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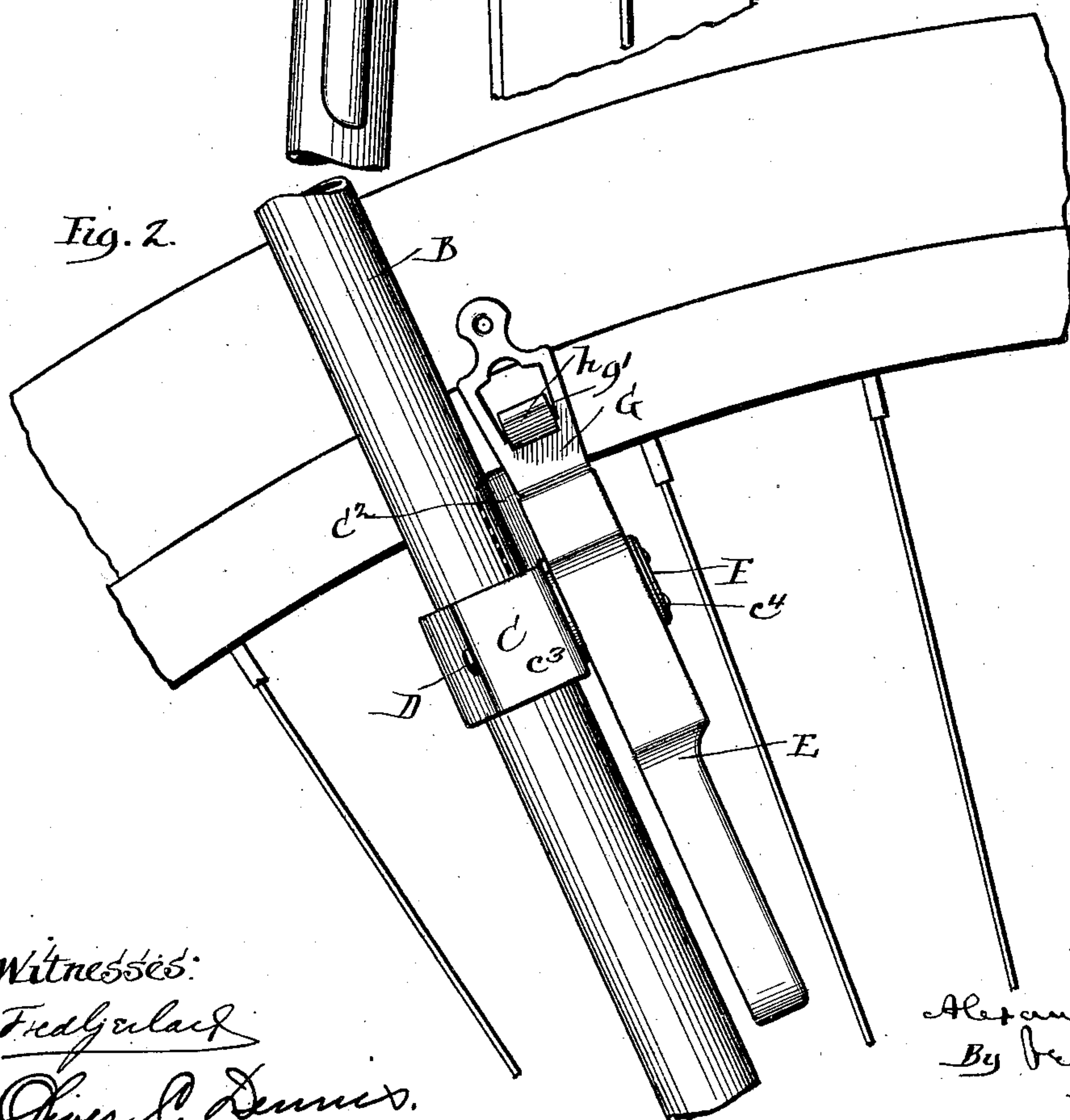
