(No Model.) 2 Sheets—Sheet 1.

J. GALT & A. P. RANKIN.

ADJUSTABLE HANDLE BAR.

No. 567,853. Patented Sept. 15, 1896.

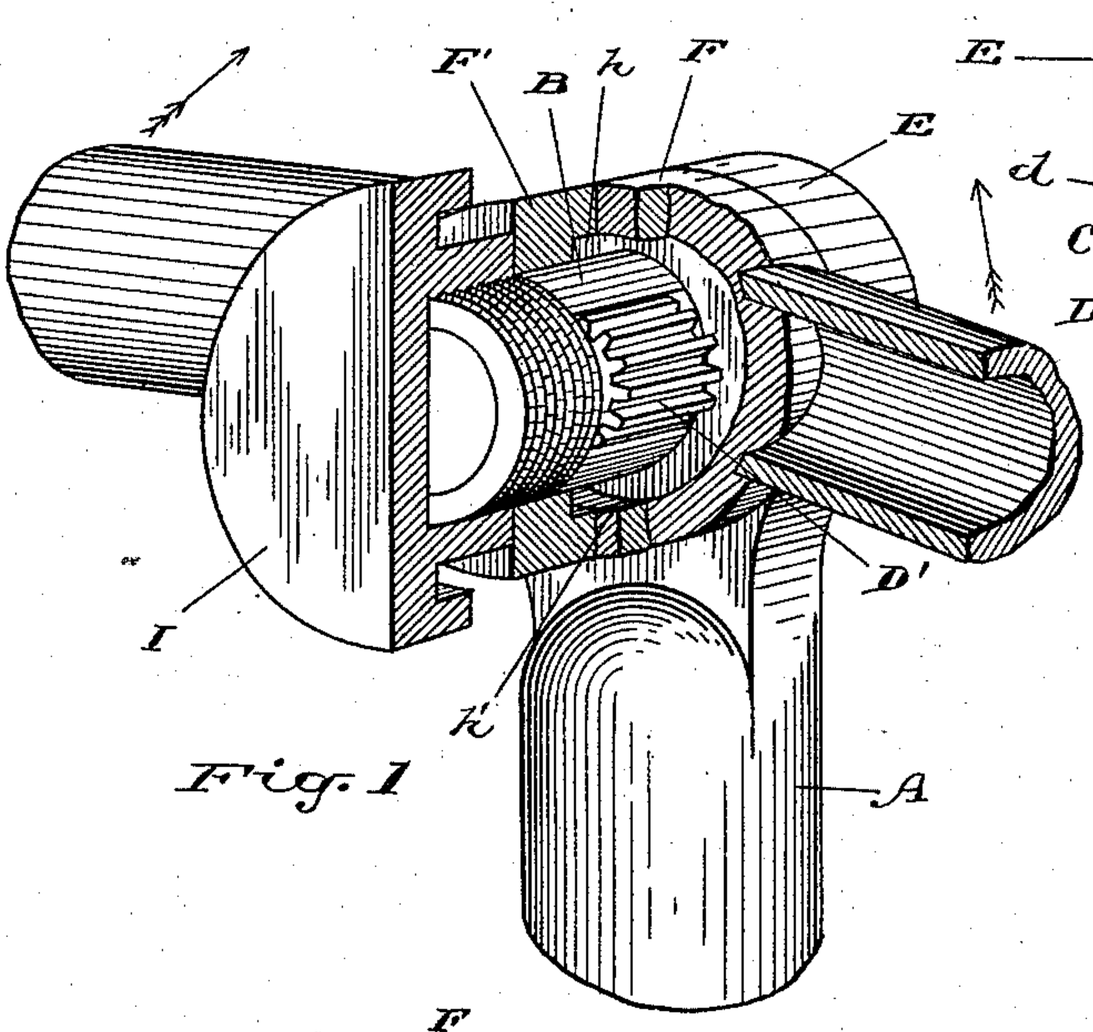

Fig. 1

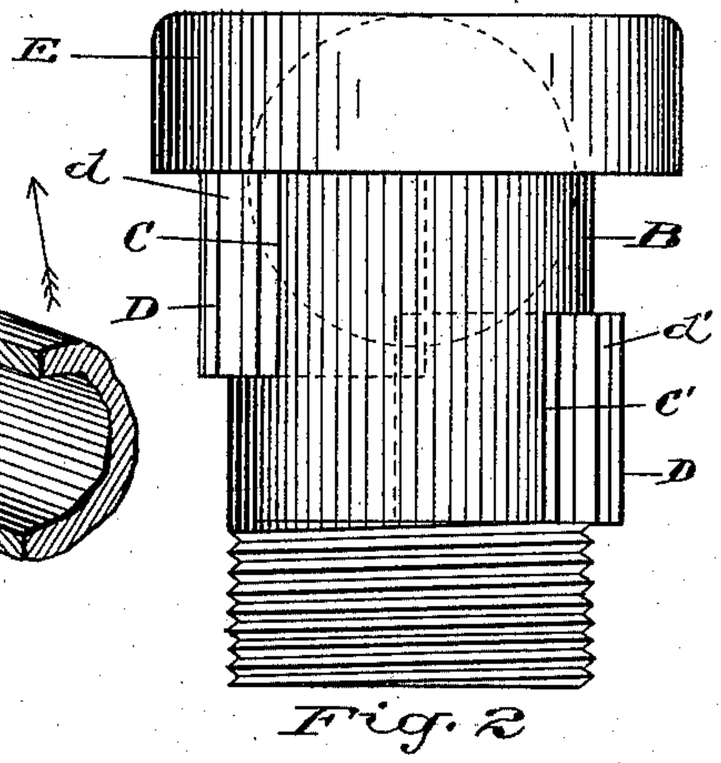

