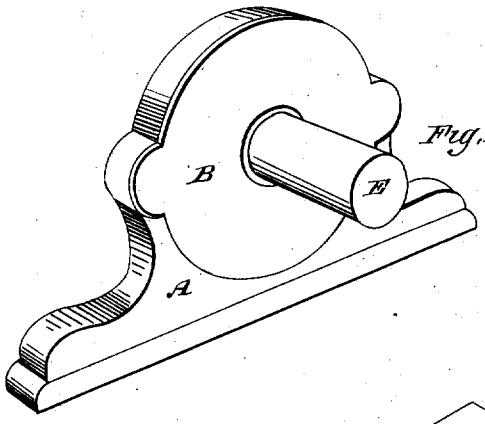
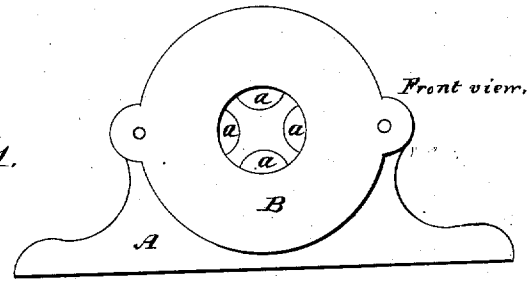
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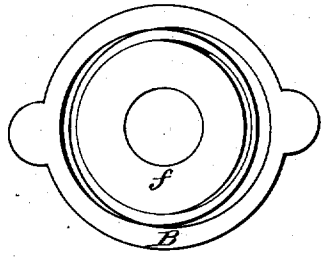
B. Hinkley,

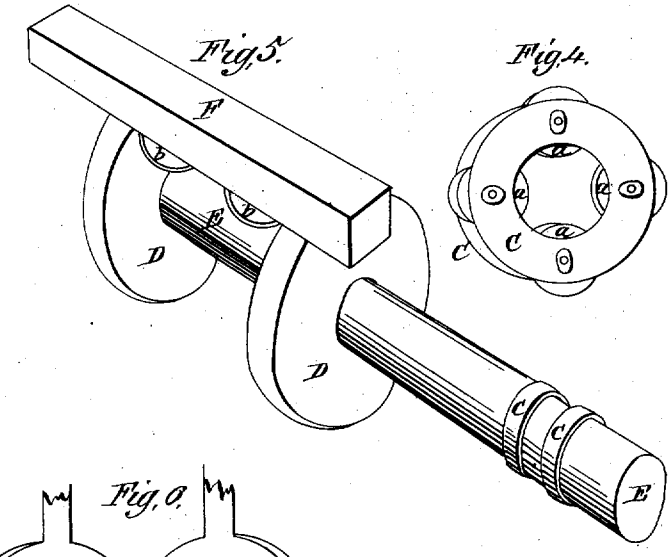
Anti-Friction Roller.

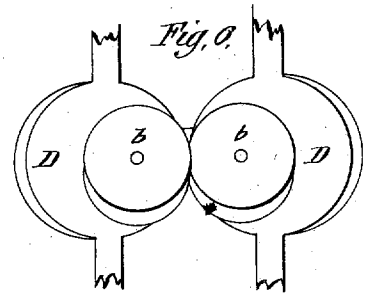
Patented Apr. 14, 1835.











THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON.

0765X April 14. 1835

To Benjamin Kimbley of Fayette Maine

Letters Patent.

The Schedule referred to in these Letters Patent and making part of the same containing a description in the words of the said Benjamin Kimbley himself of his improvement in the mode of diminishing friction on the bearings of shafts axeltrees & other machinery.

To all to whom these presents shall come. Be it known that I Benjamin Kimbley of Fayette in the County of Kennebec and State of Maine. Machinist. have invented a new and useful improvement in the mode of diminishing friction on the bearings of axeltree shafts gudgeons and other machinery and that the following is a full and exact description of the construction and operation of the said machinery as invented and improved by me. Fig 1 and of the hereto annexed drawings which constitute a part of this description represents a front view of the Box and rollers without the shaft being inserted. A represents the outside of the box. B represents the outside of the plate making a part of the Box. dddd. represents four small anti friction rollers running in the box. Fig 1. represents the whole of the box with the shaft inserted. B the plate. A. the outside of the Box. Fig 3. represents the inside of the plate B. of Fig 3 the rim of the plate and f the part of the surface within the projection forming the groove in the box Fig 4 represents the bands and rollers as they are when in the box. C.C. are the bands intended to keep the rollers in their places formed with oblong holes in which the pivot of the rollers play. aaaa. represent the rollers. These four last described figures of the drawings constitute what I call the anti friction box and may be formed of cast iron or any other suitable metal. Fig 5. represents the shaft or axeltree with two centre wheels and two anti friction Rollers playing between the wheels. E represents the shaft. D.D. the centre wheels upon the shaft. F a small section of the frame work of a carriage. or other frame work. b.b. are two anti friction rollers playing between the two centre wheels in such a manner as to prevent side friction of the rollers inside of the box. E represents the end of the shaft which comes through the hub of the wheel when used on Carriages. C.C. show the projection each side of the groove in the shaft in which the rollers in the Box are intended to run and this groove will be the bearing of the shaft. Fig 6. represents a view of the

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two centre wheels as described with the antifriction rollers between them. The two centre wheels with the antifriction rollers are intended to take off the side friction. and the box rollers are intended to take off the friction of the bearings. These can be applied to carriages, Mills, Steamboats or in any other machinery where a shaft is used. I do not pretend to do away with all friction upon a shaft. but the arrangement of the rollers taking the bearing on the outer edges of the rollers will materially diminish the friction. Having described my said improvement, and the manner in which it is intended to operate. I do hereby declare that what I claim as new and for which I ask the exclusive use consists in the mode herein before described of applying antifriction rollers between the cylinder shaft or other parts of machinery and the Box herein before described. the attaching this Box to a carriage body or frame work. the groove in this shaft or axeltree and in this box to keep the rollers and the shaft in their respective places so as to prevent their interference with each other motion The two centre wheels upon the shaft with the antifriction rollers between them as herein before described to diminish side friction and the arrangement of the several parts of the machinery as herein before described

Witness Benjn Hinkley
Jno Clee
Wm M. Vaughan

(Drawing.) (750 words)