

(No Model.)

H. M. HART.
BICYCLE LOCK.

No. 599,284.

Patented Feb. 15, 1898.

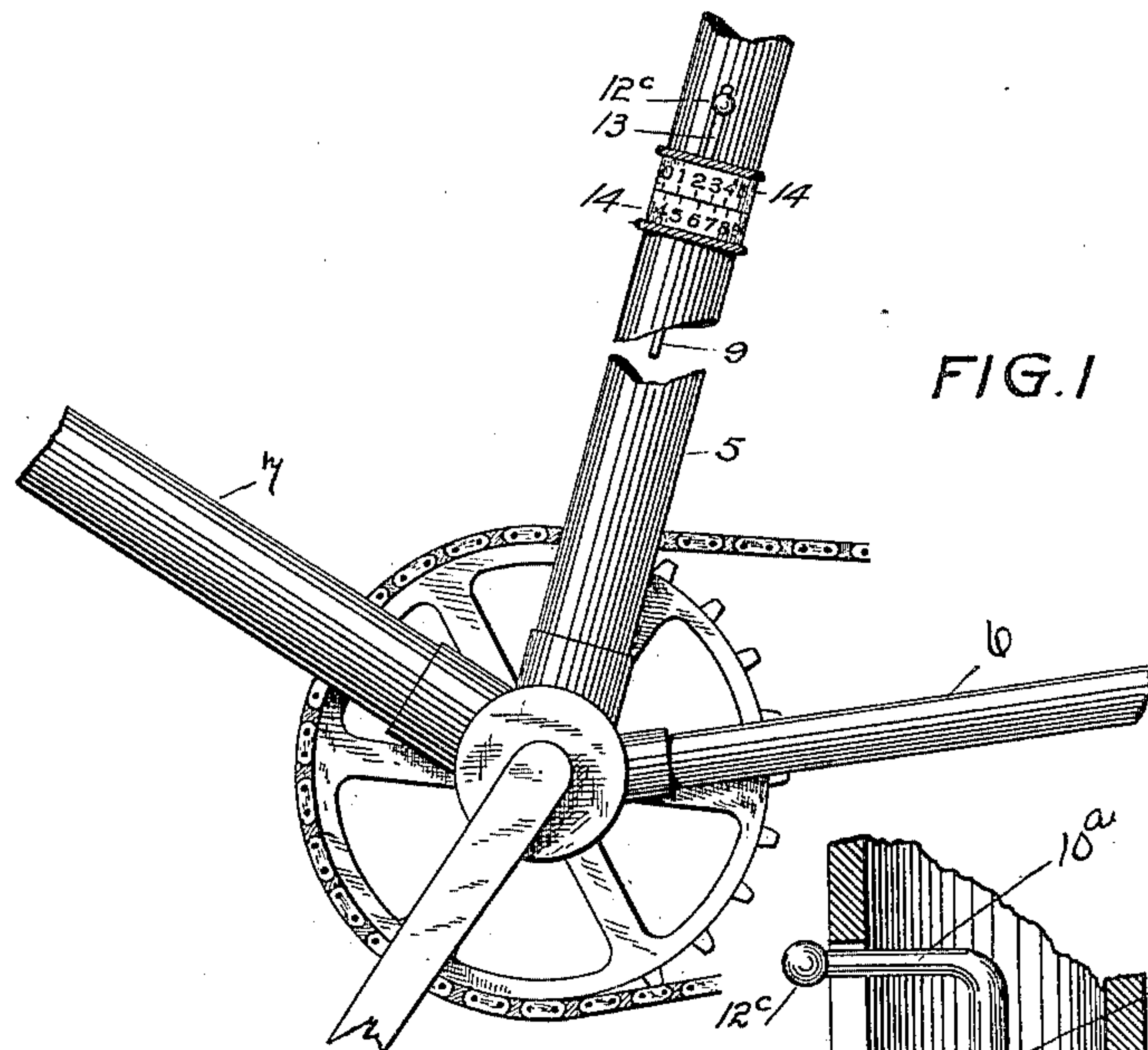


FIG. 1

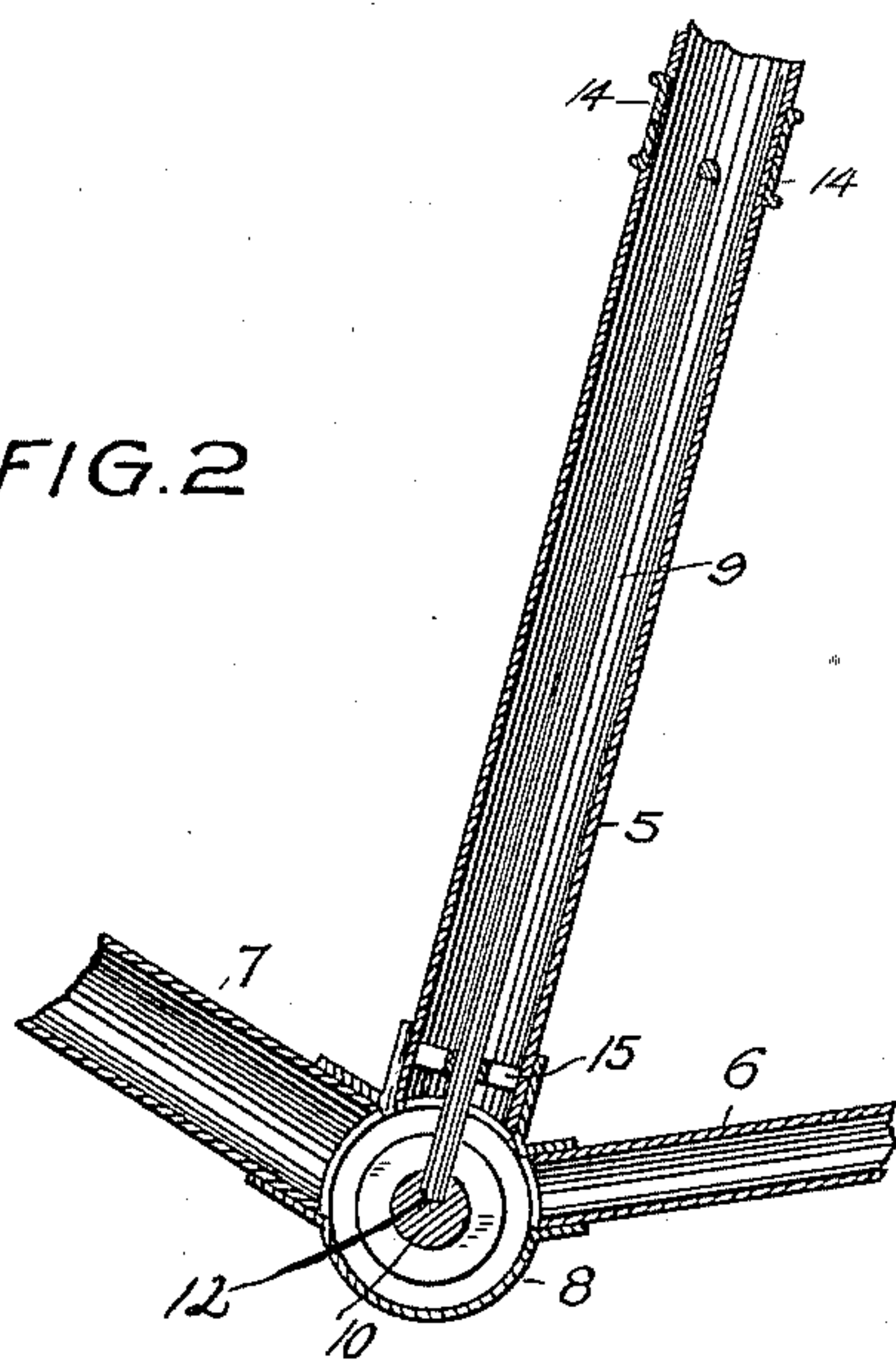


FIG. 2

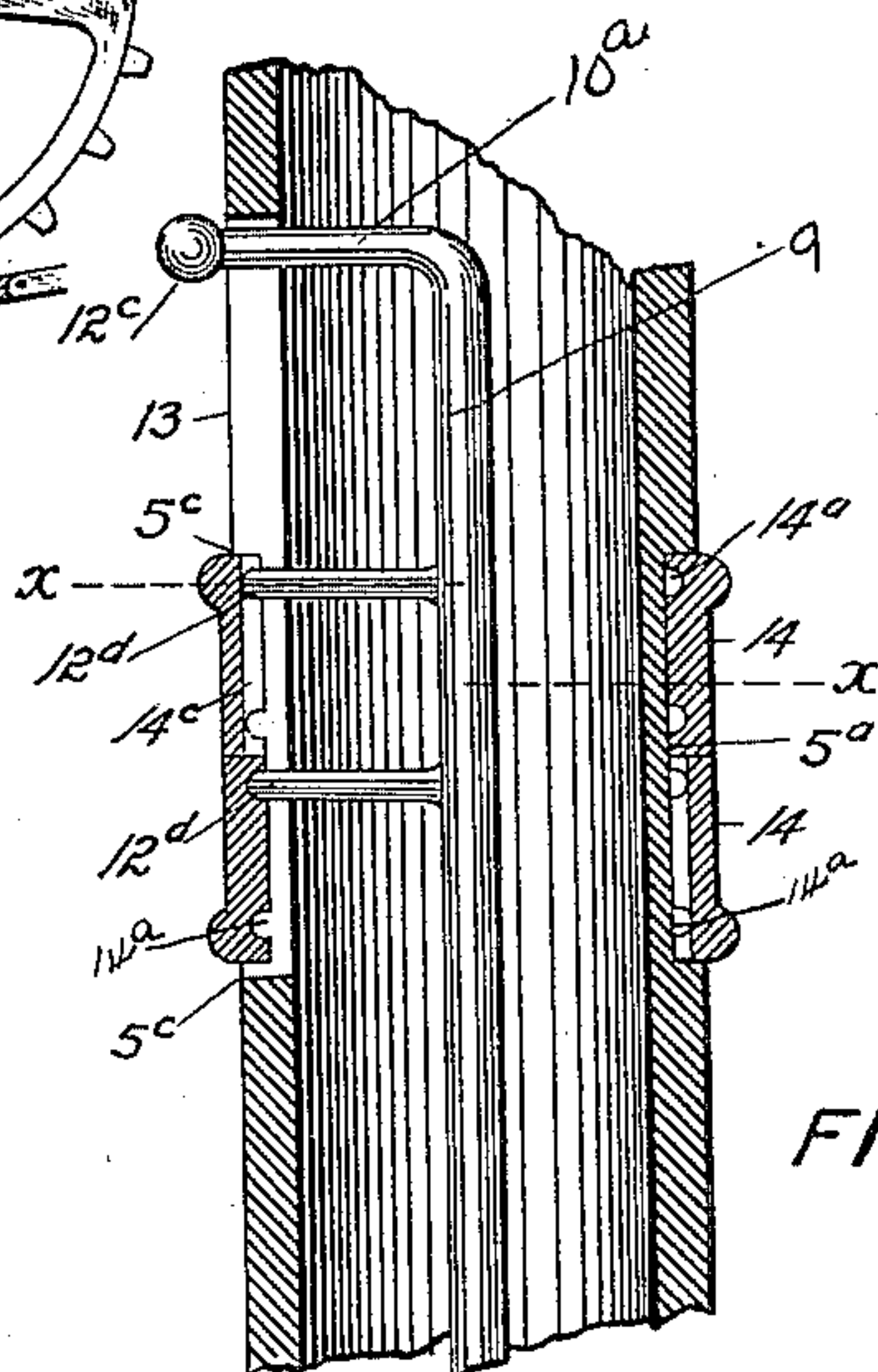


FIG. 3

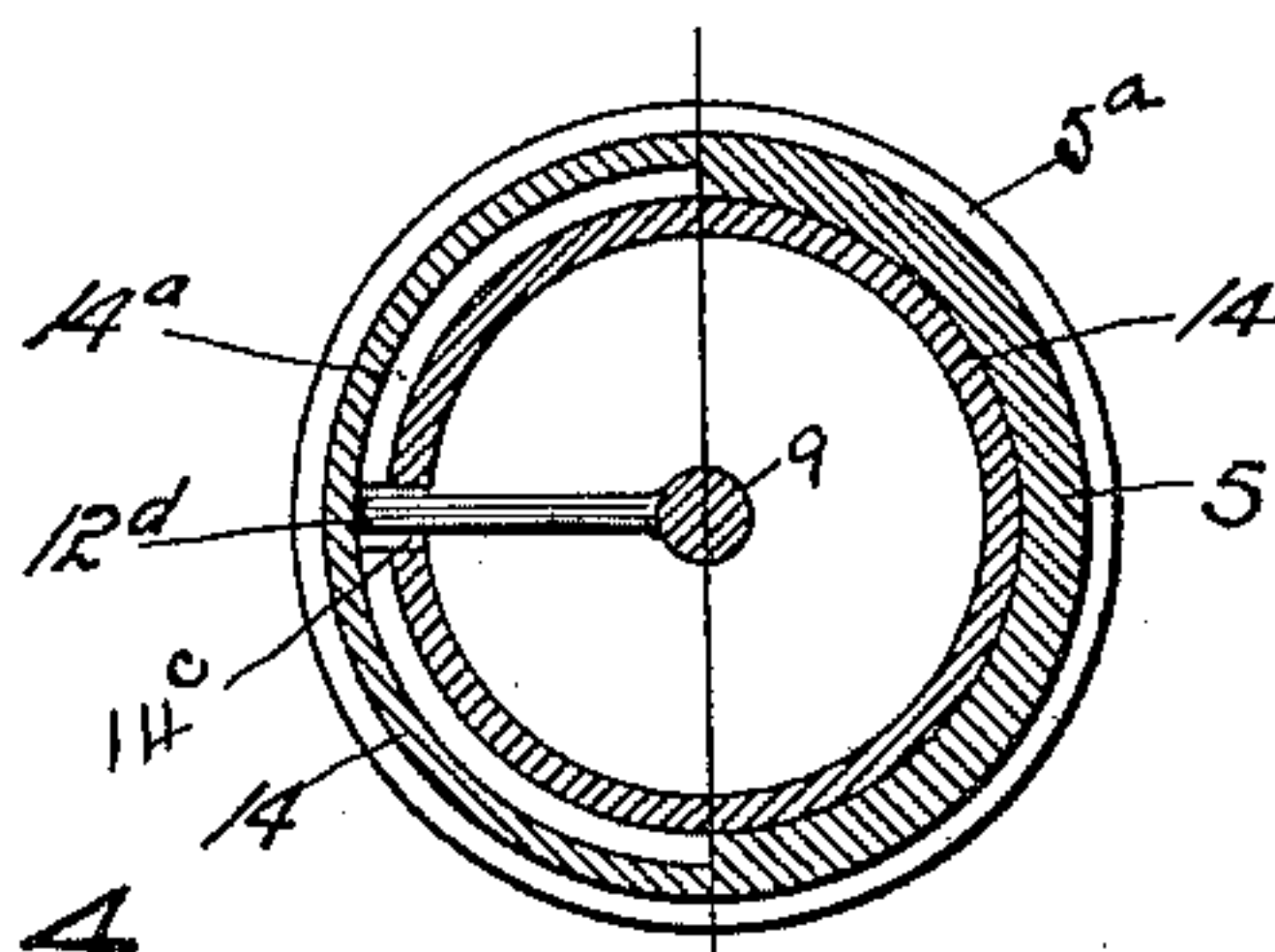


FIG. 4.

Witnesses
~~J. J. Gaudet.~~
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H. M. Hart.
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UNITED STATES PATENT OFFICE.

HENRY MARTYN HART, OF DENVER, COLORADO.

BICYCLE-LOCK.

SPECIFICATION forming part of Letters Patent No. 599,284, dated February 15, 1898.

Application filed May 1, 1897. Serial No. 634,714. (No model.)

To all whom it may concern:

Be it known that I, HENRY MARTYN HART, a subject of the Queen of Great Britain, residing at Denver, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Bicycle-Locks; and I do 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, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in bicycle-locks, my object being to provide a simple and efficient device of this class specially adapted to be put on the machine by the manufacturer, and which, when applied, is practically concealed from view.

My improved lock does not to any appreciable degree increase the weight of the machine, and by reason of its concealed position is not likely to become disarranged or get out of repair.

The invention consists of the features hereinafter described and claimed, all of which will be fully understood by reference to the accompanying drawings, in which is illustrated an embodiment thereof.

In the drawings, Figure 1 is a fragmentary elevation of a bicycle equipped with my improved lock. Fig. 2 is a section taken through the frame, showing the lock in place. Fig. 3 is a section showing the device unlocked, the parts being shown on a larger scale. Fig. 4 is a section taken on the broken line *xx*, Fig. 3.

