

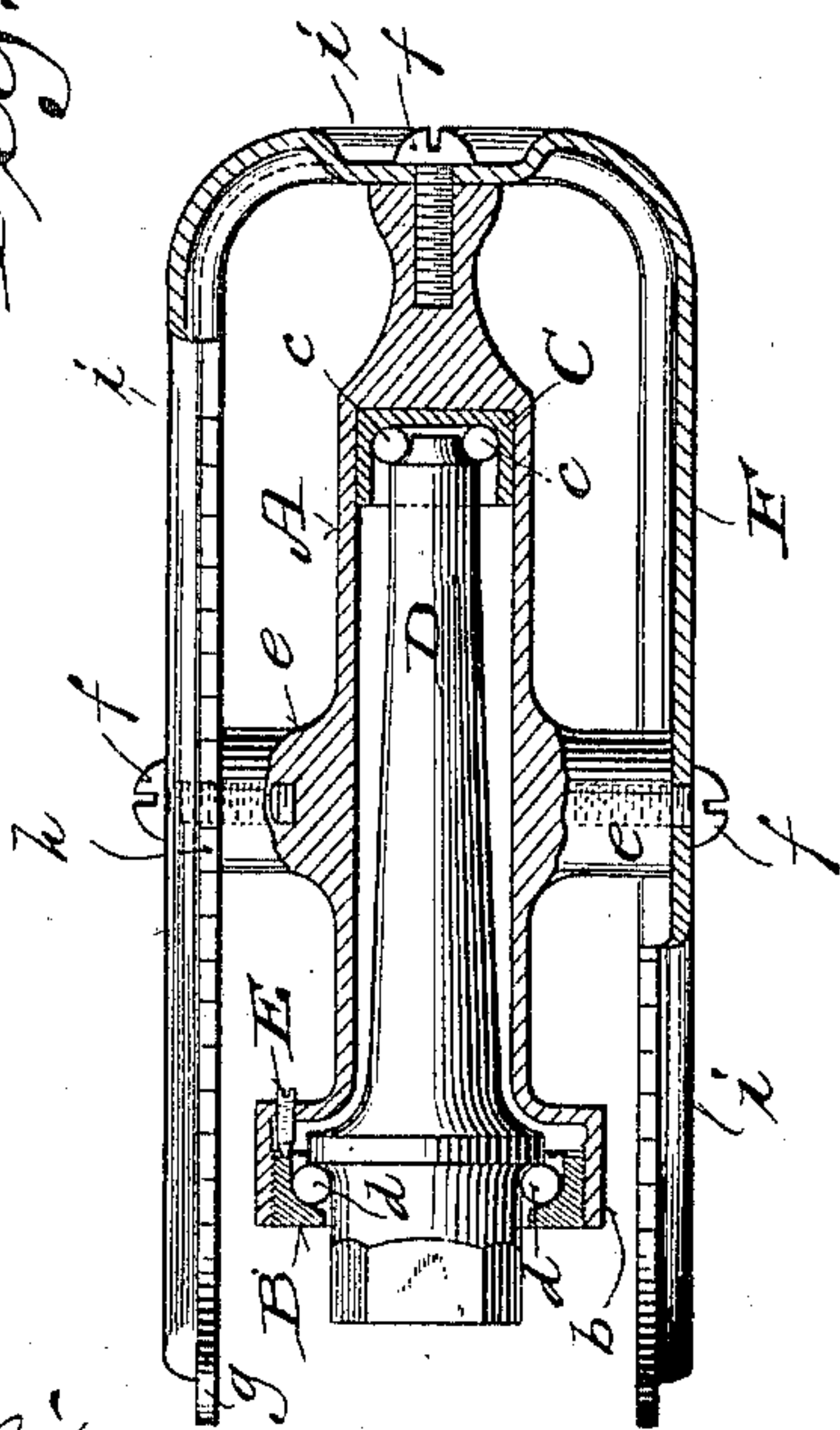
(No Model)

F. H. BOLTE, T. A. DONLEVY & J. R. CONNELL.  
BICYCLE PEDAL.

No. 584,453.

Patented June 15, 1897.

Fig. 1.



