

C. P. PETERSON.

BELT CARRIER.

No. 301,517.

Patented July 8, 1884.

FIG. 1.

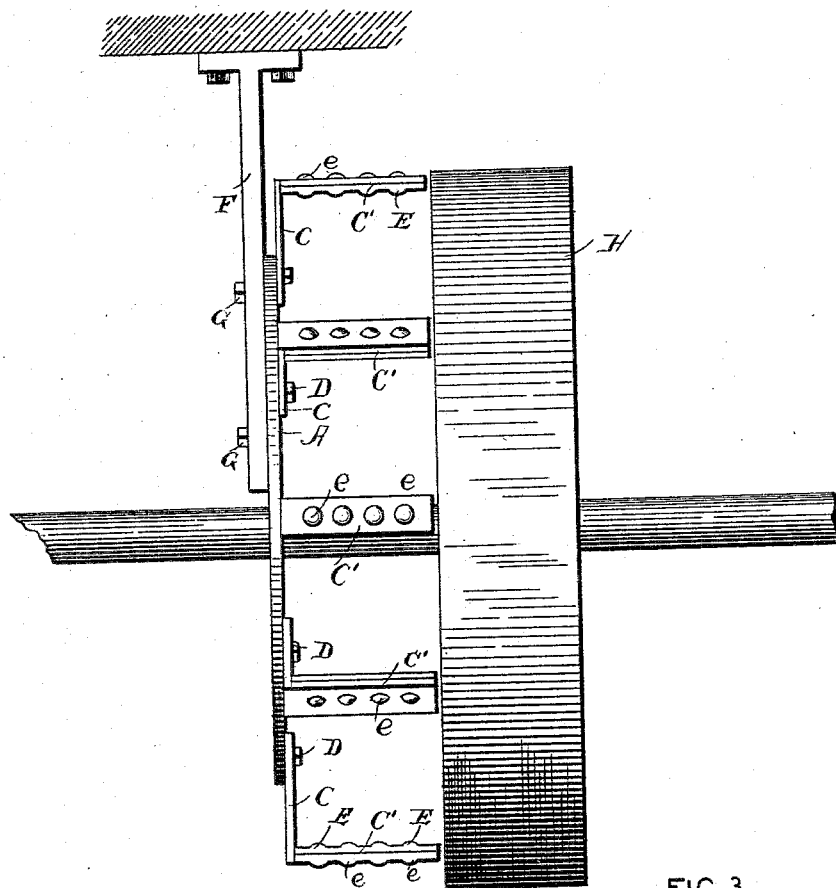
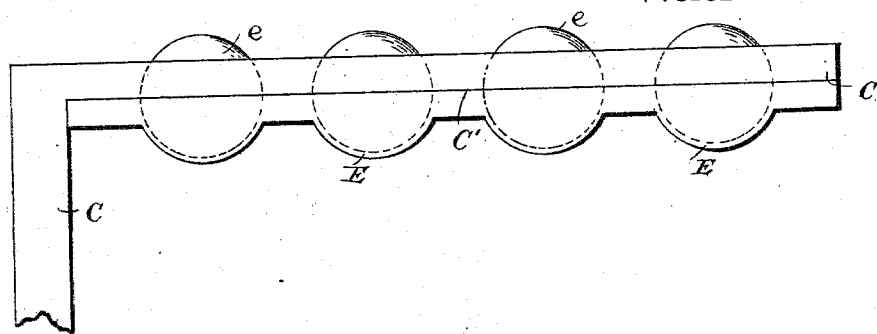


FIG. 3.



WITNESSES

Wm. D. Gill.
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INVENTOR

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FIG. 2.