Fig. 2

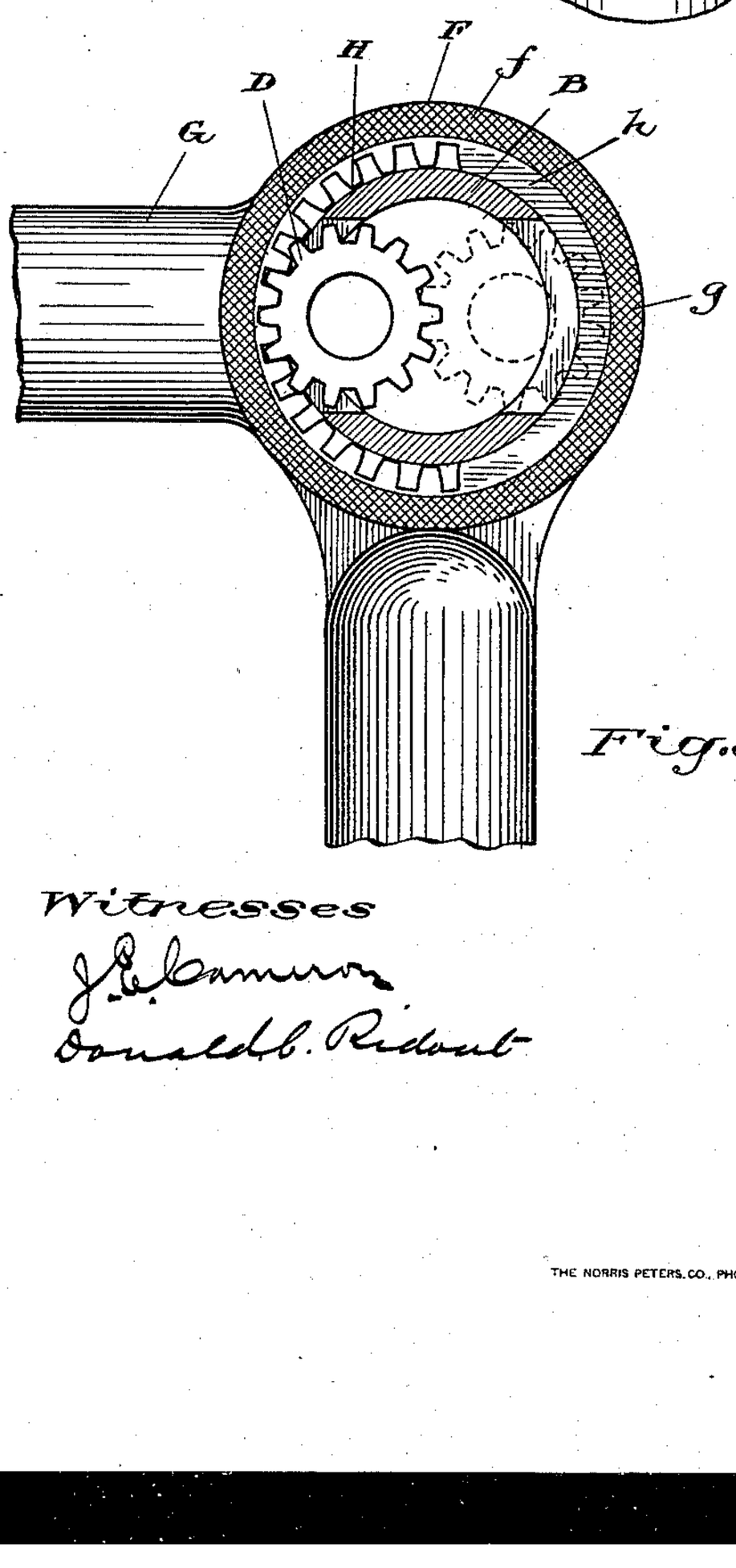

Fig. 3

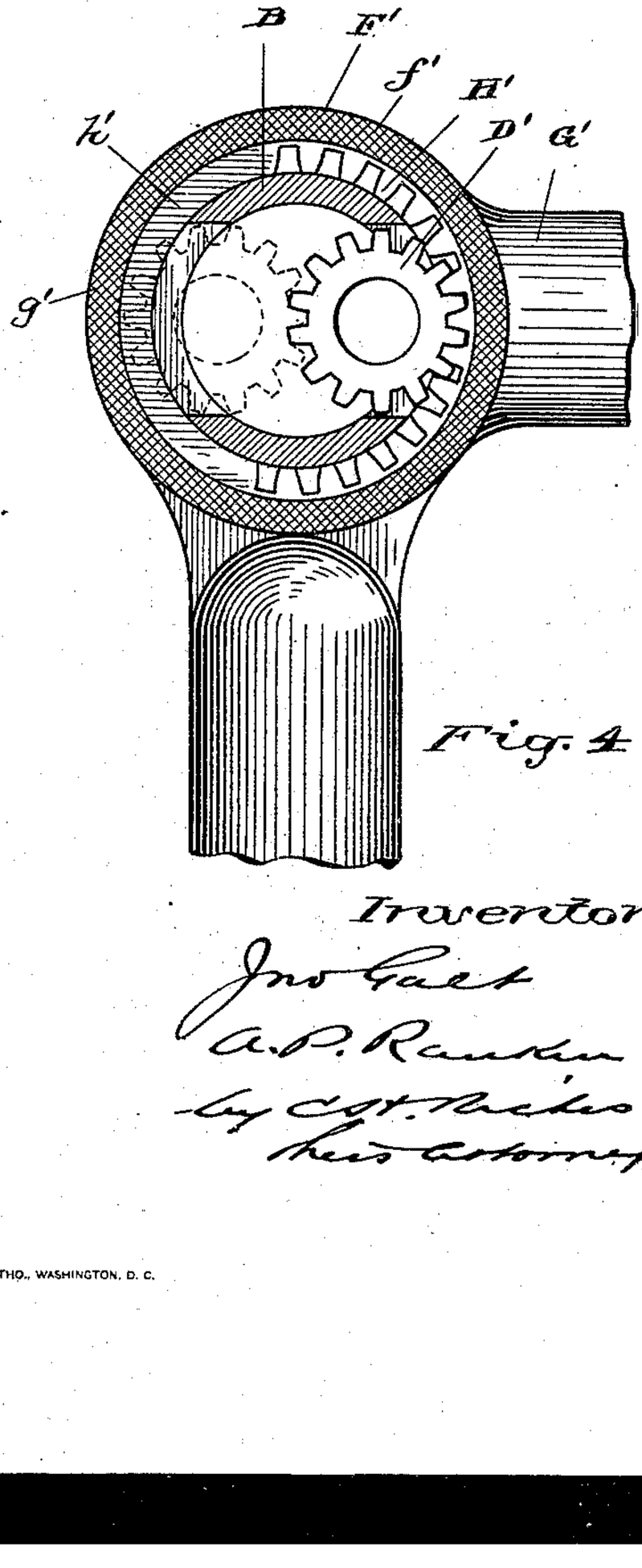

Fig. 4

Witnesses
J. E. Lamuson
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Inventors
Jno Galt
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by C. G. T. Ridout
their Attorney.

(No Model.) 2 Sheets—Sheet 2.

J. GALT & A. P. RANKIN.

ADJUSTABLE HANDLE BAR.

No. 567,853. Patented Sept. 15, 1896.