Similar reference characters indicating corresponding parts in the views, let the numerals 5, 6, and 7 designate the frame-bars, connected with the center bearing 8 of the bicycle-frame. My improved lock is connected with the bar 5, which also receives the post of the saddle. (Not shown.) In this bar 5, which is hollow, is located a rod 9, whose lower extremity is adapted to enter a recess 12, formed in the crank shaft or axle 10. The upper extremity 10^a of this rod is bent at right angles to the body of the rod and protrudes through a slot 13, formed in the tubular bar 5, and terminates in a small knob 12^c, adapted to be grasped in adjusting the rod. This rod

is also provided with a number of projections 12^d, forming wards which also protrude through the slot 13 in the bar and normally engage circular grooves 14^a, formed in rings 14, which are located in a circular recess 5^a, formed in the bar 5. These rings are adapted to turn freely on the bar, but cannot move up or down in either direction, since they engage shoulders 5^c on the bar. Each ring 14 is provided with a vertical groove 14^c, or a groove formed at right angles to its circular grooves 14^a. The grooves 14^c are constructed to receive the extremities of the wards 12^d of the locking-rod. When these rings are adjusted to cause the grooves 14^c of the several rings to register or coincide with each other, the rod may be moved up or down at pleasure for the purpose of unlocking or locking the bicycle.

While two rings are shown in the drawings, it is evident that any desired number of these rings may be employed. They are graduated and numbered. (See Fig. 1.) Any suitable or desirable characters other than numerals may, of course, be employed on these rings. The rings are so arranged that when certain figures or characters register or coincide as to position the grooves 14 will register and the rod may be moved, as heretofore explained. At all other times the rod is locked from movement. It will thus be seen that this is a sort of permutation-lock whose "combination" is known only to the owner of the bicycle or such others as he may inform.

It is evident that by increasing the number of rings or the number of numerals or other characters on each ring or by resorting to both of these expedients the combination may be made as intricate or complicated as may be desired.

The upper extremity of the locking-rod is guided by the slot 13 in the tubular bar, while the lower portion of said rod passes through an aperture in a guide 15, formed in the tube 5 just above the center bearing 8.

The use of my improved lock will be readily understood from the foregoing description. While riding the wheel, the locking-rod is raised to the position shown in Fig. 3 and one of the rings is moved so that the grooves 14^c shall not coincide or register. The rod will then be supported in the raised position

and the crank-shaft is free to rotate. When, however, the rider dismounts and is about to leave his machine, he adjusts the rings 14 so that the grooves 14^c shall register or are in line with each other and with the wards on the rod. The wards 12^d of the locking-rod are then free to move downward in said grooves and the rod will drop to the position shown in Fig. 3. The arrangement of the parts will be such that when the pedal-cranks are in a certain predetermined position the recess in the axle will register with the aperture in the disk 15, through which the rod passes—as, for instance, when the cranks occupy a vertical position, since they are then on what is termed a “dead-center,” and a person in position on the saddle would have no leverage on the cranks. Hence as soon as the rider turns the cranks to this position and adjusts the rings 14 the rod will drop into place and lock the crank-shaft against movement. He will then adjust the rings 14 to throw the grooves 14^c out of line, after which the rod cannot be unlocked until the rings are again adjusted, as heretofore explained.

Each ring 14 must have two circular grooves 14^a—one to engage the corresponding ward extremity when the locking-rod is at its lowest limit of movement and the other to engage the said ward extremity when the said rod is at its highest limit of movement. Hence when the locking-rod is in either of the two positions either or both rings may be turned at will for the purpose of securing or holding the rod in the locked or unlocked position, as the case may be.

It is evident that my improved lock will be operative whether a single ring or a plurality of rings 14 be employed. Whether one or more rings be employed, they must be adjusted with reference to some mark on the stationary frame-bar in suitable proximity to the rings.

Having thus described my invention, what I claim is—

The combination with the bicycle-frame and the crank shaft or axle having a recess, of a rod located in one of the frame-bars connected with the center bearing, and adapted to enter the recess in the said shaft, the upper extremity of the rod being bent at right angles to the body of the rod and protruding through a slot in the bar to permit adjustment, one or more rings surrounding the slotted portion of the bar, each ring having two circular grooves, and a straight groove connecting the circular grooves, the said rings being fixed against longitudinal movement on the bar, the rod being also provided with one or more right-angular projections forming wards which engage the slot in the bar and the grooves in the rings, the bar-slot extending above the rings to permit the rod the necessary movement, and a suitable rod-guide located within the tubular frame-bar.

In testimony whereof I affix my signature in presence of two witnesses.

HENRY MARTYN HART.

Witnesses:

G. J. ROLLANDET,
EDITH HIMSWORTH.