

No. 635,689.

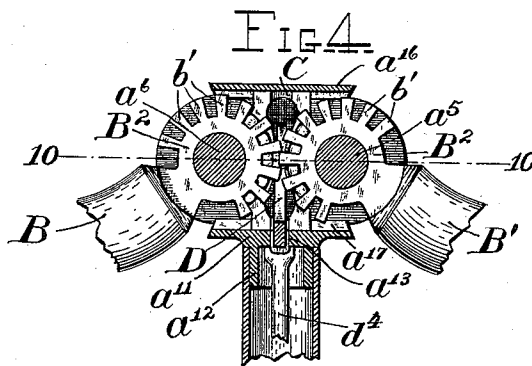
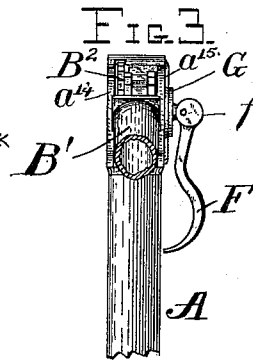
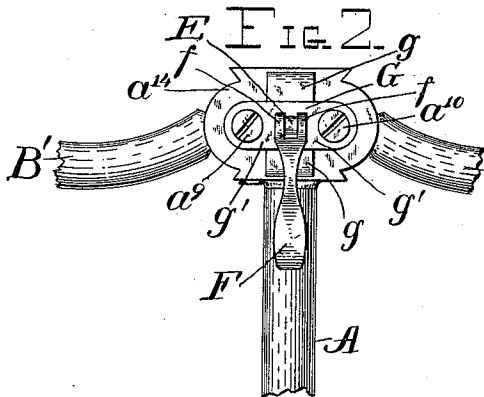
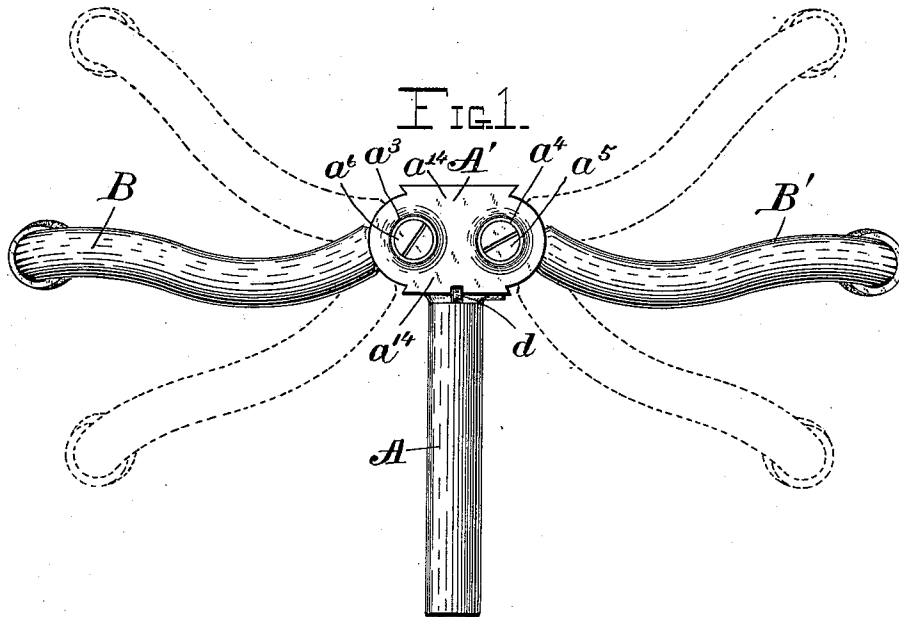
Patented Oct. 24, 1899.