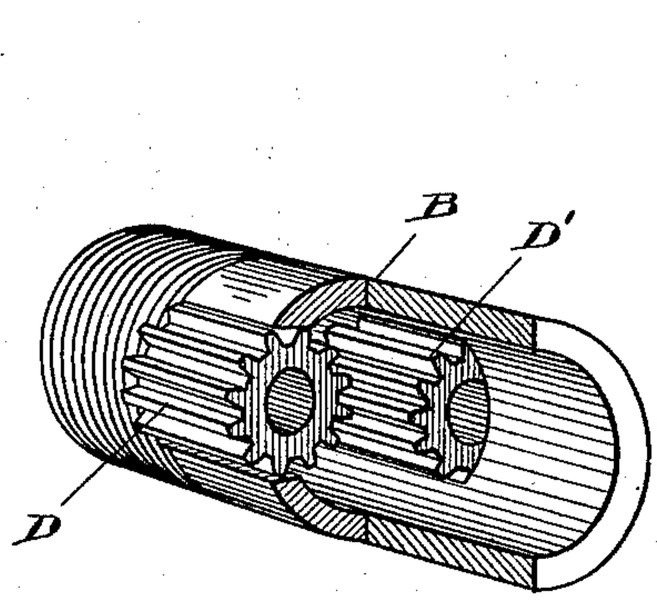

Fig. 5

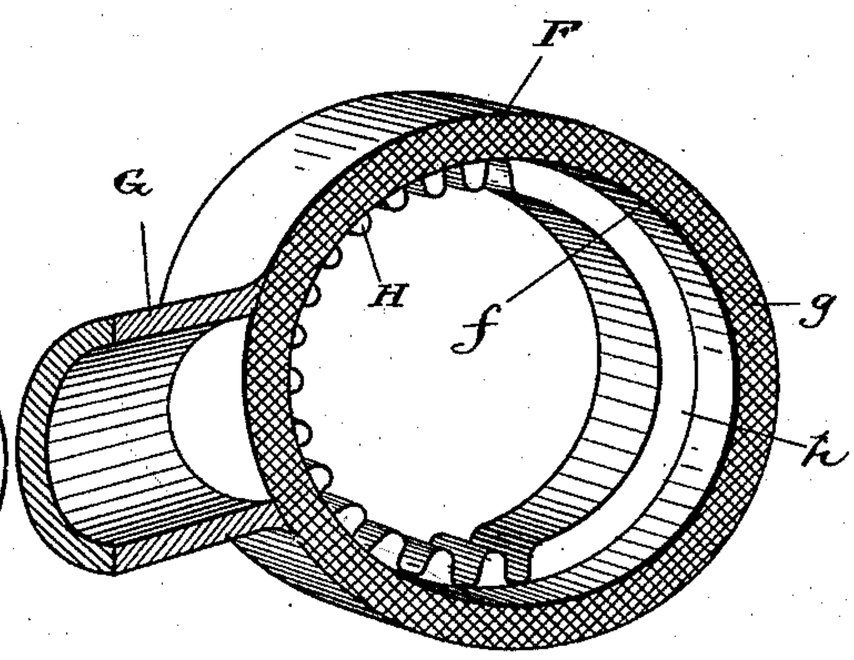

Fig. 6

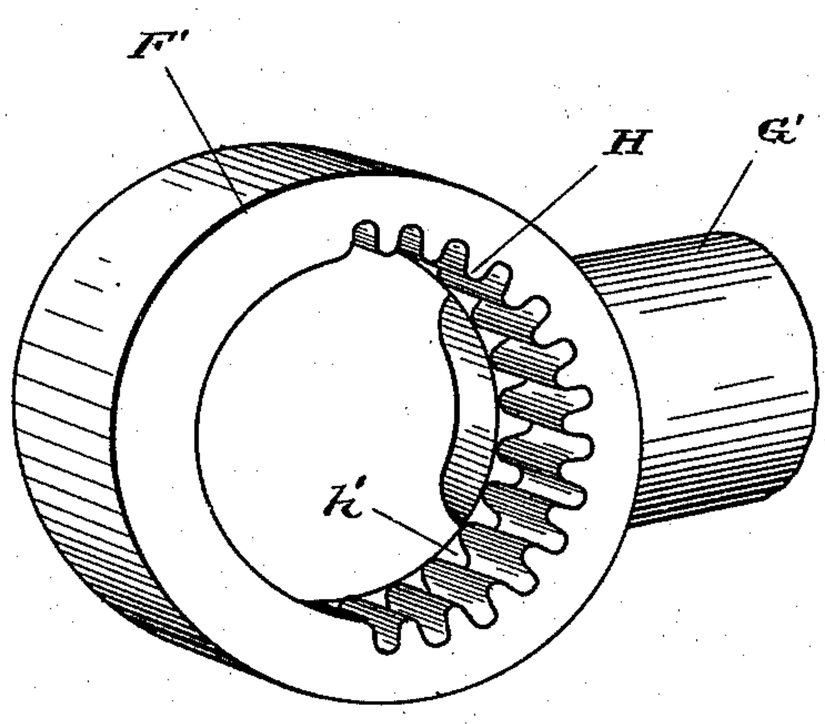

Fig. 7

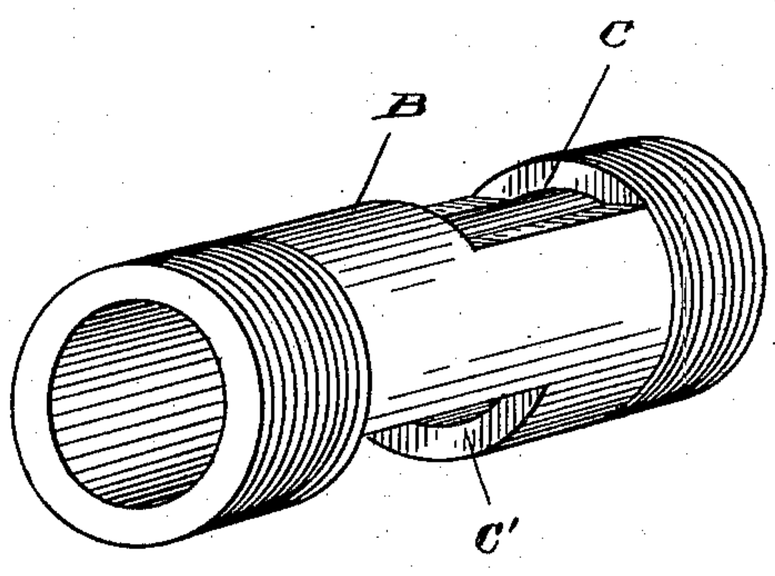

Fig. 8

Witnesses

J. E. Cameron

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Inventors

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UNITED STATES PATENT OFFICE.

JOHN GALT AND ARCHIBALD P. RANKIN, OF TORONTO, CANADA, ASSIGNORS OF ONE-HALF TO PETER RUTHERFORD WRIGHT, OF SAME PLACE.