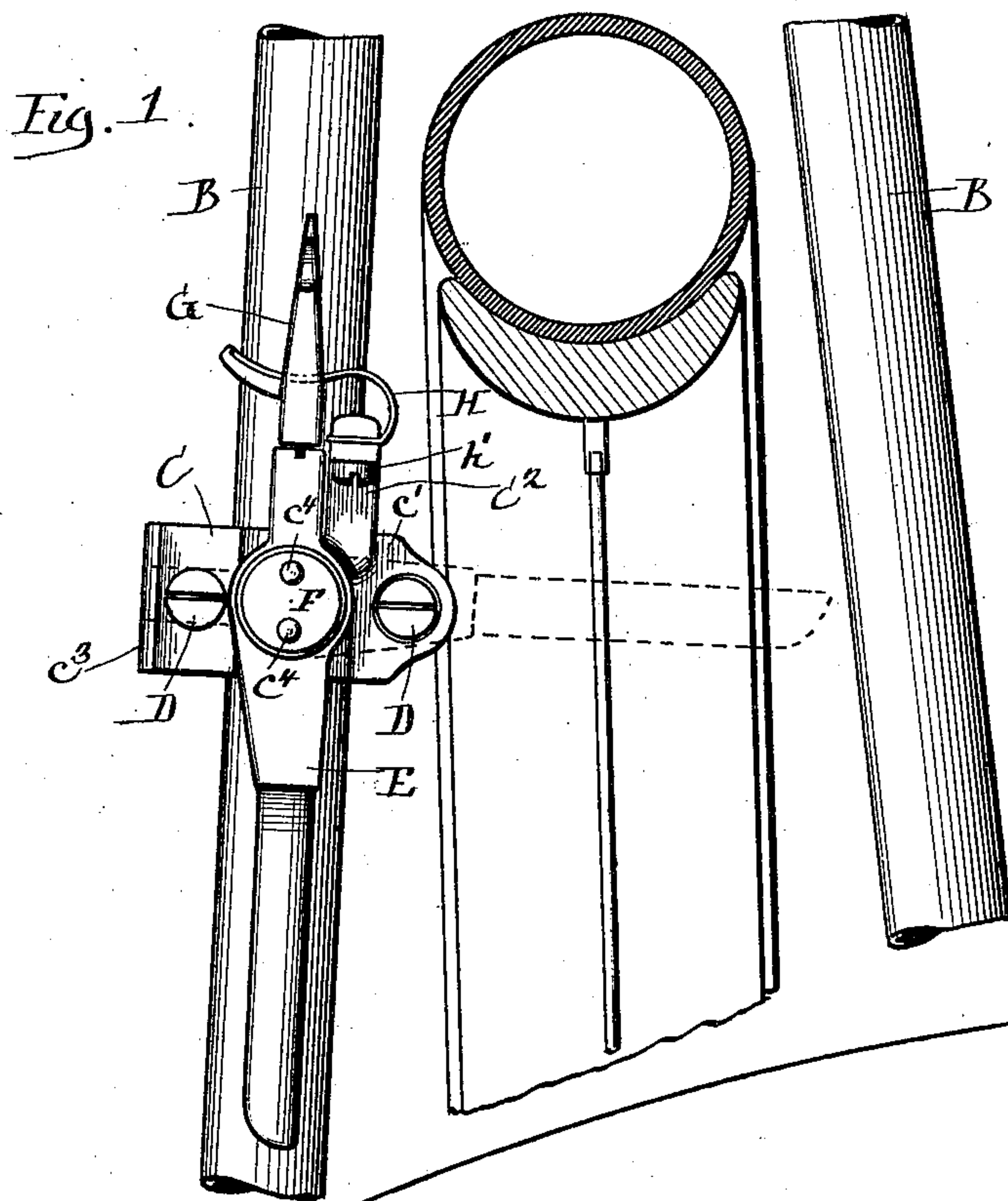
2 Sheets—Sheet 1.