Witnesses:  
Geo. W. Loring,  
H. E. Oliphant

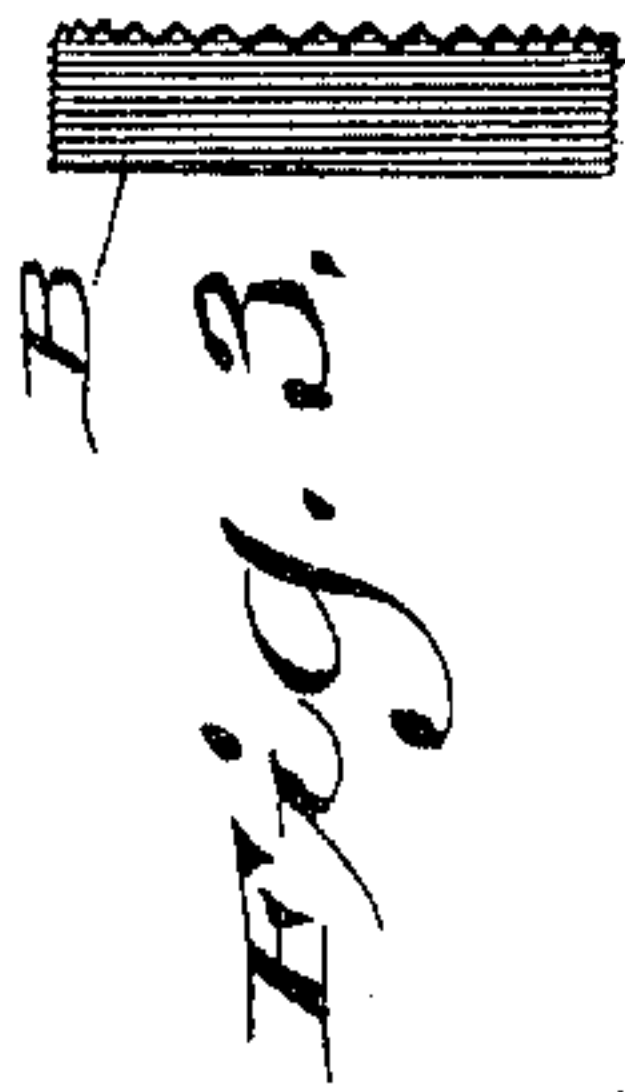


Fig. 3.

Fig. 4.

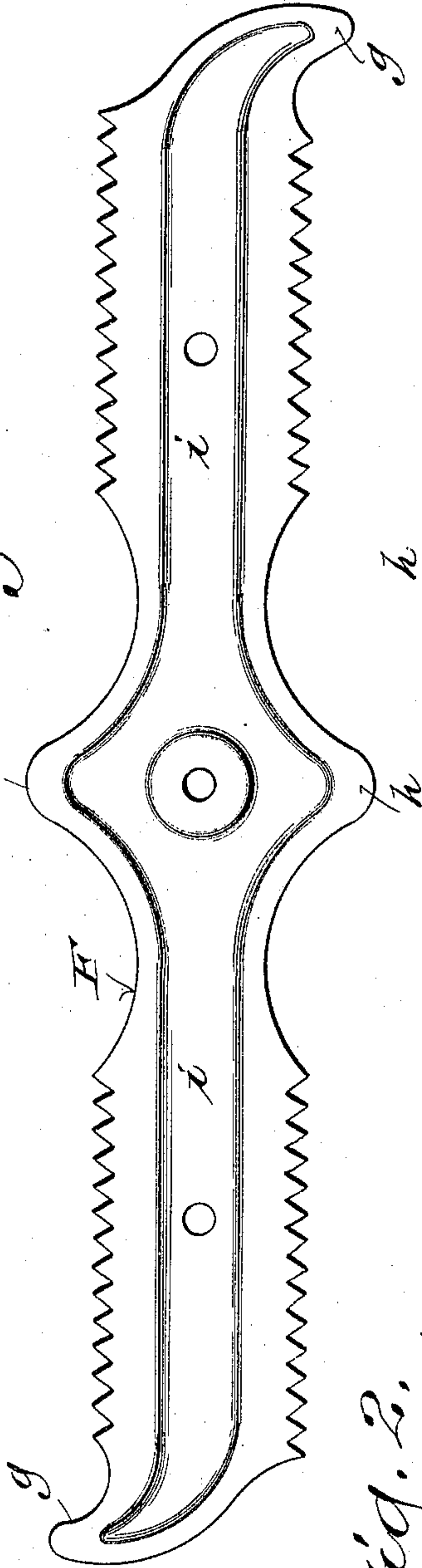


Fig. 5.

