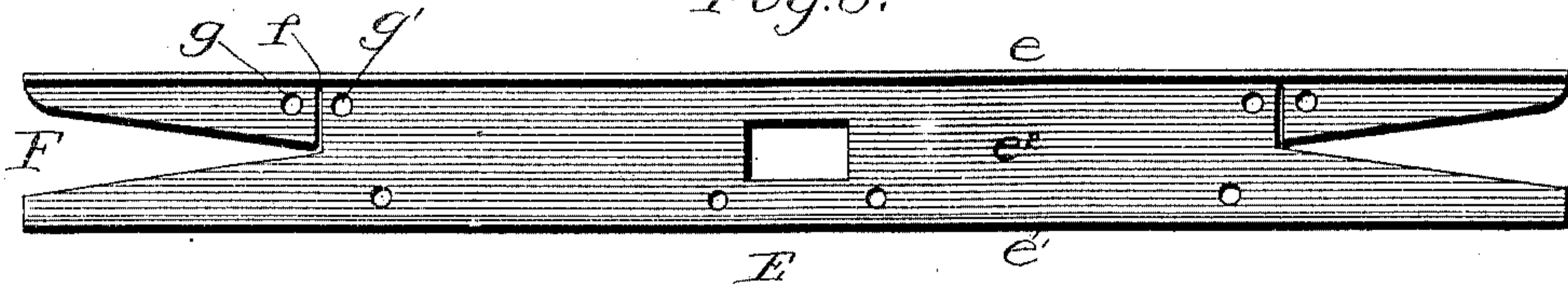


Fig. 9.

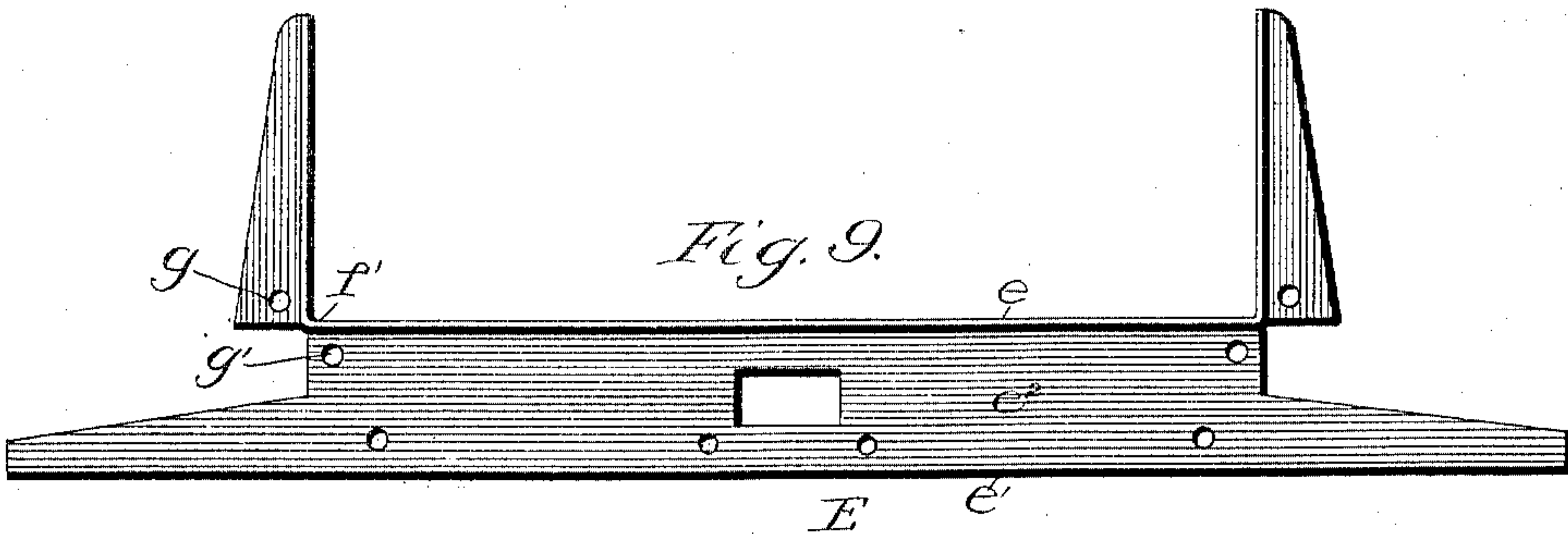


Fig. 10.