A. KOCH.

LOCK OR GUARD FOR WHEELS OF VEHICLES.

No. 599,848.

Patented Mar. 1, 1898.



Witnesses:

Fred Gulick

Oliver P. Dennis.

Inventor:

Alexander Koch.
By *Bein Fisher*
Attorneys.

(No Model.)

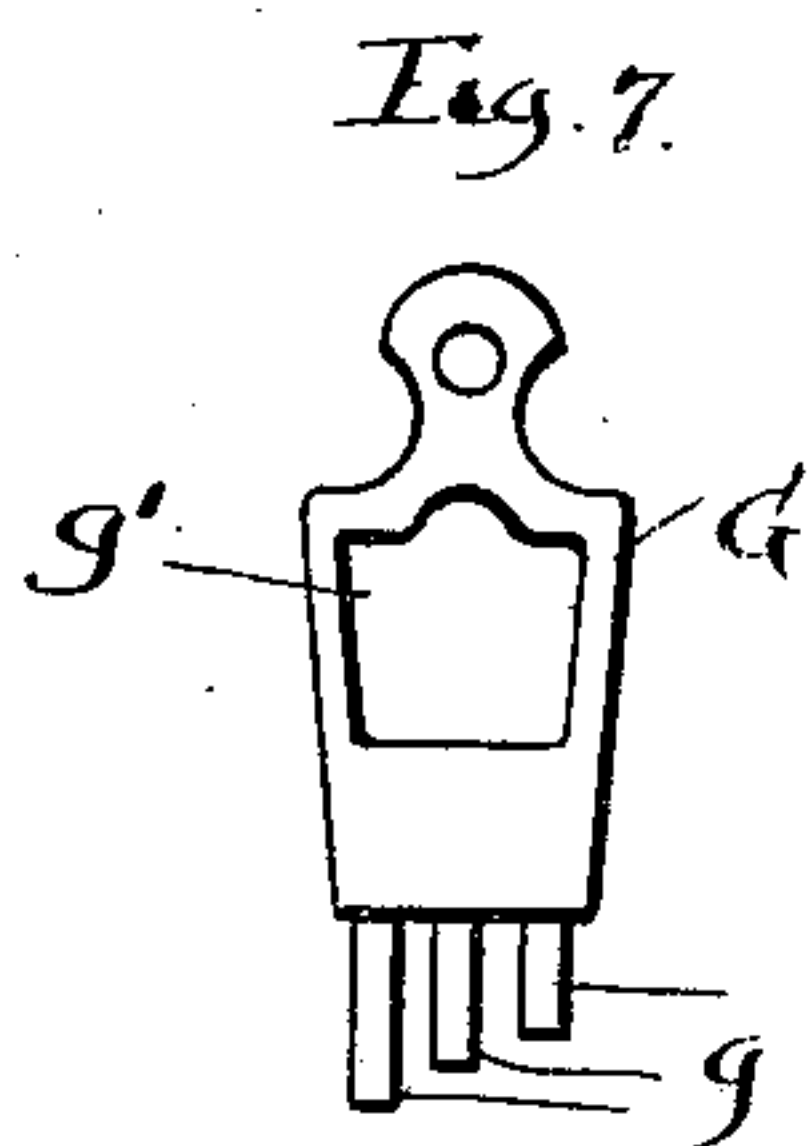
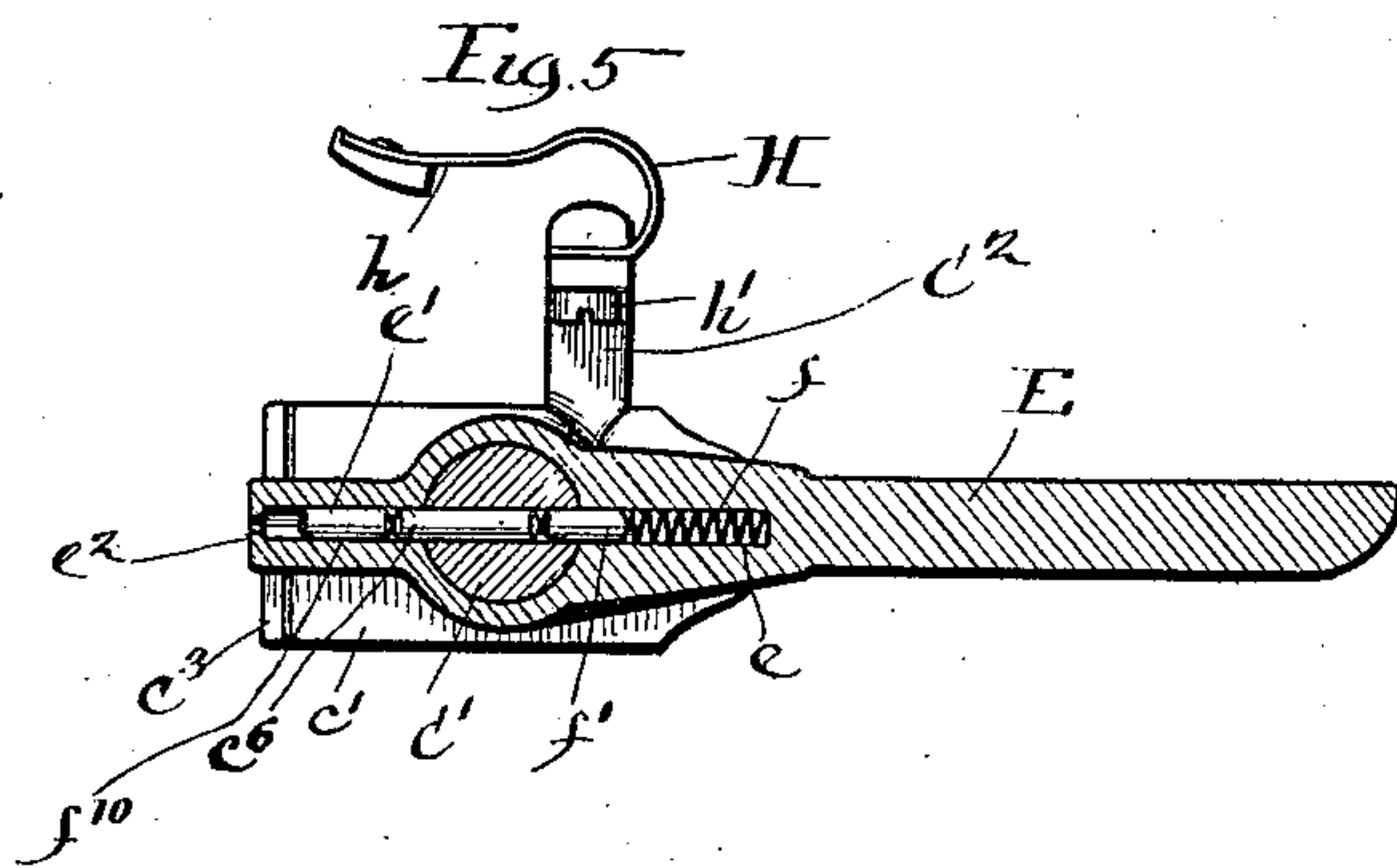
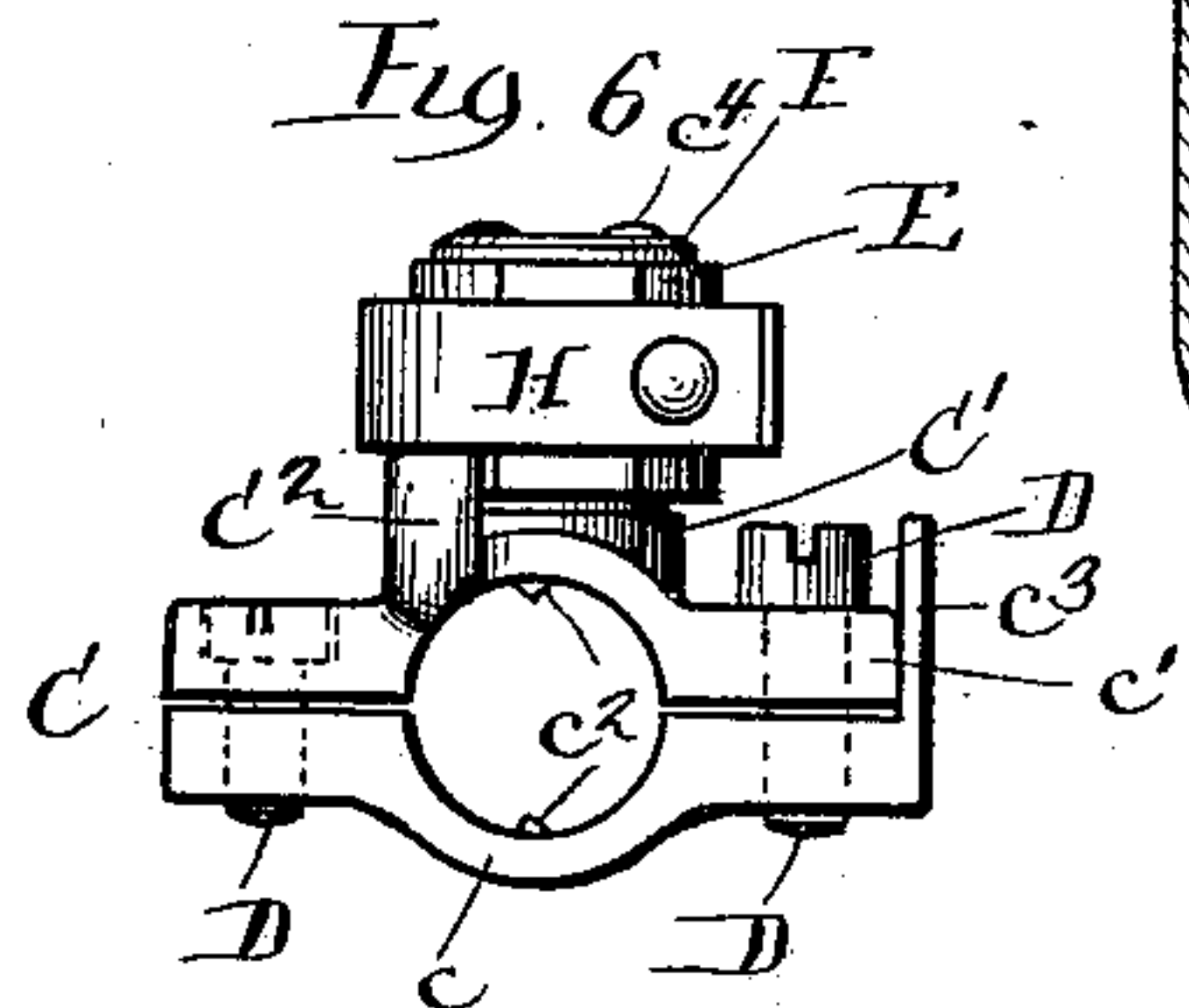