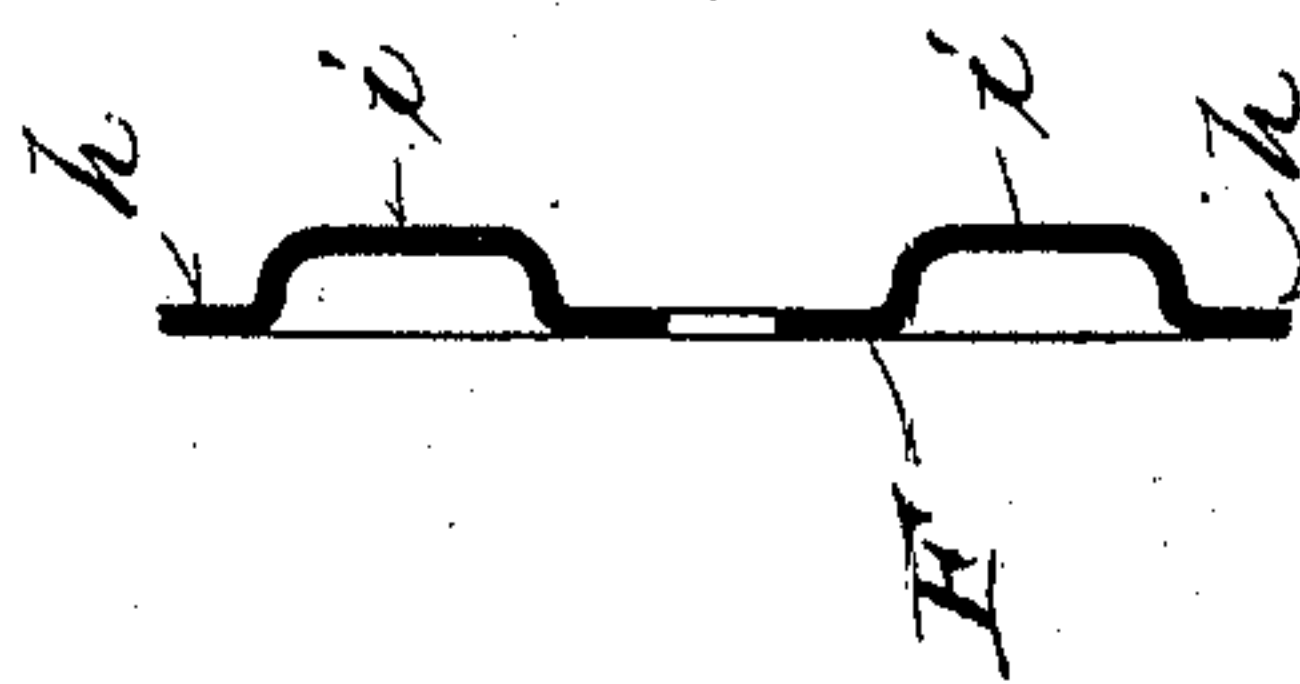
