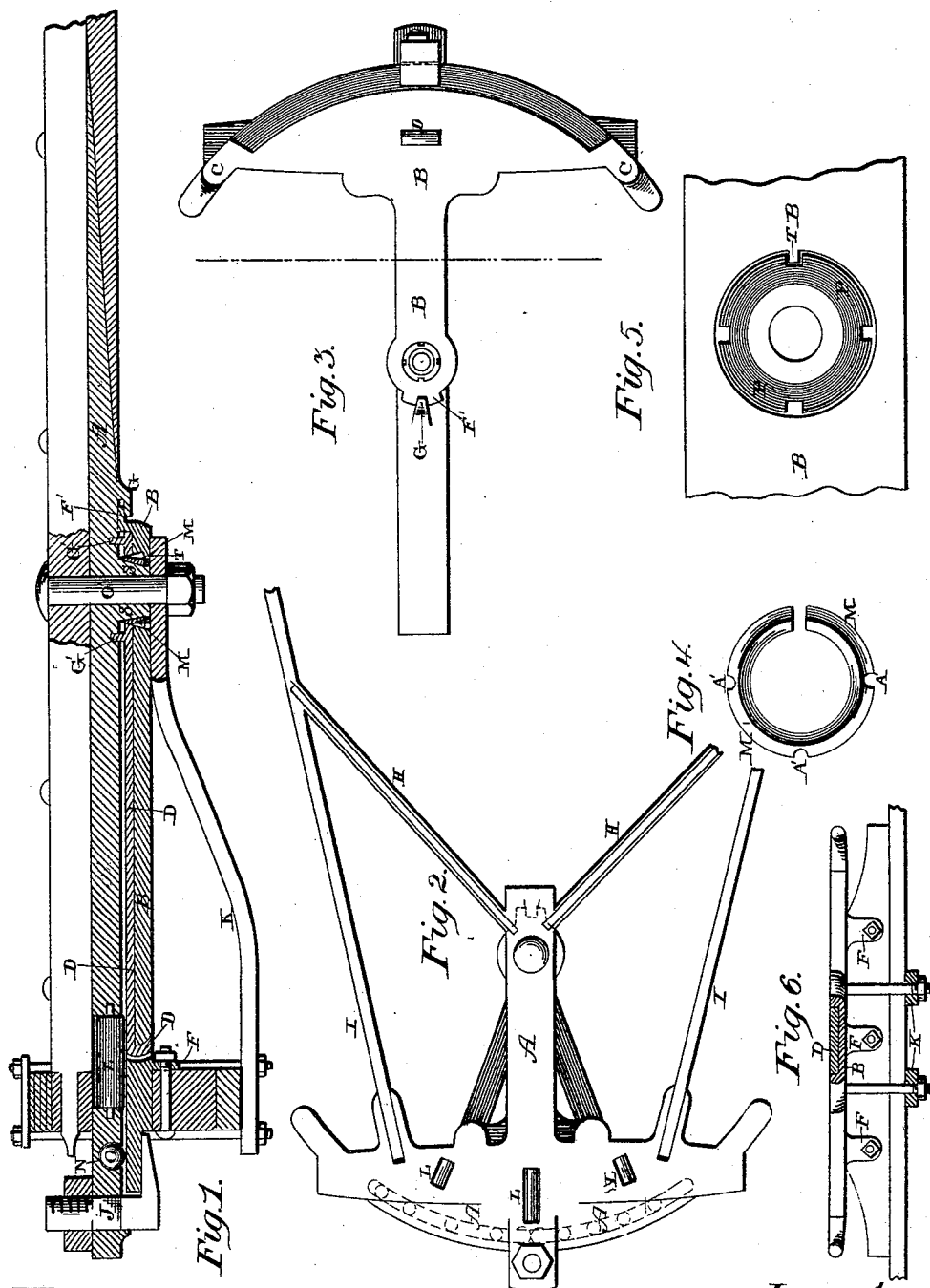


(No Model.)

