

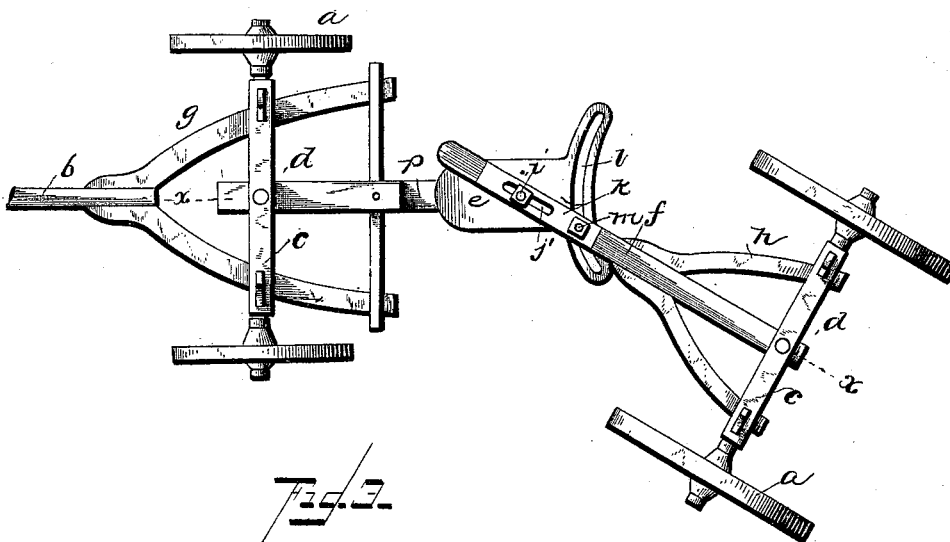
(No Model.)

B. F. FLESHMAN.  
RUNNING GEAR FOR VEHICLES.

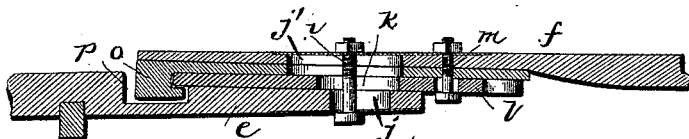
No. 420,872.

Patented Feb. 4, 1890.

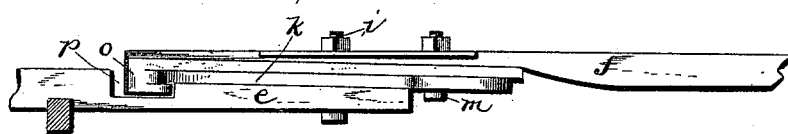
*Fig. 1.*



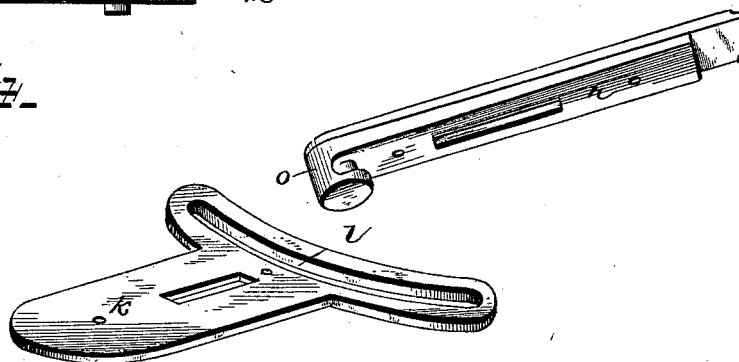
*Fig. 2.*



*Fig. 2.*



*Fig. 4.*



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# UNITED STATES PATENT OFFICE.

BENJAMIN F. FLESHMAN, OF ALVON, WEST VIRGINIA.

## RUNNING-GEAR FOR VEHICLES.

SPECIFICATION forming part of Letters Patent No. 420,872, dated February 4, 1890.

Application filed October 15, 1889. Serial No. 327,133. (No model.)

*To all whom it may concern:*

Be it known that I, BENJAMIN F. FLESHMAN, of Alvon, in the county of Greenbrier and State of West Virginia, have invented certain new and useful Improvements in Running-Gears; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification.

My invention relates to certain improvements in running-gear for carriages and wagons.

The object of the invention is to provide an improved flexible reach or coupling-pole whereby the front and rear axles are secured together and can move independently of each other, and the wagon can thereby be turned around in a comparatively small space without the least danger of overturning and with outward lateral thrust or strain on the wheels. These objects are accomplished by and my invention consists in certain novel features of construction and in combinations of parts more fully described hereinafter, and particularly pointed out in the claims.