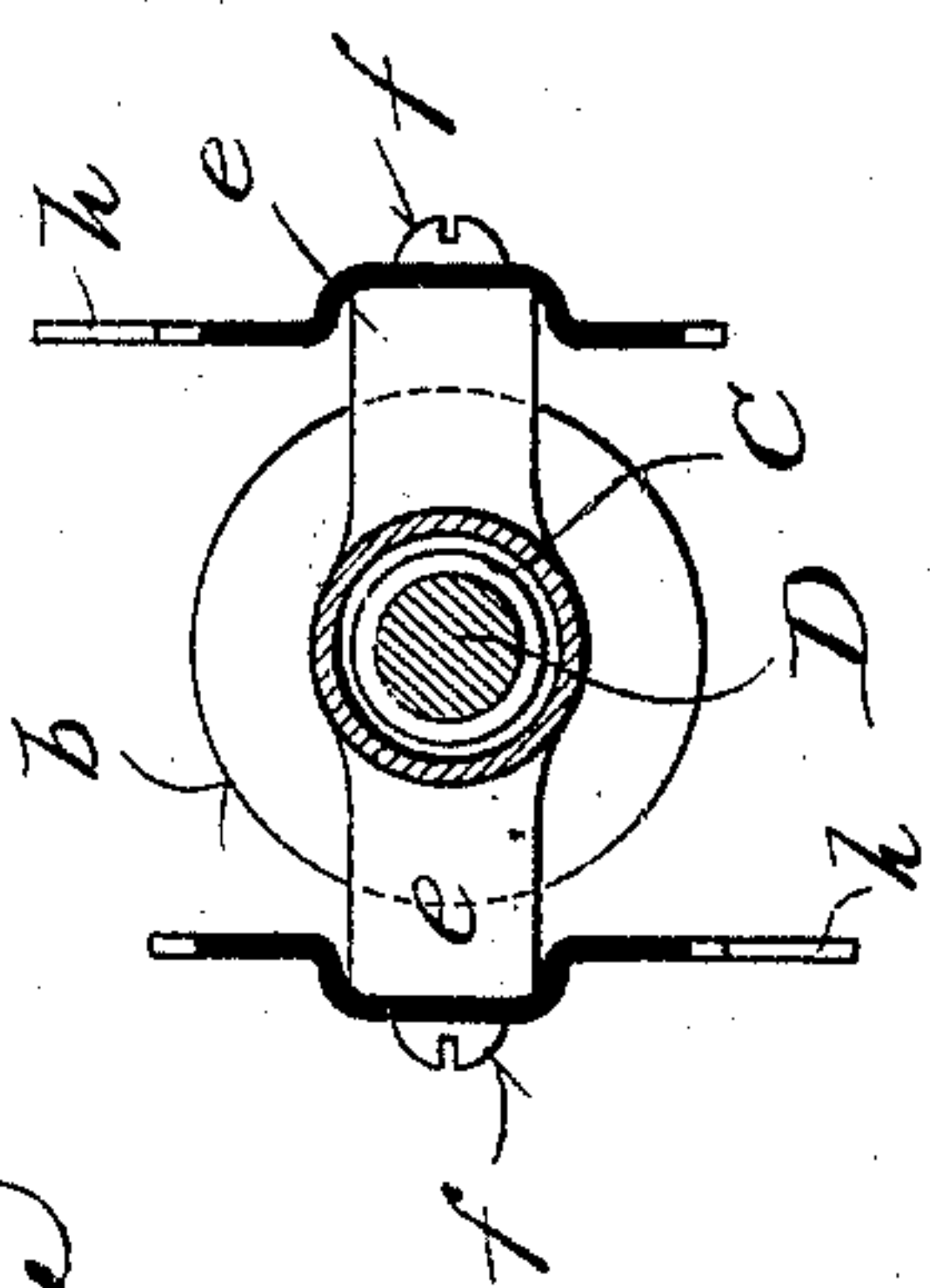