J. W. ANDERSON & S. B. COX.
FIFTH WHEEL.

No. 460,495.

Patented Sept. 29, 1891.



Witnesses:

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FIFTH-WHEEL.

SPECIFICATION forming part of Letters Patent No. 460,495, dated September 29, 1891.

Application filed December 23, 1890. Serial No. 375,625. (No model.)

To all whom it may concern:

Be it known that we, JOHN W. ANDERSON and SAMUEL B. COX, of Lancaster, in the county of Lancaster and State of Pennsylvania, have invented certain new and useful Improvements in Fifth-Wheels; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

Our invention relates to an improvement in fifth-wheels; and it consists in the construction and arrangement of parts which will be fully described hereinafter, and particularly pointed out in the claims.

The objects of our invention are to provide a fifth-wheel for vehicles which consists of only two flat plates, which are connected eccentrically together, so as to enable the vehicle to be turned in a much smaller space; to strengthen the lower plate of the wheel, so that there is no danger of its breaking under a heavy strain, and to provide a fifth-wheel which is cheap, simple in construction, and which is not only stronger, but much more efficient than the old wheels now in use.

Figure 1 is a vertical section of a fifth-wheel which embodies our invention complete. Fig. 2 is a plan view of the fifth-wheel detached from the head-block and axle. Fig. 3 is an inverted view of the same. Fig. 4 is a detail view of the split packing-ring alone. Fig. 5 is a detached view of the lower plate and washer. Fig. 6 is a section taken on the dotted line *xx* of Fig. 3.

A represents the upper plate, and B the lower one, of the fifth-wheel. As will be seen, these two plates are thin, flat, and as light in construction as safety will permit, not only for the sake of lightness and cheapness, but to give to the vehicle a much lighter appearance than is given by any of the heavy fifth-wheels now in use. The lower plate B will be preferably of the shape shown, the points or extensions C being made to extend backward any desired distance, according to the construction of the vehicle to which this fifth-wheel is to be applied. If desired, these extensions C may be continued around so as to

form a perfect circle, but this will only be necessary in vehicles of heavier make. In order to prevent this plate being broken or torn apart by a heavy strain, we place in the mold before the plate B is cast a plate D, of tougher metal than the plate is formed of, such as wrought iron or steel. The rear end of this plate D extends back of the point where the king-bolt passes through, and its front end is turned downward in the form of a hook, so as to catch over the metal out of which the plate B is formed. When the metal which is to form the plate B is poured into the mold, it flows over the plate D, and the two metals become incorporated as if formed in a single piece. This plate D extends along the shank or rear extension of the plate B forward any desired distance and renders it impossible to break the plate B by any ordinary strain that can be applied to it. The front end of this plate B is secured upon the top of the axle-bed E by clamps or bolts in the usual manner, and in order to secure the plate and the axle-bed more rigidly and firmly together the plate is provided with hangers, drops, or flanges F, which catch against the top of the rear side of the axle-bed, as shown, and through which clamping-bolts may be passed. These hangers enable the lower plate to be made much lighter than would otherwise be possible and that without sacrificing anything in strength. Upon the rear end of this lower plate B is formed a flange F', which catches in a corresponding guide G, formed upon the under side of the upper plate A, and which guide and flange serve to hold the two plates tightly in connection with each other. In order to strengthen the lower plate, there is formed upon its top surface the two curved flanges G', one upon each side of the king-bolt, and which flanges catch in corresponding grooves in the upper plate A, and these flanges serve to take all the strain from the king-bolt.

The upper plate A projects at its front end beyond the front edge of the lower plate B, and through this extended end of the plate A is passed a hook, guide, or keeper J, which catches under the front edge of the lower plate B and holds the two plates tightly in position. This hook or guide J has its upper

end made screw-threaded and is passed up through the top plate A, so that it cannot turn or twist, and receives a nut upon its upper end, and this hook may be adjusted from time to time as any wear between the plates takes place. This hook prevents all rattling and holds the two plates in such close contact that nothing is likely to work in between them. The front end of the upper plate A is secured to the head-block and spring in the usual manner.