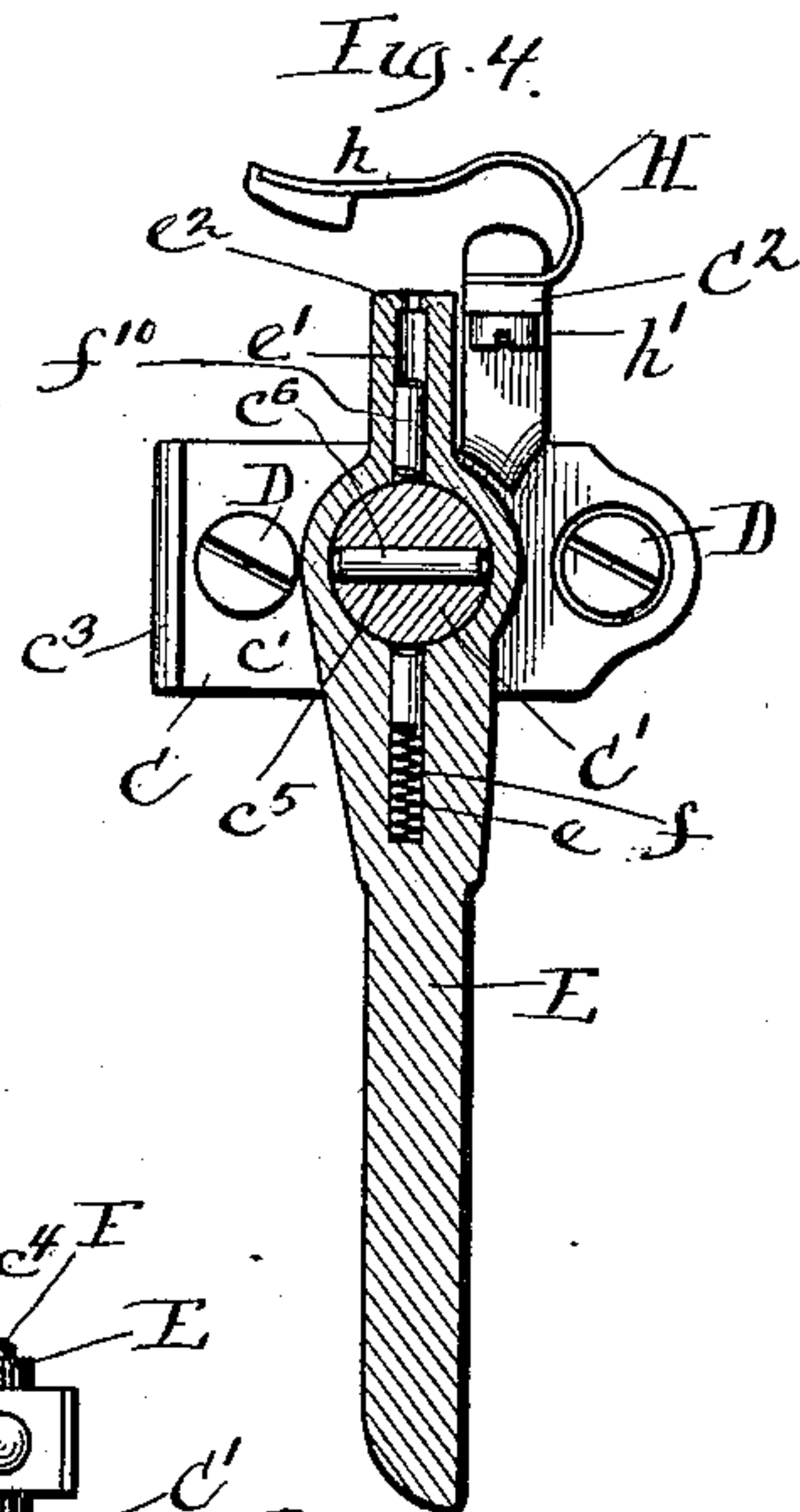
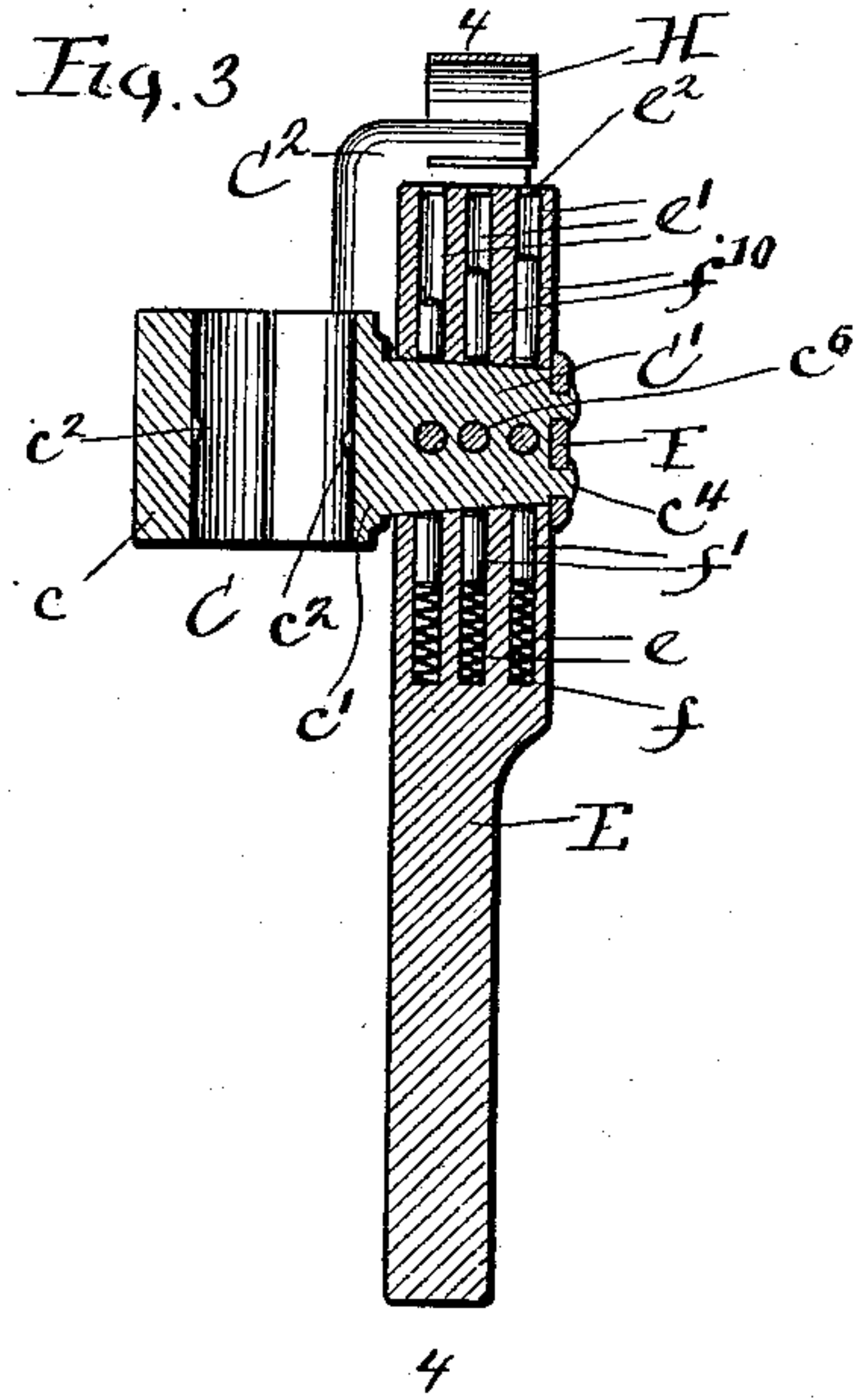
2 Sheets—Sheet 2.