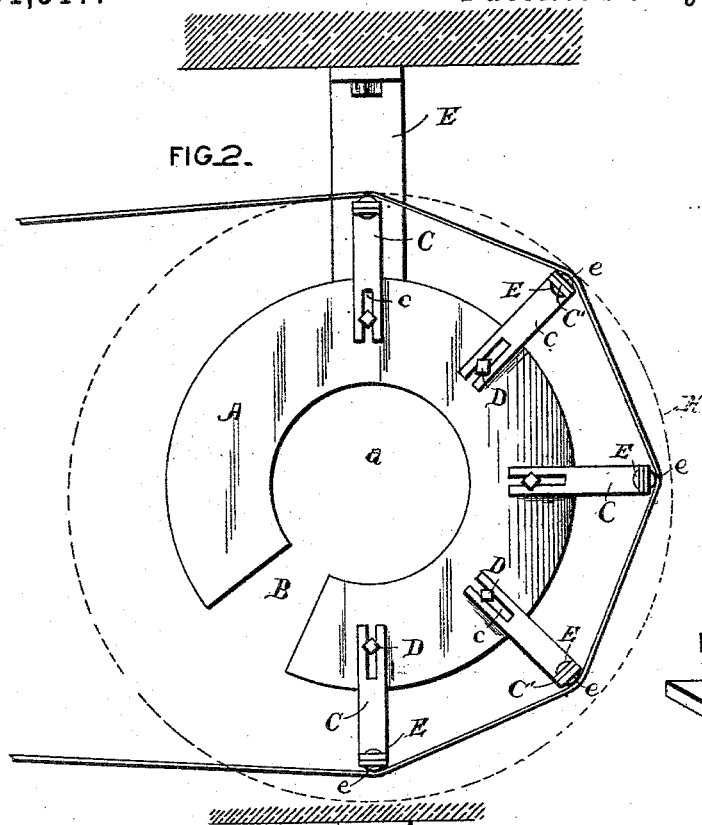


FIG. 5.

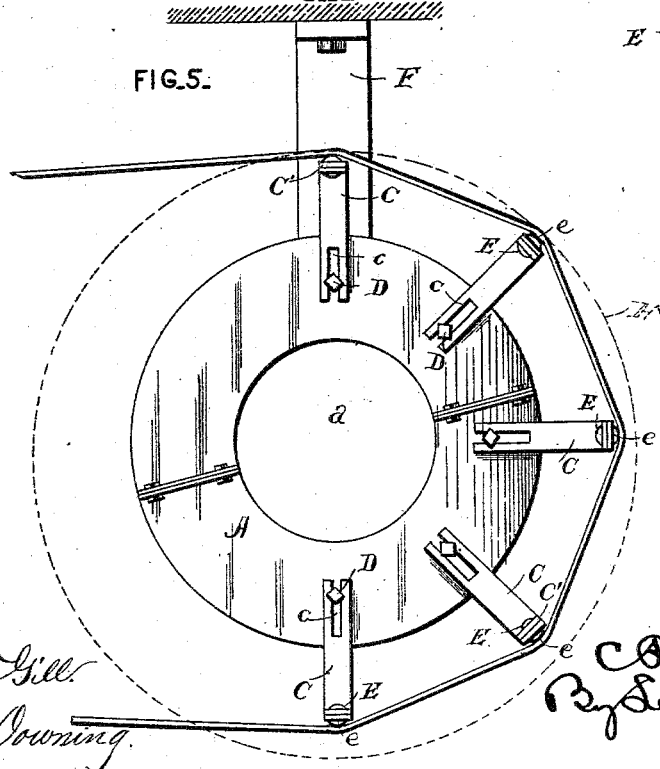
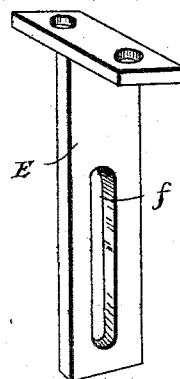


FIG. 4.



WITNESSES

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(No Model.)

