No. 706,028. Patented Aug. 5, 1902.

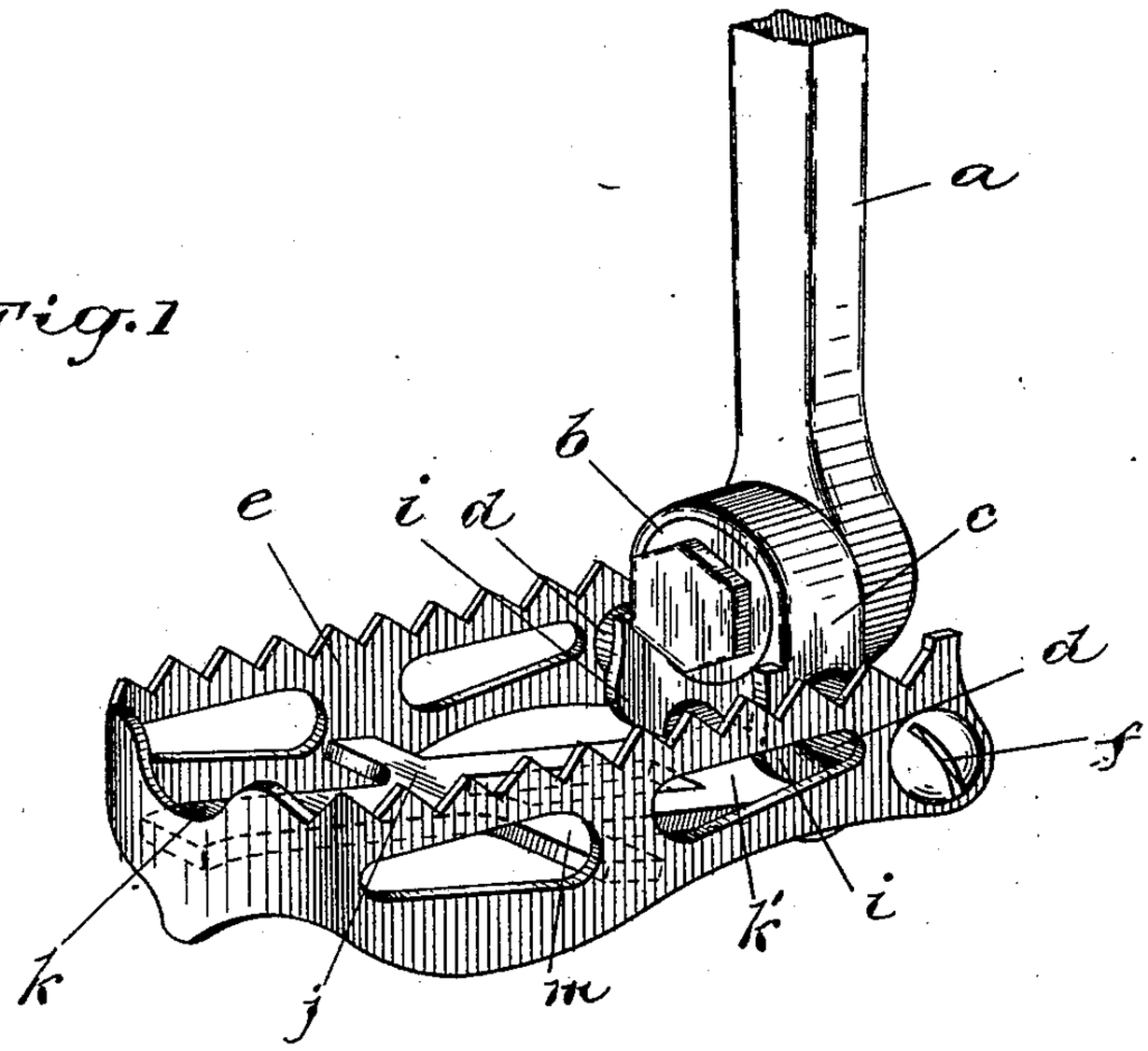
# F. N. CULLEN.

## PEDAL FOR BICYCLES.

(Application filed Apr. 29, 1901.)

(No Model.)