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Witnesses:

Fredrick

Oliver Q. Dennis.

Inventor.

Alexander Koch.

By Beine Fisher
Attorneys.

UNITED STATES PATENT OFFICE.

ALEXANDER KOCH, OF VIENNA, AUSTRIA-HUNGARY, ASSIGNOR OF THREE-FOURTHS TO EGBERT W. GILLET AND IRA H. BROWN, OF CHICAGO, ILLINOIS.

LOCK OR GUARD FOR WHEELS OF VEHICLES.

SPECIFICATION forming part of Letters Patent No. 599,848, dated March 1, 1898.

Application filed May 21, 1897. Serial No. 637,510. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER KOCH, residing at Vienna, Austria-Hungary, have invented certain new and useful Improvements in Locks or Guards for the Wheels of Vehicles, of which I do declare the following to be a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

10 The present invention has for its object to provide a simple, cheap, light, and durable construction of lock or guard, whereby the wheels of bicycles or like vehicles may be securely locked, so that all danger of their being used except by the person holding the key is avoided.

15 With this object in view my invention consists in the novel features of construction hereinafter described, illustrated in the accompanying drawings, and particularly pointed out in the claims at the end of the specification.

20 In the accompanying drawings I have illustrated what I regard as the preferred embodiment of my invention; but it will be understood that the precise details of construction illustrated and hereinafter described may be varied within wide limits without departing from the scope of the invention.

25 Figure 1 is a rear view showing a portion of a velocipede frame and wheel with my improved lock or guard attached thereto. Fig. 2 is a side view of the part shown in Fig. 1. Fig. 3 is a view in vertical longitudinal section. Fig. 4 is a view in section on line 4 4 of Fig. 3. Fig. 5 is a similar view showing parts in locked position. Fig. 6 is a plan view. Fig. 7 is a detail view of the key.

30 To one of the hind forks B of the bicycle-frame is attached the coupling C, that consists of two parts *c* and *c'*. Each of the parts or sections *c* and *c'* of the coupling is formed with a concaved seat and is preferably provided with a pin *c²*, adapted to embed itself more or less in the metal frame or fork B and thus hold the coupling against turning upon the fork or frame. If the bar of the fork or frame to which the lock or guard is attached be of irregular or polygonal outline, 45 a corresponding shape will be given to the

inner face of the coupling-sections *c* and *c'*, and in such case the pins need not be used. Through the ends of each of the coupling-sections *c* and *c'* are formed holes to receive the retaining-screws D, whereby the sections 55 are united together, and preferably the section *c* of the coupling is formed with an up-turned end or lip *c³*. The section *c'* of the coupling C has cast in piece therewith the stud or boss C', upon which is pivotally 60 mounted the guard-arm E, this guard-arm being formed with an opening, through which the stud or boss C' passes, as clearly shown in Figs. 3 and 4 of the drawings. In order to retain the guard-arm in position upon the 65 stud or boss C', a plate F is set over the pins *c⁴*, that project from the end of the stud or boss C', the heads of these projecting pins being upset or riveted, so as to securely retain the plate F in position and thus hold the 70 guard-arm in place.

By reference to Fig. 1 of the drawings it will be seen that when the guard-arm E is in the unlocked or idle position shown the screws D are exposed; but when the guard-arm is 75 turned to the locked position (shown by dotted lines in Fig. 1) it swings over the heads of the screws D and thus prevents the screws being tampered with or removed. The guard-arm E is formed at one side of the stud or 80 boss C' with a series of long holes *e*, and upon the opposite side of the hub the guard-arm is formed with a similar series of holes *e'*, and these holes *e* and *e'* of the guard-arm are arranged in such manner as to coincide with the 85 holes *c⁵*, that are formed in the stud or boss C', when the guard-arm is turned to the locked position. Within the holes *e* are arranged the coiled springs *f*, upon which rest the bolts *f'*, the springs *f* tending to throw 90 the bolts normally outward into position to engage with the holes of the stud or boss C' when the holes *e* of the guard-arm are brought coincident with the holes *c⁵* of the stud or boss C'. In the holes *c⁵* are placed the bolts *c⁶*, 95 which are of about the same diameter as the stud or boss C', and in the outer holes *e'* of the guard-arm are placed a series of tumblers *f¹⁰*, that are retained in position by shoulders *e³* at the outer ends of the holes *e'*. 100