J. D. KING & M. A. BURNS.  
ADJUSTABLE HANDLE BAR.

(Application filed Jan. 6, 1899.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses

*John H. Vail*  
*Percy C. Bowen.*

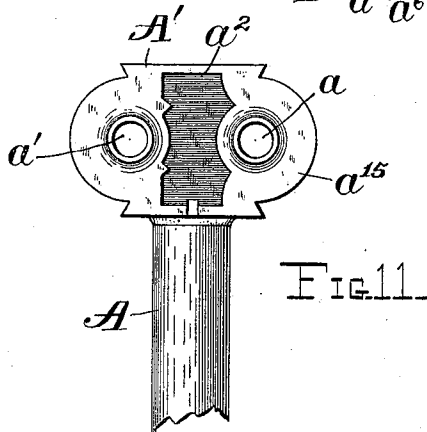
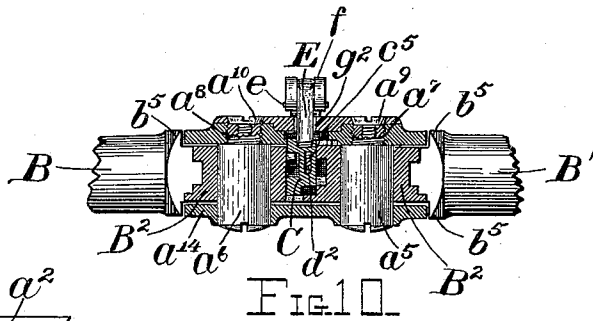
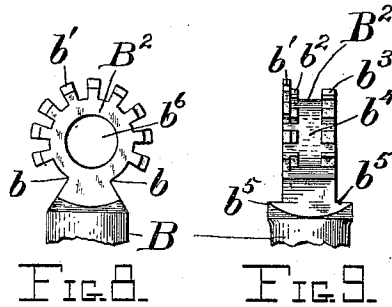
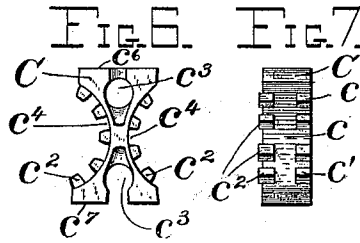
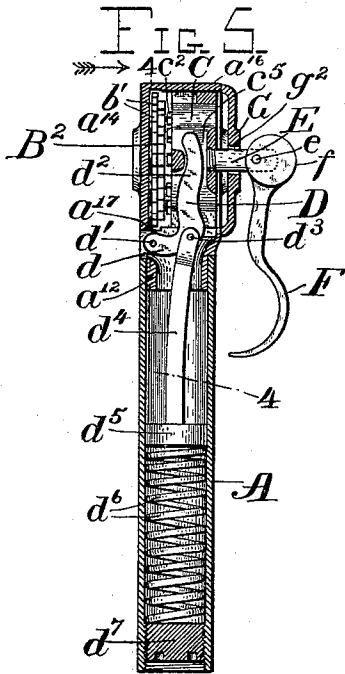
Inventors.  
*J. D. King,*  
*M. A. Burns.*  
by *Wilkinson & Fisher*  
Attorneys.

J. D. KING & M. A. BURNS.  
ADJUSTABLE HANDLE BAR.

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(No Model.)

2 Sheets—Sheet 2.



Witnesses  
*John H. Hall*  
*Rey C. Bowen*

Inventors  
*J. D. King*  
*M. A. Burns*  
 by *Wilkinson & Fisher*  
 Attorneys

# UNITED STATES PATENT OFFICE.

JOSEPH D. KING AND MATTHEW A. BURNS, OF MENOMINEE, MICHIGAN.

## ADJUSTABLE HANDLE-BAR.

SPECIFICATION forming part of Letters Patent No. 635,689, dated October 24, 1899.

Application filed January 6, 1899. Serial No. 701,352. (No model.)

*To all whom it may concern:*

Be it known that we, JOSEPH D. KING and MATTHEW A. BURNS, citizens of the United States, residing at Menominee, in the county of Menominee and State of Michigan, have invented certain new and useful Improvements in Adjustable Handle-Bars; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to an improved adjustable handle-bar; and the object of our invention is to produce a handle-bar that will be strong and positive in action.