Fig. 1



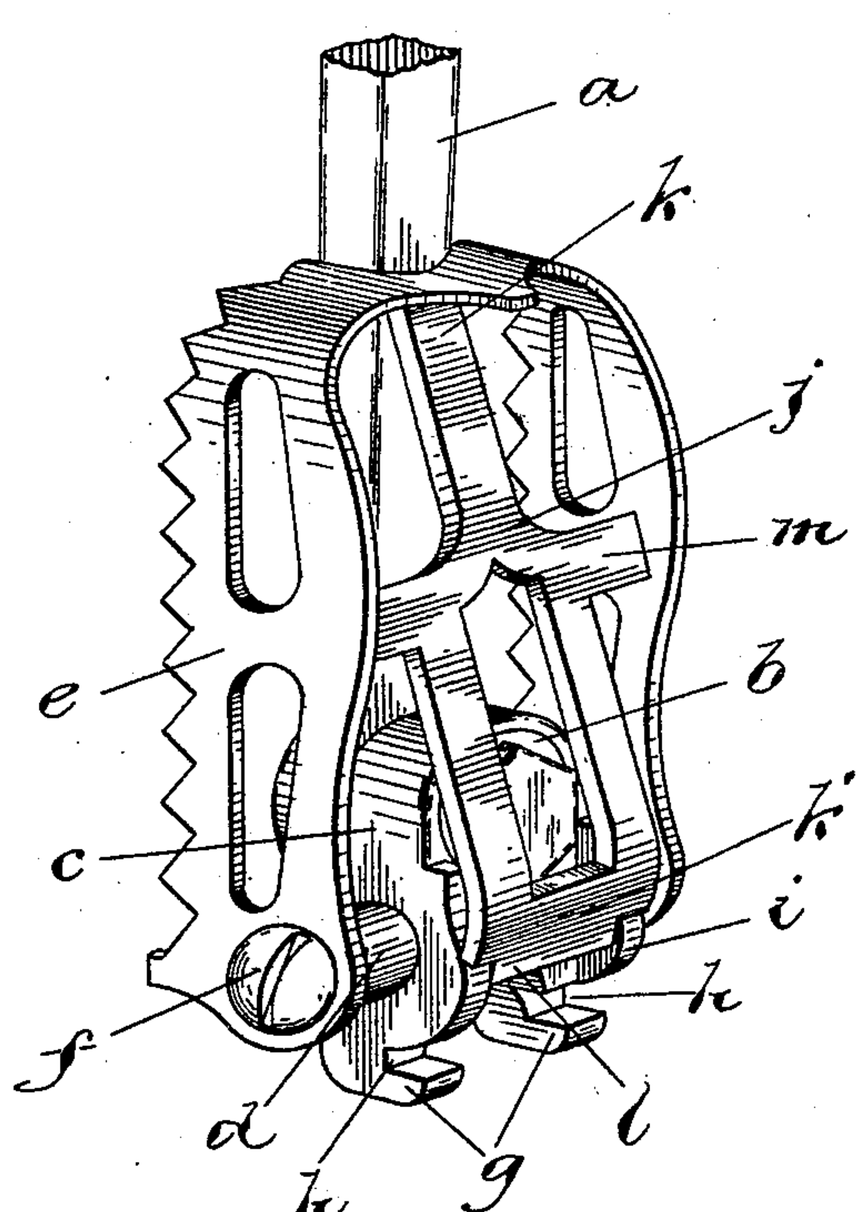




Fig. 2

Witnesses
J. C. Barnes
W. Q. Smith

Inventor
F. N. Cullen
by C. A. Riches
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# UNITED STATES PATENT OFFICE.

FRANCIS N. CULLEN, OF TORONTO, CANADA.

## PEDAL FOR BICYCLES.

SPECIFICATION forming part of Letters Patent No. 706,028, dated August 5, 1902.

Application filed April 29, 1901. Serial No. 58,081. (No model.)

*To all whom it may concern:*

Be it known that I, FRANCIS N. CULLEN, of the city of Toronto, in the county of York and Province of Ontario, Canada, have invented certain new and useful Improvements in Pedals for Bicycles; and I hereby declare that the following is a full, clear, and exact description of the same.

In my previous application filed August 22, 1900, Serial No. 27,759, I have shown and described a bicycle-pedal consisting of a pedal-crank, a stud or shaft rigidly connected to the outer end of the pedal-crank, a revoluble hub mounted upon the stud or pedal-shaft, and a foothold foldably connected to the hub, the foothold being provided with a brace which is adapted to engage with the hub to strengthen it when in its operative position.

The present invention relates to an improvement in the pedal described in the above application, and it relates more particularly to the peculiar construction of the hub of the pedal and of the brace for the foothold and the manner in which the brace engages the hub when the pedal is in its folded and also in its extended position, the object of the invention being to so construct and arrange the hub and brace that when the pedal is folded against the crank its lateral and radial displacement or movement will be prevented by the brace and when extended into its operative position the brace will firmly engage the hub and rigidly resist the strains and forces on the pedal, as hereinafter more fully set forth, and more particularly pointed out in the claims.

In the drawings, Figure 1 is a perspective view of the pedal and a portion of the pedal-crank, showing the pedal in its extended position. Fig. 2 is a similar view showing the pedal folded against the pedal-crank.

Like letters of reference refer to like parts throughout the specification and drawings.

As many of the parts in this pedal are similar in construction to those described in the above application, it will not be necessary to enlarge upon the description except where it is necessary to point out the alterations and improvements.

*a* represents the pedal-crank; *b*, the stud or shaft; *c*, the hub, revolubly mounted upon the stud or shaft *b*; *d*, the arms, projecting outwardly from the hub, and *e* the foothold, foldably connected to the arms *d* by the pivot-screws *f*. So far the construction is similar to that described in the previous application.