3 Sheets—Sheet 3.

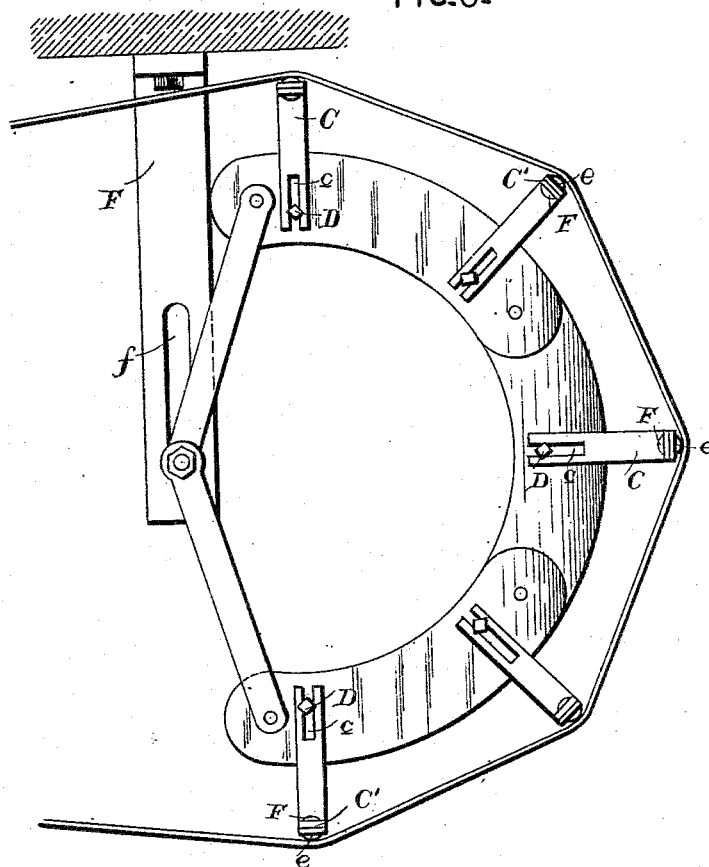
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FIG. 6.



WITNESSES
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'UNITED STATES PATENT OFFICE.

CHARLES P. PETERSON, OF RICHMOND, INDIANA.

BELT-CARRIER.

SPECIFICATION forming part of Letters Patent No. 301,517, dated July 8, 1884.

Application filed May 7, 1884. (No model.)

To all whom it may concern:

Be it known that I, CHARLES P. PETERSON, of Richmond, in the county of Wayne and State of Indiana, have invented certain new and useful Improvements in Belt-Carriers; and I 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 appertains to make and use the same.

My invention relates to an improvement in belt-carriers.

Hitherto it has been customary to shift the belt, when not in use, onto a loose pulley. This loose pulley has usually been mounted on the driven shaft, and the belt allowed to run when out of use the same as when in use. The wear on the belt and loose pulley and the noise of the loose pulley when running have been found objectionable. Attempts have been made to overcome these objections by a dead-pulley or belt-carrier on the driving-shaft; but these have also been found to be objectionable on account of the transverse pressure necessary to shift the belt, or the sliding friction between the belt and carrier while the belt is losing its momentum, and also on account of the constant strain upon the belt when not in use.

The object of my present invention is to provide a belt-carrier which shall effectually meet these objections, which may be readily and quickly applied to a shaft, and is simple, durable, and inexpensive.

With these ends in view my invention consists in a series of ball-bearings adapted to receive a belt from a driving-pulley.

My invention further consists in a disk and arms connected therewith adapted to support a series of ball-bearings in a suitable position to receive the belt from a driving-pulley.

My invention further consists in a hanger adapted to support a disk in different vertical adjustments, said disk having ball-bearings for a belt attached thereto.

My invention further consists in certain features of construction and combinations of parts, as will be described hereinafter, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a face view of the belt-carrier in position by a

driving-pulley. Fig. 2 is a side view showing the rim of the driving-pulley in dotted lines. Fig. 3 is a detached view of an arm with balls in position. Fig. 4 is a detached view of the hanger, and Figs. 5 and 6 are modifications.