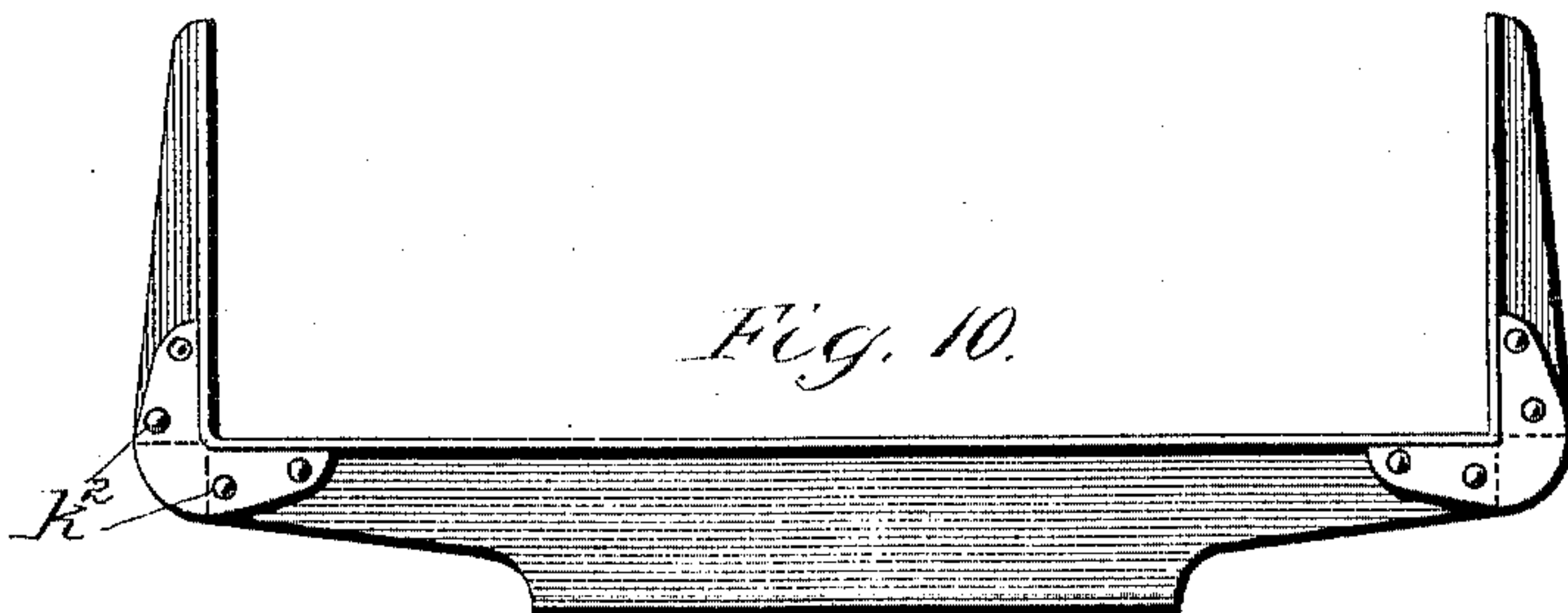
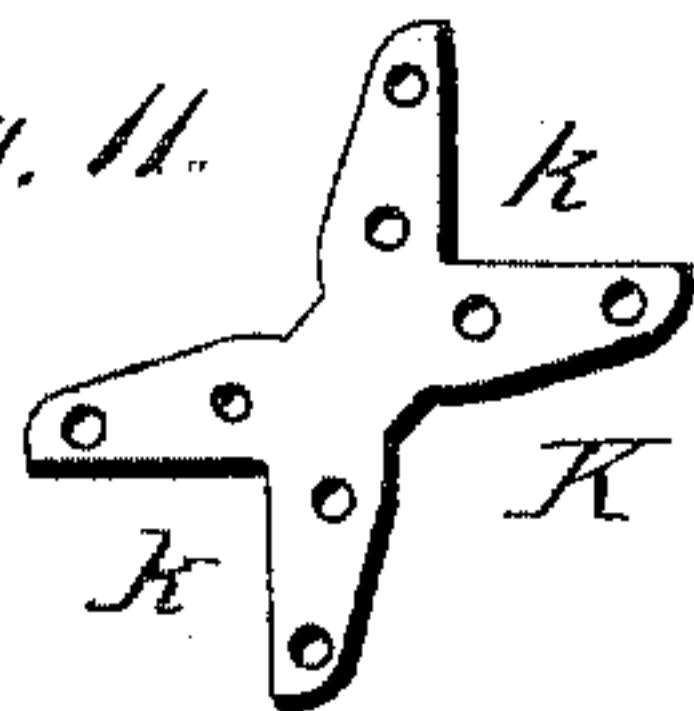