In order to decrease the friction between the upper and lower plates, there are journaled in the upper plate a suitable number of rollers L, which are placed in any desired relation to each other, and which rollers have their upper surfaces to project just sufficiently beyond the lower edge of the upper plate to rest upon the top of the lower one and thus cause the two plates to move back and forth over each other with as little friction as possible; also, formed near the outer edge of the upper plate is a round core N, in which a suitable number of balls or rollers O are placed, the lower edges of the balls or rollers being made to project just sufficiently to bear upon the upper surface of the lower plate. Either rollers and balls may be used, as here shown, or either one alone. The shank or rear extension of the upper plate A extends a suitable distance back of the king-bolt, and if but a single perch is used this plate is secured rigidly to the under side of the perch and the head-block in the usual manner, the rear end of the extension being tapered, as shown, so that the perch-plate will overlap it without making any additional increase in thickness. If two perches are used, two braces or extensions H will be attached to the rear end of the extension, and these braces will be bolted or welded rigidly at their rear ends to the perch-plates. These braces serve to strengthen the upper plate, so as to enable it to stand any strain that may be brought to bear upon it. The bolt O' passes through the extensions upon the upper and lower plates, and the upper plate has the king-bolt sleeve or tubular portion S, which projects downward from its under side and fits in a socket in the lower plate B, which is made to receive it. Around this sleeve or tubular portion S, which tapers slightly toward its lower end is placed a wedge-shaped split packing-ring M, having a small segment cut therefrom, as shown. This packing-ring is of somewhat less depth than the tapering space it occupies, so as to permit one or more washers P to be inserted beneath it and allow for the reception in that space of a short cylindrical projection T on the inner face of the lower plate B. The wear of the tubular portion S can be readily taken up and the jar or noise occasioned by such wear prevented. This device also prevents the two plates from wearing out of true with each other and the lower plate from moving forward to such an

extent that the action of the hook or keeper at its front end will be interfered with. There may be any desired number of recesses A' in the tapering packing-ring M and the washer, so as to allow the ring and washer to be turned and fastened in any desired positions. Upon the lower end of the bolt, which passes down also through the stay plate or brace K, is placed a clamping-nut, as shown. This stay plate or brace will be provided with two prongs and will be bent downward, so as to catch underneath the axle.

If desired, wrought plates may also be inserted in or applied to the tops of the reaches I, so as to increase their strength and prevent any possibility of their breaking in the same manner as in the lower plate B. It is immaterial how these plates are applied, as their object is to increase the strength of the reaches. They may be also applied to the braces H, either by casting or by securing them to their surfaces, as may be preferred, the rear ends of the plates being made to extend flush with the perch-plates. These plates will be arranged so as to be flush with the top surface of the braces where they cross the perches so as to be just flush with the bottom surface of the perch. A similar plate may be inserted in the shank or extension of the top plate and made to extend any suitable distance back of the king-bolt. If extended to the end of the extension, so as to cause the extension to be of full thickness instead of being tapered, the rear end of the extension may be welded directly to the front end of the perch-plate instead of the two being made to overlap, as above described.

Having thus described our invention, we claim—

1. In a fifth-wheel, the upper plate, a lower plate having a strengthening-plate applied thereto, which is provided with a hook at its front end to catch in the said lower plate, the lower plate having its rear end extending upward beyond the end of the strengthening-plate, and a guide upon the upper plate, in which the said extending end of the lower plate catches, the parts combined substantially as shown and described.

2. The combination of the top plate provided with a tubular portion S, the lower plate provided with an opening into which the tubular portion fits, the wedge-shaped split packing-ring placed around the tubular portion, a washer constructed to fit against the same, the stay plate or brace, and the king-bolt, substantially as set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

JOHN W. ANDERSON.
SAMUEL B. COX.

Witnesses:

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G. R. WEAVER.