

C. F. SEARCH.
TREAD POWER.

No. 500,220.

Patented June 27, 1893.

Fig. 1.

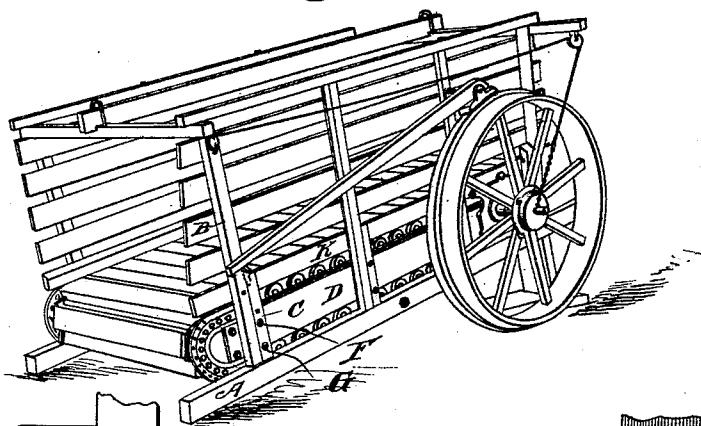


Fig. 2.

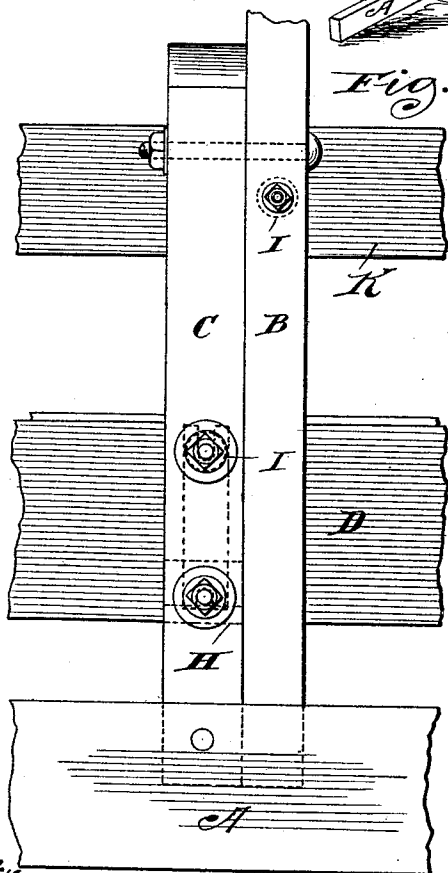
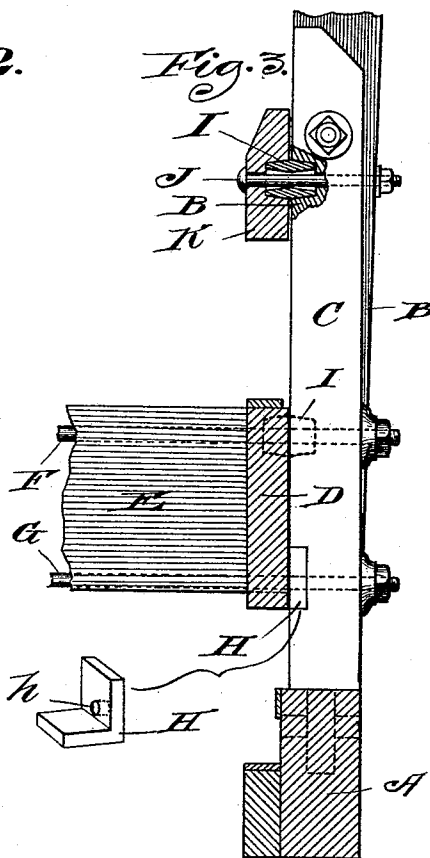


Fig. 3.