Fig. 2.



By

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# UNITED STATES PATENT OFFICE.

FRANK H. BOLTE, THOMAS A. DONLEVY, AND JAMES R. CONNELL, OF MILWAUKEE, WISCONSIN, ASSIGNORS, BY MESNE ASSIGNMENTS, TO THE LEAGUE CYCLE MANUFACTURING COMPANY, OF SAME PLACE.

## BICYCLE-PEDAL.

SPECIFICATION forming part of Letters Patent No. 584,453, dated June 15, 1897.

Application filed November 15, 1895. Serial No. 569,027. (No model.)

*To all whom it may concern:*

Be it known that we, FRANK H. BOLTE, THOMAS A. DONLEVY, and JAMES R. CONNELL, citizens of the United States, and residents of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Bicycle-Pedals; and we do hereby declare that the following is a full, clear, and exact description thereof.

Our invention has for its object to provide a simple, economical, and strong bicycle-pedal of the rat-trap variety; and it consists in certain peculiarities of construction and combination of parts hereinafter set forth with reference to the accompanying drawings and subsequently claimed.

In the drawings, Figure 1 represents a partly-sectional view of a bicycle-pedal constructed according to our invention as it appears partly in longitudinal section; Fig. 2, a transverse section of the same; Fig. 3, a detail elevation of an adjustable ball-cup; Fig. 4, an elevation of the foot-plate before the same is bent, and Fig. 5 a vertical transverse section taken through the center of said plate.

Referring by letter to the drawings, A represents a barrel that is hollow for the greater portion of its length and enlarged at its inner end to form a housing *b*, the latter being tapped upon its interior for the engagement of a screw-threaded ball-race B, having a serrated inner edge.

Seated in the barrel A against solid metal at the outer terminus of the bore is a ball-cup C, and engaging this cup, against the balls *c* therein, is the cone-shaped outer end of a pin D, the other end of this pin being shouldered and in cone-bearing against balls *d* within the confines of the race B, the latter being held in adjusted position by the engagement of its serrated edge with a set-screw E, arranged to turn in housing portion *b* of said barrel. The adjustment of the ball-race B regulates the bearings for the pin, and the latter may be attached to a crank-arm in any suitable manner, the one herein shown being of the variety organized for screw connection with an outturned end of such a crank.

Extending laterally from the exterior of the barrel A in opposite directions are tapped bosses *e*, and a suitably-bent foot-plate F is connected to these bosses and the tapped but otherwise solid outer end of said barrel by means of screws *f*, this being a very secure, simple, and effective manner of maintaining said foot-plate in position.

The foot-plate is made from a single piece of metal serrated on its edges and shaped to present foot-guards *g* at its ends, as well as similar guards *h* at its center. In order to stiffen the plate F, the latter is swaged to present a rib *i*, that extends from end to end of said plate.

By having the plate F rigidly connected to the outer end of the barrel A the pedal is materially strengthened and less liable to injury if brought into forcible contact with a roadway or other surface.

While certain features of the pedal may be varied in the matters of detail, we attach particular importance to the pin-barrel having the three connecting-points for the one-piece foot-plate that is bent to present parallel serrated edges in the direction of said barrel. Particular importance is also attached to the ball-cup C, set in the barrel A against the solid metal at the outer terminus of the bore of said barrel, it being an easy and comparatively inexpensive matter to properly temper said cup for ball contact and to replace a cup that may be defective. To properly temper the barrel itself for contact with the balls *c* in the absence of cup C is a difficult and expensive matter, and in case of defect or wear a new barrel would be necessary.

Having now fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. A bicycle-pedal comprising a pin-barrel hollow for the greater portion of its length and provided with bosses extending laterally therefrom in opposite directions, and a continuous foot-plate made fast to the bosses and solid end portion of the barrel.

2. A bicycle-pedal comprising a pin-barrel that is hollow for the greater portion of its length in an outward direction and has its inner end enlarged to form a housing, a ball-cup

seated in the barrel against the solid metal  
end of same, a ball-race having screw-thread  
adjustment in the housing and provided with  
serrations on its inner edge, a set-screw ad-  
5 justable in the housing longitudinally of said  
barrel to engage the serrated edge of the ball-  
race, bosses extending laterally from the bar-  
rel in opposite directions therefrom, and a  
continuous foot-plate made fast to the bosses  
10 and outer abutting end of the aforesaid barrel.

3. A bicycle-pedal comprising a pin attach-  
able to a crank-arm, a partly hollow barrel  
in ball-bearing on the pin having a tapped  
but otherwise solid outer end, tapped bosses

extended laterally in opposite directions from  
the pin-barrel intermediate of its extremities,  
and a foot-plate connected by screws to the  
bosses and outer tapped end of said barrel.

In testimony that we claim the foregoing we  
have hereunto set our hands, at Milwaukee, 2  
in the county of Milwaukee and State of Wis-  
consin, in the presence of two witnesses.

F. H. BOLTE.

T. A. DONLEVY.

J. R. CONNELL.

Witnesses:

M. FICHTENBERG,

N. E. OLIPHANT.