Fig. 11.



Witnesses
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UNITED STATES PATENT OFFICE.

EMIL EINFELDT, OF DAVENPORT, IOWA, ASSIGNOR TO THE BETTENDORF METAL WHEEL COMPANY, OF DAVENPORT, IOWA, A CORPORATION OF IOWA.

METALLIC WAGON-FRAME.

SPECIFICATION forming part of Letters Patent No. 775,807, dated November 22, 1904.

Application filed June 23, 1904. Serial No. 213,900. (No model.)

To all whom it may concern:

Be it known that I, EMIL EINFELDT, of Davenport, county of Scott, and State of Iowa, have invented a new and useful Improvement in Metallic Wagon-Frames, of which the following is a specification.

This invention relates to metallic wagon-gears, and has reference more particularly to the construction of the axle, bolster, and stakes, the aim of the invention being to produce a structure of this character which will possess great strength, rigidity, and wearing qualities and which may be manufactured at comparatively little cost.

With these ends in view my invention consists in a wagon bolster and stakes formed from a single member or blank, the ends of which are turned up to constitute the stakes, in combination with a connecting or bracing member applied to the body of the blank and upwardly-bent ends at their junction and serving to maintain said parts firmly and rigidly in their proper relations.

The invention consists also in combining with the stakes and bolster integral outward continuations to form supports for the wheel-spindles or axle-skein.

The invention consists also in combining with the stakes and the spindle-supports an axle-skein applied so as to serve, in addition to its usual functions, as a connecting member or brace for the stakes to maintain them firmly upright.

The invention consists also in the combination, with a combined axle, bolster, and stakes, of an axle-skein applied so as to constitute an integral part of the same.

The invention consists also in the details of construction and combination of parts herein-after described and claimed.

In the accompanying drawings, Figure 1 is a front elevation of the combined axle, bolster, and stakes having the axle-skein applied thereto in accordance with my invention. Fig. 2 is a top plan view of the same. Fig. 3 is a transverse sectional elevation on the line *a a* of the preceding figures looking in the direction of the arrows. Fig. 4 is a vertical trans-

verse sectional elevation on the line *b b* of Fig. 1 as viewed in the direction of the dotted arrow in said figure. Fig. 5 is a perspective of the axle-skein detached. Fig. 6 is a side elevation of the blank from which the bolster, axle, and the stakes are formed. Fig. 7 is a top plan view of the same. Fig. 8 is a side elevation showing how the blank is treated in order to permit the ends to be turned to form the stakes. Fig. 9 is a similar view showing the ends turned up and constituting the stakes. Fig. 10 is a side elevation of a modified construction of the bolster and stakes and the manner of bracing the same. Fig. 11 is a plan view of one of the bracing connecting members.