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By *Offield, Fowler & Smith*
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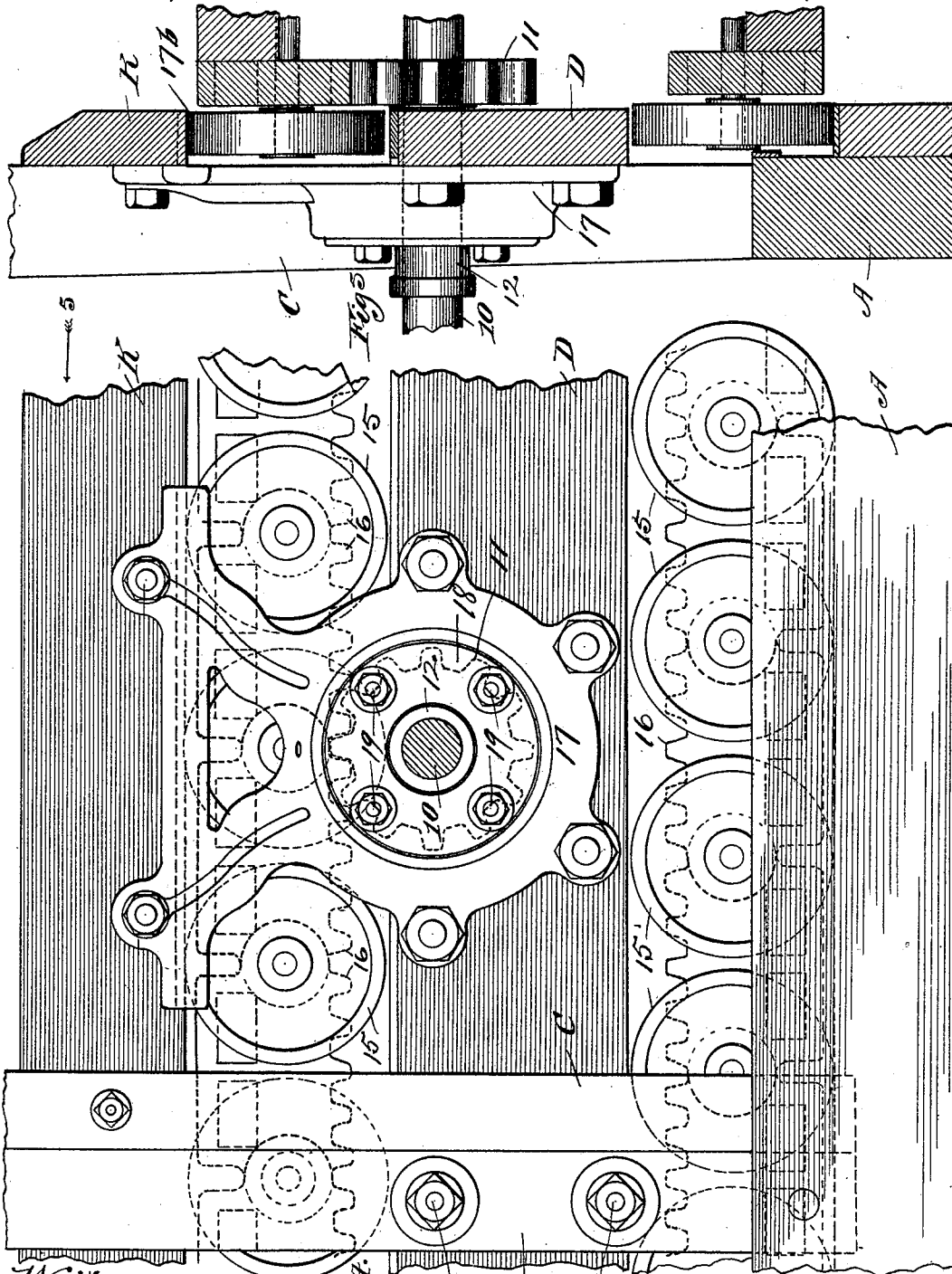
(No Model.)