ADJUSTABLE HANDLE-BAR.

SPECIFICATION forming part of Letters Patent No. 567,853, dated September 15, 1896.

Application filed February 18, 1896. Serial No. 579,762. (No model.)

To all whom it may concern:

Be it known that we, JOHN GALT and ARCHIBALD P. RANKIN, of the city of Toronto, in the county of York and Province of Ontario, Canada, have invented certain new and useful Improvements in Adjustable Handle-Bars; and we hereby declare that the following is a full, clear, and exact description of the same.

This invention relates to certain new and useful improvements in the steering apparatus of bicycles, tricycles, quadricycles, tandem bicycles, and like vehicles; and the object of the invention is to provide a steering-post with a handle-bar the shape and elevation of which can be altered by the rider without dismounting; and the invention consists, essentially, of making the handle-bar in two equal sections, the inner end of each of which is fitted with an eye having an internal segmental gear extending partially across its face and fitting the steering-post with a horizontal pin, on which are mounted the said eyes, providing the pin with two obliquely-opposed slots, and fitting into the pin two engaging pinions, each adapted to work through its respective slot and mesh with the gear of the eye of its respective handle-bar section in order that the movement of one handle-bar section will cause a simultaneous corresponding movement on the part of the other handle-bar section, the whole device being hereinafter more fully set forth, and more particularly pointed out in the claims.

In the drawings, Figure 1 is a perspective view showing our improvements, partially in section. Fig. 2 is a plan view of the top of the steering-post, the horizontal pin, and the engaging pinions. Fig. 3 is a transverse sectional view showing the eye of one of the handle-bar sections, the engaging pinions, the horizontal pin, and the top of the steering-post. Fig. 4 is a similar view of the other handle-bar section. Fig. 5 is a perspective view, partially in section, of the horizontal pin. Fig. 6 is a perspective view of the eye of one of the handle-bar sections. Fig. 7 is a perspective view of the eye of the other handle-bar section. Fig. 8 is a perspective view of the horizontal pivot.

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

Screwed, brazed, riveted, or otherwise fastened to the top of the steering-post A is a horizontal pin B. The pin B is hollow and is provided with two obliquely-opposed slots C C′. Located within the pin B are two pinions D D′, so arranged as to engage with each other. The teeth *d* of the pinion D project through the slot C, while the teeth *d′* of the pinion D′ project through the slot C′. The teeth *d d′* project through their respective slots sufficiently to engage the teeth in the eyes of their respective handle-bar sections. The slot C and pinion D are located contiguous to the head E of the steering-post, while the slot C′ and pinion D′ are located contiguous to the screw-threaded part of the pin B. The pinions D D′ overlap each other sufficiently to allow the teeth *d d′* to mesh, to enable one pinion to impart its motion to the other.

Mounted on the pin B contiguous to the head E of the steering-post is the eye F of a handle-bar section G. Mounted on the sleeve B contiguous to the eye F is the eye F′ of the handle-bar section G′. The adjacent side face of each of the eyes F F′ is provided with a series of serrations *g g′*, respectively, which interlock and assist in holding the handle-bar sections in their adjusted positions. The inner face of the eye F is provided with a semiannular gear H, the teeth of which extend partially across the inner face of the eye, and between the end of the teeth H and that side face of the eye F contiguous to the eye F′ is a clearance *h*, entirely devoid of teeth. The inner face of the eye F′ is provided with a semiannular gear H′, the teeth of which extend partially across the inner face of the eye. Between the end of the teeth H′ and that side face of the eye F′ contiguous to the eye F is a clearance *h′*. The teeth of the semiannular gear H mesh with the pinion D, while the teeth of the semian-

nular gear H′ mesh with the teeth of the pinion D′. The clearance *h* precludes any possibility of the teeth of the semiannular gear H meshing with the teeth of the pinion D′, while the clearance *h*′ prevents any possibility of the teeth of the semiannular gear H′ meshing with the teeth of the pinion D. Screwed on the end of the pin B is a locking cap or nut I to hold the several parts together.