A represents a disk or sector provided with a central perforation, *a*, larger in diameter than the driving-shaft upon which it is intended to be placed. I find it convenient to provide the disk or sector with an open slot, B, sufficiently wide to admit the driving-shaft, thereby enabling the disk to be readily placed on or taken off the shaft without uncoupling; but the disk may be constructed without the opening B, and slipped on the end of the shaft, if considered advisable. The disk A is provided with a series of radial arms, C, at suitable distances apart about its circumference. The arms C may be formed integral with the disk, or secured thereto with or without radial adjustment. A convenient means of securing them is to provide the ends of the arms with elongated slots *c* and clamp the arms to the disk by means of bolts or set-screws D. The arms C are provided with an outer section, C', which extends laterally at right angles to the lower section, and is provided with a series of spherical segmental sockets, E, in which the balls *e* are secured and allowed a free rotary motion. The balls *e* project above the outer face of the section C' one-third of their diameter, more or less. The disk with its arms is suspended or held in the proper position by means of a hanger, F, which is provided with an elongated slot, *f*, through which set-screws G, bolts, or other fastenings pass into or through the disk, thus clamping the same in the desired vertical adjustment. The hanger F may be in contact with the disk on either side.

My experience has thus far proved the above-described means of securing the disk to be the most convenient; but it is evident that other devices—such as posts from the floor or side brackets, for example—might be used for this purpose. The carrier, when in use, is placed with the ends of its laterally-extending arm-sections in close proximity to the rim of the driving-pulley, the outer surfaces of the balls in one, two, or three of the lateral sections being flush with the face of the driving-pulley

H, as shown in Figs. 1 and 2, at the point where it receives the belt, the remaining laterally-extending arm-sections being somewhat below or within the circumference of the driving-pulley. The belt is shifted from the driving-pulley to the carrier and from the carrier to the driving-pulley by any approved form of belt-shifter in present use.

It will be observed that the lateral motion of the belt when resting on the balls will be relieved from friction by the rolling of the balls, while the longitudinal motion of the belt while it is being brought to a stop will also be relieved from sliding friction by the rotation of the balls.

It will be further observed that when the belt is on the carrier it will be considerably loosened by occupying the position of chords drawn between the several series of balls, and also by the drawing in of one or more of the arms above mentioned. The bearing-arms need only occupy a semi-circumference, and the disk to which they are attached may be a sector greater or less than a semicircle, as found desirable. The disk may also be formed in two or more sections and rigidly or adjustably secured together, one form of the latter construction being shown in Fig. 5, another in Fig. 6. With this latter construction the carrier may be adjusted so as to accommodate itself to different-sized pulleys.

It is evident that slight changes may be made in the construction and arrangements of the different parts described without departing from the spirit and scope of my invention; hence I do not wish to limit myself strictly to the construction herein set forth; but,

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a belt-holder, a series of movable spherical bearings supported in close proximity to the belt-pulley, and adapted to support the belt as the latter is shifted from the pulley.

2. In a belt-carrier, the combination, with a series of arms supported in close proximity to the rim of a pulley, of balls secured in sockets in said arms, and adapted to receive a belt from the pulley, substantially as set forth.

3. In a belt-carrier, the combination, with a disk provided with laterally-extending arms, of bearings secured in the arms, said bearings being susceptible of both lateral and forward rotary motion, substantially as set forth.

4. In a belt-carrier, the combination, with a disk provided with arms having radial adjustment, of ball-bearings secured in the arms, and adapted to receive a belt from a revolving pulley, substantially as set forth.

5. In a belt-carrier, the combination, with a disk provided with an opening to admit a shaft to a central perforation, of arms secured to the disk in radial adjustment, and ball-bearings secured in the arms for receiving a belt from a revolving pulley, substantially as set forth.

6. In a belt-carrier, the combination, with a disk supported in vertical adjustment about a shaft, and provided with laterally-extending arms, of series of balls loosely secured in the arms, and adapted to receive the belt from a driving-pulley, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

CHARLES P. PETERSON.

Witnesses:

H. E. MOON,

O. B. RORALETT.