With this object in view our invention consists in the construction and combinations of parts, as hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a front view of our improved handle-bar, showing in dotted lines the handles in different positions. Fig. 2 is a rear view of the same, parts being broken off. Fig. 3 is a side view of the construction shown in Fig. 2. Fig. 4 is a cross-section on the line 4 4 of Fig. 5, looking in the direction of the arrow. Fig. 5 is a transverse central section. Fig. 6 is a front view of the locking-rack. Fig. 7 is a side view of the same. Fig. 8 is a fragmentary view showing the inner end of one of the handles. Fig. 9 is a side view of the same. Fig. 10 is a horizontal cross-section taken on the line 10 10 of Fig. 4; and Fig. 11 is a rear view of the stem and handle-bar head, the other parts being removed.

A represents the stem, closed at the bottom by the nut  $d^7$ , on which rests a spring  $d^6$ , the upper end of which abuts against the stop  $d^5$  on the arm  $d^4$ , located inside the stem and pivoted at  $d^3$  to the bell-crank lever D, the horizontal arm  $d$  of which is pivoted on a pin  $d'$  and which has an upwardly-extending arm  $d^2$ , which passes through the slot  $c^5$  in the locking-rack C.

The handle-bar head A' is provided with a downwardly-projecting extension  $a^{12}$ , fitting within the stem A, to which it is securely fastened by brazing or in any other suitable manner. Above this extension the head is provided with a base-plate  $a^{11}$ , perforated at  $a^{13}$  to allow the lever D to move freely. The head is open from side to side to receive the

inner ends of the handle-bars B B' and has a front plate  $a^{14}$ , a rear plate  $a^{15}$ , provided with an opening  $a^2$ , and a top  $a^{16}$ . The front and rear plates are perforated at  $a'$   $a^3$   $a^4$  for the reception of the pivot-pins  $a^5$   $a^6$ , on which the inner ends of the handle-bars are mounted. The perforations  $a'$  are smaller than the perforations  $a^3$   $a^4$  and are screw-threaded. The pivot-pins  $a^5$   $a^6$  are provided with reduced screw-threaded ends  $a^7$   $a^8$ , which engage the screw-threads in the perforations  $a'$ .

Each of the handle-bars is provided with an end B<sup>2</sup>. (See Figs. 8 and 9.) The handle-bars are cut away where the ends join them, forming angles  $b$  and shoulders  $b^5$ . The general shape of each of these ends B<sup>2</sup> is circular, and each is perforated at  $b^6$  to engage with one of the pivot-pins  $a^5$  or  $a^6$ . Each head is provided with two sets of short gear-teeth  $b^2$   $b^3$  to engage with the teeth on the rack C, and a set of longer gear-teeth  $b'$ , which mesh with the long teeth on the corresponding end of the other handle-bar. Between the teeth  $b^2$  and  $b^3$  is a smooth portion  $b^4$ . The plate  $a^{11}$  is cut away at  $a^{16}$  to afford space for the movement of the teeth  $b'$ .

The locking-rack C is best shown in Figs. 6 and 7. It is provided with two parts  $c^4$ , each formed on the arc of a circle. Each of these arc-shaped parts is provided with two sets of gear-teeth  $c'$   $c^2$ , separated by a smooth portion  $c$ . The rack may be made solid, but is shown cut away at  $c^3$  to reduce the weight. It is provided with a central perforation  $c^5$ , (see Figs. 5 and 10,) through which the arm  $d^2$  of the lever D passes. It has flat top and bottom portions  $c^6$   $c^7$ , which engage on the inside with the plates  $a^{11}$   $a^{17}$  of the handle-bar head. It is placed within said head by slipping it in through the opening  $a^2$ , care being taken that the arm  $d^2$  of the lever D be passed through the perforation  $c^5$ . This aperture is closed by the cross-shaped plate G, having the arms  $g$   $g'$ , the latter being perforated to permit the passage of the locking-bolts  $a^9$   $a^{10}$ , which screw into the reduced ends  $a^7$   $a^8$  of the pivot-pins  $a^5$   $a^6$ . These bolts may be provided with washers, if desired.