3 Sheets—Sheet 2.

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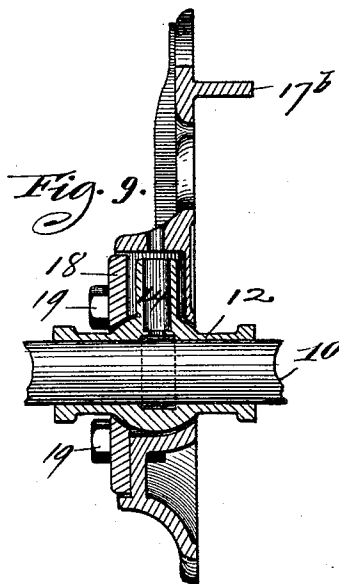
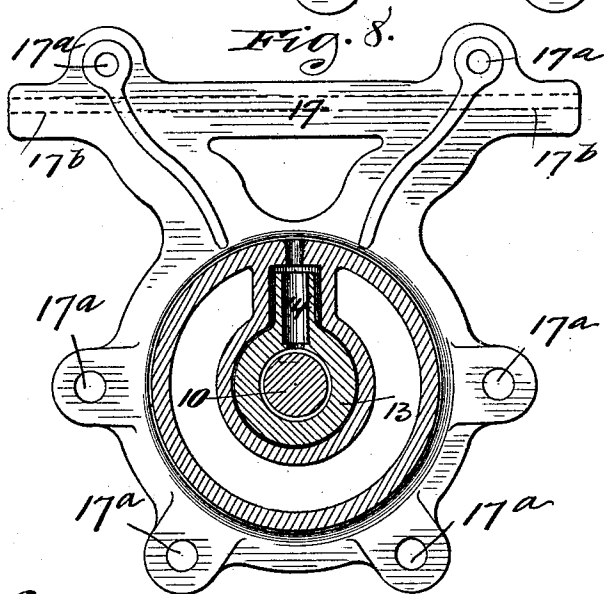
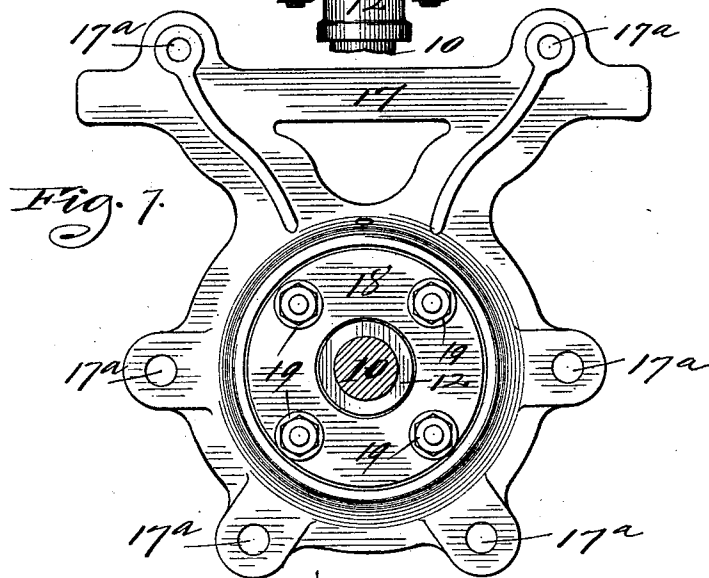
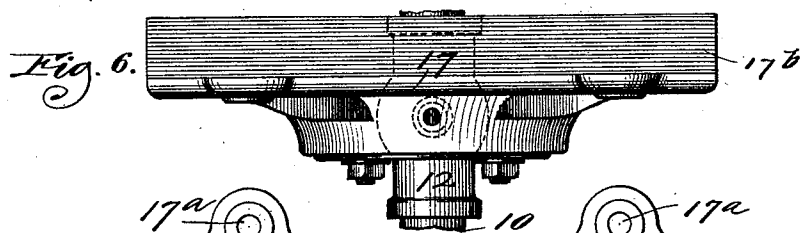
Fig. 1.

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UNITED STATES PATENT OFFICE.

CASPER F. SEARCH, OF APPLETON, WISCONSIN, ASSIGNOR TO THE APPLETON MANUFACTURING COMPANY, OF SAME PLACE.

TREAD-POWER.

SPECIFICATION forming part of Letters Patent No. 500,220, dated June 27, 1893.

Application filed February 6, 1892. Serial No. 420,587. (No model.)

To all whom it may concern:

Be it known that I, CASPER F. SEARCH, of Appleton, Wisconsin, have invented certain new and useful Improvements in Tread-Powers, of which the following is a specification.

My invention relates to certain improvements in the construction of horse tread powers, and particularly to certain improvements in the construction of the frame so that there will be no sagging of the bed or separation of the parts.

A further object of my invention is to provide an improved bearing for the main shaft for horse tread powers whereby the main shaft is prevented from binding, and the hanger for this bearing is so constructed as to furnish a track or bearing for the travelers of the apron.