Extending downwardly from the hub *c* are two lugs *g*, and formed in the side face of the lugs *g*, contiguous to the foothold, is a horizontal groove *h*. The side faces of the lugs contiguous to the foothold *e*, between the groove *h* and stud *b*, are rounded to form a cam or cams *i*. The foothold *e* is provided with a longitudinal spring-brace *j*, one end *k* of which is connected to the outer end of the foothold *e* and the other or inner end *k'* of which is free and engages with the cams *i* when the foothold is in its folded position and registers in the grooves *h* and engages the lugs *g* when in its extended position. The end *k'* of the brace *j* is provided with a tongue *l*, contained between the lugs *g* when the foothold is in both its extended or folded position. The tongue *l* not only prevents the lateral displacement of the brace, but it also enables the foothold to resist the side strains upon it and also causes the correct movement of the brace when oscillating from the folded to the extended position of the foothold, and vice versa.

The middle of the spring-brace *j* is provided with two outwardly-directed arms *m*, which are connected to the sides of the foothold for the purpose of holding them asunder. The engagement of the end *k'* of the brace with the cam or cams *i* when the pedal is in its folded position enables the brace to hold the foothold firmly against the pedal-crank and prevent the radial displacement of the same through vibration or other minor causes, the tongue *l* preventing the lateral displacement of the foothold. When the pedal is in its extended or operative position, the end *k'* of the brace registers in the groove *h* and the tongue is contained between the lugs. The downward pressure on the foothold when in this position is resisted by the engagement of the brace with the lugs, the groove in the lugs preventing the brace being forced downward and out of engagement with them. The tongue of the brace-pedal is in its extended or folded position and resists the lateral strain on the foothold and prevents the lateral dis-

placement of the brace from the lugs. By providing a hub with the grooved lugs and a foothold with a brace arranged in this way the pedal when in its extended position will be fully as rigid as the ordinary pedal now in common use, and when in its folded position the engagement of the spring-brace with the cams will hold the pedal securely against the pedal-crank.

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

1. In a bicycle-pedal, a hub adapted to be connected to the pedal-crank, a foothold foldably connected to the hub, and a brace, one end of which is rigidly connected to the foothold and the other end of which engages the hub and supports the foothold in the folded and extended positions, substantially as specified.

2. In a bicycle-pedal, a hub adapted to be connected to the pedal-crank and provided with a transversely-disposed groove, a foothold foldably connected to the hub and a brace, one end of which is connected to the foothold and the other end of which is adapted to register in the groove formed in the hub, substantially as specified.

3. In a bicycle-pedal, a hub adapted to be connected to the pedal-crank, a foothold foldably connected to the hub, a cam for the hub adjacent to the foothold a brace one end of which is connected to the foothold and the other end of which abuts against the hub when the foothold is in its extended position to firmly brace the same and engages the cam when the foothold is in its folded position, substantially as specified.

4. In a bicycle-pedal, a hub adapted to be connected to the pedal-crank and provided with downwardly-directed lugs, a foothold foldably connected to the hub, a brace, one end of which is rigidly connected to the foothold, and the other end of which engages the hub to support the foothold in its extended position, substantially as specified.

5. In a bicycle-pedal, a hub adapted to be connected to the pedal-crank and provided with downwardly-directed lugs, a foothold foldably connected to the hub, a brace, one end of which is rigidly connected to the foothold and the other end of which is free to engage the lugs of the hub when the foothold is in its extended position, cams on the lugs to distend the brace to hold the foothold firmly in its folded position, substantially as specified.

6. In a bicycle-pedal, a hub, a foothold foldably connected to the hub, downwardly-directed lugs integrally formed with the hub, a brace for the foothold one end of which is rigidly connected to the foothold and the other end of which is adapted to engage the lugs, and a tongue for the brace to register between the lugs, substantially as specified.

7. In a bicycle-pedal, a hub, downwardly-directed lugs integrally formed with the hub, a foothold foldably connected to the hub, a groove in the side face of the lugs adjacent to the foothold, a brace one end of which is rigidly connected to the foothold and the other end of which is free to engage the lugs and register in the groove when the foothold is in its extended position, and a tongue on the free end of the brace to register between the lugs, substantially as specified.

8. In a bicycle-pedal, a hub, downwardly-directed lugs integrally formed with the hub, a foothold foldably connected to the hub, a groove in the side face of the lugs adjacent to the foothold, a brace, one end of which is rigidly connected to the foothold and the other end of which is free to engage the lugs and register in the groove when the foothold is in its extended position, a tongue on the free end of the brace to register between the lugs, and cams on the lugs to distend the brace to securely hold the foothold in its folded position, substantially as specified.

Toronto, April 12, 1901.

FRANCIS N. CULLEN.

In presence of—

THOMAS C. THOMSON,

C. H. RICHES.