Referring to the accompanying drawings, Figure 1 illustrates a top plan of the running-gear with the wagon-body removed. Fig. 2 is a side or edge view of the reach. Fig. 3 is a longitudinal section on the line  $x$   $x$ , Fig. 1. Fig. 4 illustrates detail perspectives of the bearing-plate and guide-yoke on one section of the reach and the corresponding bearing-plate on the other section of the reach.

In the drawings, the reference-letter  $a$  indicates the wheels of a vehicle, and  $b$  the tongue therefor. The centrally-pivoted bolsters  $c$  are mounted on the front and rear axles  $d$ . The reach connecting the front and rear axle is formed in two overlapping sections  $e$   $f$ , the section  $e$  being secured to the front axle and front hounds  $g$ , and the rear section  $f$  at its front free end extending a distance along the top of the end of section  $e$  and at its rear end secured to the rear axle and rear hounds  $h$ . The two sections of the

reach are pivoted together by a vertical bolt or pivot  $i$ , passing through the same a distance from the end of each section, and preferably provided with a head on one end and a nut on the other. This pivot-bolt passes through and is adapted to slide in a longitudinal slot  $j$  in the lower or front section of the reach, and also extends through and slides in a longer slot  $j'$  in the upper or rear end section, as shown. Upon its upper side the lower reach-section is provided with a smooth flat bearing-plate  $k$ , extending beyond the edges of the reach and having a transverse slot for the pivot-bolt registering with slot  $j$ . A horizontal inclosed segmental yoke  $l$  is formed integral with this bearing-plate  $k$ , and is located at the rear end of the same with its ends curving rearwardly and extending laterally a suitable distance. A projection or pin  $m$  is rigidly secured to the rear reach-section a suitable distance to the rear of the pivot-bolt, and extends down loosely through said yoke and is provided with a head below the same. The rear reach-section on its lower side is provided with the smooth-faced bearing-plate  $n$ , bearing and working on plate  $k$  and provided with an elongated longitudinal slot registering with slot  $j'$  at its front end. This plate is provided with a heavy downwardly-extending lug or extension  $o$ , formed integral with the plate and working back and forth and normally resting in a transverse groove  $p$  in the upper face of the forward reach-section at the front end of plate  $k$ , and the front edge of said plate  $k$  is rounded and projects slightly over the groove, and the lug bears throughout its swing against the same and has a lip projecting under the plate. The top side of the rear reach-section and bottom side of the front reach-section are provided with wear and strengthening plates, as shown.

The operation of this coupling is obvious. When the front axle is turned laterally, the body retains its position by reason of the pivoted bolsters, and the reach-sections swing on the pivot-bolt and the yoke  $l$  swings laterally with the projection  $m$  of the opposite reach-section moving and guided therein, thereby guiding the rear reach-section in its movement and allowing the pivot-bolt to gradually

move to the front ends of the slots  $j j'$ , and thereby lengthening the reach, when the same is bent so that the bolster and body will not be cramped and tilted. There is no strain or pull on the pivot-bolt, as all the pulling strain is sustained by the lug  $o$ , which bears against the front edge of the plate  $k$ , whatever the position of the reach. The inwardly-extending lip prevents the lug swinging up from engagement with the plate  $k$ . The yoke limits the swing of the reach-sections and acts as a stop and guide. The rounded edge of the plate  $k$  and the curve of the yoke throws the parts into their normal position when the reach is straightened.

What I claim is—

1. In a running-gear, the combination of the two sections of the reach, a bearing-plate on one of said sections having the horizontal stop and guide-yoke curving rearwardly at its ends, a corresponding bearing-plate on the other section having a lug bearing against the front edge of said first-mentioned plate, a projection on said last-mentioned section confined in said yoke, and a pivot-pin extending through longitudinal slots in said reach-sections, substantially as described.

2. In a running-gear, the two reach-sections overlapping at their inner ends and pivoted together to allow lateral swing and a limited longitudinal movement, in combination with a bearing-plate on one of said ends having a projecting rounded end and a corresponding plate on the other end having a lug bearing against said rounded projecting end and always located in the line of draft on the reach, for the purpose set forth.

3. In a running-gear, the combination of the two overlapping reach-sections, with bearing-plates located on said overlapping ends, one of said plates having a guide and stop yoke on one end and the other plate having a lug bearing on the opposite end of said yoke-plate and receiving the pulling strain on the reach, substantially as described.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

BENJAMIN F. FLESHMAN.

Witnesses:

H. A. McDERMOTT,  
WM. C. McDERMOTT.