In the accompanying drawings, Figure 1 is a perspective view of the tread power with my invention applied thereto. Fig. 2 is an enlarged detail showing the posts, the side sill of the bed and the ground sill broken away. Fig. 3 is a view at right angles to the view point of Fig. 2, and showing also in perspective a detail view of a metal tenon. Fig. 4 is an enlarged detail showing an elevation of the hanger and bearing, part of the frame work, the apron and travelers. Fig. 5 is a view looking in the direction of the arrow of the parts shown in Fig. 4. Figs. 6 to 9 inclusive are detail views of the bearing and hanger.

In the drawings, A indicates the ground sill of the tread power frame; B one of the upright posts thereof; C a stub post bolted to the post B; D a side sill, and E a transverse sill which is channeled on its edges to receive the through-bolts F, G which pass through the side sill of the bed and the stub post of the frame.

H represents a metal tenon of L-shaped form having a bolt aperture *h* through which the through-bolt G passes. The post C is mortised on its inner edge to receive the upright member of the L-shaped tenon and the horizontal member thereof supports the side sill D, the latter being preferably mortised on its lower edge to receive the tenon, whereby the bed is prevented from endwise movement with reference to the posts. The through bolt G

supports the transverse sill E, and by tightening the nuts of these bolts the several parts of the frame are rigidly clamped together. The metal tenon, therefore, not only serves the purpose of furnishing a vertical support for the side sill, but it serves to prevent endwise movement of the bed with reference to the posts and furnishes a much stronger and secure construction than has heretofore been attained. By its use also all danger of splitting the posts or side sill is avoided.

In order to secure a tight and reliable joint between the upright posts and the side sills, I further provide as clearly shown in Fig. 3 a metal thimble I, which is apertured for the passage of the bolts F, J and is fitted into sockets in the posts C and side timbers D and K.

It is well known that any lateral strain tending to separate the parts of two timbers which are bolted together soon wears upon the wood so that a tight and secure joint is impossible. To obviate this I employ the metal thimble or bushing before described. Now when the timbers shrink they can be drawn tightly together by means of the nuts on the bolts and the metal thimble or washer is forced tightly into the wood, the timbers being drawn up thereon to compensate for such shrinkage. All danger of splitting the parts is avoided by the use of this metal thimble.

It is well known that in the operation of horse tread powers, the frames of which are made of wood, slight shrinkage of the timbers or sagging of the frame will tend to throw the main shaft out of line, causing it to bind. To obviate this objection, I employ a rocking or ball bearing for the main shaft and hang said bearing within a case of peculiar construction, said case having a flange which serves as a track or upper bearing for the travelers of the apron.

In the drawings, 10 represents the shaft which passes through a sleeve 12 having a globular, central portion 13 with an oil duct 14 in its upper part. This sleeve may be formed integrally or divided longitudinally if desired. Its rounded portion is fitted into a cup or socket formed within a case 17 having screw or bolt apertures 17^a whereby it is secured in a vertical position to the frame of

the tread power. I employ the annular clamping ring 18 which fits within the flange surrounding the opening of the hanger case 17 and which is secured thereto by the bolts 19.

- 5 The case 17 is provided with an offset angular flange 17^b which forms a track or upper support for the travelers 15 of the apron. The shaft 10 has the gear 11 thereon which gear enmeshes with the rack sections 16 of the
10 apron. It will be observed that the travelers bear upon the flange 17^b of the case 17 in which the shaft bearing is supported. The rack teeth, therefore, are held firmly in mesh with the pinion on the power shaft, and thus
15 the certain engagement of the gears is insured. This feature is of great importance in the practical operation of horse tread powers, because should the cogs slip or ride upon each other the apron is likely to run away
20 and injure the animal. This hanger case with its ball bearing therefore serves not only the purpose of securing the shaft in proper

alignment, notwithstanding any shrinking or sagging of the frame timbers, but it also insures the proper engagement of the gear as 25 before described.

I claim—

1. In a horse tread power frame, the combination, with the upright posts and the side timbers, of a metal thimble mortised into said 30 posts and timbers, respectively, and apertured for the passage of the through-bolts, substantially as described.

2. In a horse tread power, the combination, with the driving shaft thereof, of a rocking 35 or ball bearing for said shaft, a case wherein said bearing is suspended, said case having an integral flange to form an upper support or track for the apron travelers, substantially as described.

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Witnesses:

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