Referring to the drawings, in the preferred embodiment of my invention, which is represented in Figs. 1 to 9, inclusive, the axle, bolster, and stakes are formed from a single section of I-beam, and the axle-skeins are so formed and applied that in addition to their usual functions they will serve as bracing or connecting members to maintain the parts of the structure rigidly in their proper relations; but in cases where the bolster and stakes are formed as a separate structure from the axle the bracing or connecting member for maintaining the stakes upright and in their proper relations is in the form of a plate constructed and applied as shown in Figs. 10 and 11 and serving in a manner similar to the skein to hold and brace the stakes firmly in upright positions.

Referring now to Figs. 1 to 9, A represents the body of the axle, formed with end extensions *A'*, forming supports for the axle-skein. B represents the bolster, which is in the form of an upward continuation of the body of the axle. C represents the stakes rising from the ends of the bolster, and D the axle-skein applied over the ends of the extensions *A'* and formed with an inward extension *d*, embracing the ends of the axle and bolster and lower ends of the stake and serving as a bracing and connecting member for said parts.

The bolster, axle, and stakes I preferably form from a single section or length of I-beam

E, such as shown in Fig. 6, having the usual upper horizontal flange e , the lower horizontal flange e' , and an upright central connecting-web e'' , and in proceeding to form the axle, bolster, and stakes from this section I first bevel the side edges of the flanges for some distance back from their ends, as shown at e^4 , Fig. 7, so that the upper flange, which is to eventually constitute the stakes, will taper toward the upper end, and the lower flange, which is eventually to constitute the wheel-spindle supports, will present a tapering surface to conform to the taper spindle or axle-skein.

I next by any suitable means form a V-notch F in the ends of the blank by slitting through the web in two converging lines starting from points a short distance above the lower flange and a short distance below upper flange and meeting each other some distance inward of the ends of the blank, at which meeting point the slit in the web is carried upward vertically, as at f , Fig. 8, and terminates at the under side of the upper flange. As a result of this operation the upper flange and a portion of the connected web are cut loose from the body of the blank at its ends, the flange being tapered toward its end, while the edge of the web slopes outward from its outer end and then turns abruptly toward the flange, forming a shoulder f' , which when the flange is turned upward to form the stakes constitutes the lower end of the latter. These separated ends of the flange are next bent upwardly, as shown in Fig. 9, to form the stakes, the flanged portion presenting a vertical flat bearing-surface for the wagon-body, while the web portion, sloping outward and downward from the upper end of the stake, serves as a brace and terminates at its lower end in the horizontal edge f' . The lower flange and the connected portion of the web left by this operation project beyond the ends of the bolster and serve as a support for the axle-skein, which support presents three longitudinal bearing-surfaces formed by the edge of the web and the two edges of the flange, sloping inward toward its outer end and constituting, in effect, a tapered skein-support well adapted to give an effectual bearing to the tapered cylindrical portion of the axle-skein.

The axle-skein D is made, preferably, in the form of a casting with a hollow tapering bearing-spindle d' and with the extension d , comprising a horizontal portion d^2 , adapted to embrace the horizontal flange of the axle-body, an upright portion d^3 , adapted to receive and bear on opposite sides of the web of the axle and bolster, and a vertical extension d^4 , adapted to bear against the opposite sides of the lower end f' of the stake, the arrangement being such that the casting when thus applied acts as a connecting or bracing

member and firmly holds the stakes rigidly in position with relation to the bolster. I prefer to cast this axle-skein onto the stakes, bolster, and projecting supporting ends of the axle, so that it will firmly attach itself to said parts and constitute a homogeneous and integral structure, and to facilitate the attachment of the casting I propose to form in the lower end of the stakes in its web and in the ends of the bolster and axle holes g g' , (shown in Fig. 9,) through which the molten metal will run in the process of casting and afford a firm connection.

Instead, however, of casting the skein directly into the parts, it may be formed separately, as shown in Fig. 5, and may be attached by rivets or bolts passing through holes d^5 in the upright portion of the same and through the holes g g' , &c., in the stakes and ends of the bolster and axle.