The locking-rack C may be moved back and forth, so that the teeth  $c'$   $c^2$  thereon may be brought into or out of engagement, as desired, with the teeth  $b^2$   $b^3$  on the ends B<sup>2</sup> of the han-

dle-bars B B' by means of the pin E, which is secured to the rack C and passes through an opening  $g^2$  in the plate G. To this pin E is pivoted at  $e$  the operating-lever, provided with cam-faces  $f$ , the arrangement being such that when the lever F is moved upward about one hundred and eighty degrees the cam-faces  $f$ , acting against the plate G, will draw back the locking-rack C, so that the teeth  $c^2$  thereon will be opposite the smooth portion  $b^4$  of the handle-bar ends and the teeth  $b^3$  on the handle-bar ends will be opposite the smooth portions  $c$  of the locking-rack C against the tension of the spring  $d^6$ , which constantly tends to throw the rack C inward or to the left on Fig. 5. When the lever F is raised to its highest point, the handle-bars B B' may be adjusted at will. In this position owing to the shape of the faces  $f$  the spring  $d^6$  tends to lock the lever; but after the lever F is turned partly down the spring tends to force the rack C inward, and it will do this unless the teeth on the rack strike the teeth on the ends of the handle-bars, in which case the latter must be moved up or down a short distance, when the rack will be snapped into engagement with the ends of the handle-bars and will lock them.

It is obvious that many changes might be made without departing from the spirit of our invention, and we wish it to be expressly understood that we do not limit ourselves to the exact details shown and described.

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

1. The combination with a stem and handle-bar head, of handle-bars provided with ends having gear-teeth of different lengths upon them, locking means and means for moving said locking means into and out of engagement with the short gear-teeth on the handle-bar ends, substantially as described.

2. The combination with a stem and handle-bar head, of handle-bars each provided with an end having long and short gear-teeth thereon, a locking-rack provided with gear-teeth, means for moving said rack into and

out of engagement with the handle-bars and means for holding the rack, when in engagement with said handle-bars, substantially as described.

3. The combination with a stem and handle-bar head, of handle-bars provided with long and short gear-teeth, a locking-rack provided with gear-teeth, a spring-operated lever for moving said rack into engagement with said handle-bars and means for moving said rack against the tension of said spring, substantially as described.

4. The combination with a stem and handle-bar head, of handle-bars having long and short gear-teeth, a locking-rack provided with gear-teeth, a spring-operated lever engaging said rack, a pin secured to said rack and an operating cam-faced handle, substantially as described.

5. The combination of a stem, a handle-bar head, handle-bars provided with long and short gear-teeth, a perforated locking-rack provided with gear-teeth, a bell-crank lever, an arm provided with a stop, a spring, a pin secured to said rack and a handle provided with cam-faces, substantially as described.

6. A handle-bar having one end nearly circular in shape, the handle-bar being cut away near the end to form shoulders and re-entrant angles, said end being perforated and provided with long gear-teeth on one edge, short gear-teeth on the other edge, a second set of short gear-teeth in proximity to the long gear-teeth, said sets of short gear-teeth being separated by a smooth portion, substantially as described.

7. A locking-rack having a flat top and bottom and interposed oppositely-arranged arc-shaped concave portions provided with gear-teeth, substantially as described.

In testimony whereof we affix our signatures in presence of witnesses.

JOSEPH D. KING.  
MATTHEW A. BURNS.

Witnesses:

HENRY W. PACKER,  
JAMES D. QUIMBY.