The operation of the device is as follows: By releasing the locking cap or nut I the handle-bar sections can be moved in either direction. Assume that the handle-bar section G is moved upward or in the direction indicated by arrows, the teeth of the semiannular gear H meshing with the teeth of pinion D, and the teeth of the pinion D meshing with the teeth of the pinion D′, and the teeth of the pinion D′ meshing with the teeth of the semiannular gear H′. The upward movement of the handle-bar section G causes a corresponding simultaneous movement on the part of the handle-bar section G′. The reverse movement of the handle-bar section G would cause a reverse movement of the handle-bar section G′. When the handle-bar sections have been adjusted to their proper positions, the locking cap or nut I is screwed tightly against the adjacent side face of the eye F′ of the handle-bar section G′ and locks the two sections tightly against each other and against the head of the steering-post. It might be stated that by this arrangement of parts it is possible for the rider to adjust the handle-bar sections without dismounting and to lock the handle-bar sections in their adjusted positions.

By means of this device the handle-bar sections can be raised or lowered, as required, in any position, and when stored in a hallway can be lowered to occupy a more limited space than they otherwise would.

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

1. The combination with the steering-head of the two handle-bars mounted thereon at their inner ends on coincident axes, an intermediate connecting-gearing sustained by the head and operatively connected to the handle-bars and means for holding the handle-bars in their adjusted positions.

2. The combination with the steering-head of the two handle-bars provided with gear-teeth and pivotally connected to said head on coincident axes, gear-wheels mounted in bearings sustained by the head and meshing with each other and also with the teeth on the handle-bars, and means for locking the handle-bars in their adjusted positions.

3. The combination with the steering-head provided with a horizontal arm formed with bearings, of two intermeshing gears mounted in the bearings in said arm, two handle-bars provided at their inner ends with eyes to receive the arm and formed with internal gear-teeth meshing respectively with the two gears, and means for locking the arms in their adjusted positions.

4. A steering apparatus for bicycles consisting of a steering-post, a slotted horizontal arm extending from the steering-post, a handle-bar comprised of two independent sections, each section provided with an eye through which passes the said arm, an annular gear on the inner face of each of the eyes, two engaging pinions within the slotted sleeve, the teeth of each pinion adapted to engage with the teeth in the eye of its respective handle-bar section, substantially as specified.

5. A steering apparatus for vehicles consisting of a steering-post, a slotted horizontal arm extending from the steering-post, a handle-bar comprised of two independent sections, each section having an eye through which passes the said arm, a semiannular gear cut on the inner face of each of the said eyes, the teeth extending partially across the same, leaving a clearance contiguous to the adjacent meeting faces of the said eyes, two engaging pinions within the slotted arm, the teeth of which extend beyond the same, and engage with the teeth of the semiannular gear, and with each other, substantially as specified.

6. A steering apparatus for vehicles consisting of a steering-post, a slotted horizontal arm extending from the steering-post, a handle-bar comprised of two independent sections, each section provided with an eye, through which passes the horizontal arm, an annular gear on the inner face of each of the eyes, two engaging pinions within the slotted arm, one pinion adapted to engage with the gear of its respective eye, and a cap or nut to lock the handle-bar sections in their adjusted positions, substantially as specified.

7. A steering apparatus for vehicles consisting of a steering-post, a slotted horizontal arm extending from the steering-post, a handle-bar comprised of two independent sections, each section having an eye through which passes the said arm, a semiannular gear cut on the inner face of each of the said eyes, the teeth extending partially across the same, leaving a clearance contiguous to the adjacent meeting faces of the said eyes, two pinions within the slotted sleeve, the teeth of which extend beyond the same, and engage with the teeth of the semiannular gear, and with each other, and a cap or nut to lock the handle-bar sections in their adjusted positions, substantially as specified.

Toronto, February 12, A. D. 1896.

JOHN GALT.
ARCH. P. RANKIN.

In presence of—
M. A. WESTWOOD,
C. H. RICHER.