In both cases the stakes are firmly braced to the ends of the axle and maintained rigidly in an upright position by the skein, and I propose to form this bracing portion of the skein at its front with a wide flange H, extending from the outer edge of the upper extension d^4 downward and joining the body of the skein just inward of its bearing-spindle, which flange will serve to give firm and direct support to the stake and will prevent the same from being bent outward in the event of unusual pressure being applied laterally to its inner face.

From the construction described it will be seen that I produce a practically homogeneous structure comprising a bolster, axle-stakes, and axle-skein, which parts are firmly and integrally united in such manner as to preserve and maintain the proper relations and secure great rigidity and strength.

In Figs. 10 and 11 I have represented my invention embodied in a combined bolster and stakes as a separate structure from the axle. In this case the extensions a' on the ends of the blank for giving support to the wheel-spindles or axle-skeins are omitted, the blank being cut on the dotted lines shown in Fig. 6, so as to entirely separate the outer ends of the lower flanges and leave the upper flanges and a portion of the connecting-web, which are turned up to form the stakes, as in the first instance described.

The connecting or bracing member for holding the stakes firmly in an upright position for a structure of this form consists of a plate K of the form shown in Fig. 11, having in its opposite ends two right-angular notches k , which plate is adapted to fold on itself, so as to embrace the end of the bolster-web and the lower end of the stake-web, the edges of the notches bearing, respectively, at the outer sides of the stake-flange and at the inner sides of the bolster-flange. The plate applied in this manner is firmly bolted to the

parts by rivets $\frac{1}{2}$ " or bolts extending through the ends of the plate and the intermediate webs embraced between them.

Having thus described my invention, what I claim is—

1. A combined bolster and stakes consisting of a single bar of metal having its ends divided longitudinally and the upper separated portion bent upwardly to constitute the stakes, in combination with a bracing member firmly attached to the end of the lower portion of the bar and stake respectively.

2. A combined bolster and stakes consisting of a single bar of metal comprising a web or body provided with a longitudinal flange at its upper edge, the ends of said bar being divided longitudinally and the upper separated portion bent upwardly to form the stakes, in combination with a bracing member firmly attached to the lower portion of the web of the bolster and to the lower end of the web of the stake respectively.

3. A combined bolster and stakes consisting of a single bar of metal having a vertical web divided at its ends, and a right-angular longitudinal flange extending continuously along the web and turned upwardly with the adhering web to form the stake, in combination with a connecting member joining the divided ends of the web.

4. A combined axle, bolster and stakes consisting of a single bar of metal separated longitudinally at its ends with the upper separated portions bent upwardly to form the stakes and the lower remaining portion extending outward to form supports for the wheel-spindles, in combination with the axle-skein applied to said support and formed with an inward extension firmly attached to the end of the bar and to the upwardly-bent stake respectively.

5. A combined axle, bolster and stakes in the form of a single bar of metal having the upper portion of its ends turned upwardly to form the stakes and the lower portions of its ends extending outwardly, in combination with an axle-skein applied to the outwardly-extending end of the bar and provided with an extension connected firmly to the bar and to the lower end of the upwardly-bent stake.

6. A combined axle, bolster and stakes in the form of a single bar of metal having a vertical web and an upper longitudinal right-angular flange, with the web divided longitudinally and its ends turned upward to form stakes, in combination with an axle-skein formed with an upright portion embracing the end of the web of the body, and with a vertical extension embracing the lower end of the upwardly-turned web of the stake.

7. A combined axle, bolster and stakes in the form of a single bar of metal having a central vertical web and two longitudinal right-angular flanges along its edges, the ends of the web being divided longitudinally and the upper portion turned upwardly with the adhering flange to form the stakes, in combination with an axle-skein applied to the lower portion of the separated web and its longitudinal flange, and formed with a horizontal portion embracing the lower flange, and an upright portion embracing both the vertical web and the lower end of the stake.

In testimony whereof I hereunto set my hand, this 15th day of June, 1904, in the presence of two attesting witnesses.

EMIL EINFELDT.

Witnesses:

ANDREW NEILSON,
M. LOUISE DODGE.