When the guard-arm is in the locked position, (shown by dotted lines in Fig. 1 of the drawings,) the holes e , e' , and e'' will be coincident, and the coil-springs f will have forced
 5 the bolts f' into the adjacent ends of the holes e'' of the stud or boss, thereby shifting the bolts c'' and causing these bolts to enter the adjacent ends of the holes e' . Hence it will
 10 be seen that the guard-arm E will be securely retained in locked position, and while in such position the wheel A of the vehicle cannot be turned.

It will be observed that the tumblers f^{10} within the holes e' are of different lengths,
 15 and consequently to simultaneously force inward all the bolts it will be necessary to employ a key G, having arms g corresponding to the difference in the lengths of the tumblers f^2 . When the guard-arm is to be released, the arms g of the key G will be inserted into the holes e' and the tumblers f^{10}
 20 will be forced inward, thereby depressing the bolts c'' and the bolts f' until the bolts c'' are entirely within the holes e'' of the stud or boss
 25 C' and until the bolts f' are entirely within the holes e , and when the bolts are thus depressed the guard-arm E can be turned to the unlocked position. (Shown by full lines in Fig. 1 of the drawings.) It will be understood, of
 30 course, that by varying the lengths of the tumblers f^{10} the character of the keys can be correspondingly varied, so that no two locks can be operated by the same key.

In order to retain the key G normally in
 35 place and in readiness for use, I prefer to form the key G with an opening g' , through which will pass the end h of a spring-latch H, that is connected by a screw h' to an angular arm C², that projects from and is formed in piece
 40 with the coupling C. Hence it will be seen that when the guard-arm E is turned from the locked position shown by dotted lines to the unlocked position shown by full lines in Fig. 1 the end h of the spring-latch will pass
 45 through the opening g' of the key, and the shoulder at the end of the spring-latch will securely retain the key with its arms g in position within the hole e' of the guard-arm.

When the guard-arm E is to be turned from
 50 the unlocked to the locked position, the spring-arm H will be raised, so that its end will pass from engagement with the key G. It will thus be seen that the spring-arm H not only retains the key in position, but also serves
 55 to hold the guard-arm in its unlocked position.

I wish it distinctly understood that while I have described what I regard as the preferred embodiment of my invention various changes in the details of construction may be
 60 made by the skilled mechanic without departing from the spirit of the invention, and I do not wish the invention therefore to be understood as restricted to the precise details of construction shown.

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

1. A lock or guard comprising a support having means whereby it may be attached to a part of the vehicle-frame, a boss or stud
 70 projecting from said support, a guard-arm provided with a hub encircling said boss or stud and provided with a chambered offset at one side of said hub and means for locking
 75 said hub to said boss or stud, substantially as described.

2. A lock or guard comprising a support provided with means whereby it may be attached to the vehicle-frame, a chambered
 80 boss or stud projecting from said support, a guard-arm provided with a hub for encircling said boss or stud and with a chambered offset at one side of said hub, and a series of bolts and tumblers for locking said guard-arm to said boss or stud, openings being
 85 formed in the offset to admit a key for controlling said tumblers, substantially as described.

3. A lock or guard comprising a support provided with means whereby it may be attached to the vehicle-frame, a guard-arm piv-
 90 otally connected to said support and having a free end adapted to enter between the spokes of a wheel, lock mechanism interposed between said guard-arm and the support, a key
 95 for controlling said lock mechanism and a latch for engaging the key and retaining it within the lock when the guard-arm is in unlocked position, substantially as described.

4. A lock or guard comprising a support
 100 provided with means whereby it may be attached to the vehicle-frame, a guard-arm pivotally connected to said support and having a free end adapted to enter between the spokes
 105 of a wheel, lock mechanism interposed between said guard-arm and the support, a key for controlling said lock mechanism and a spring-latch for engaging the key and retaining it within the lock when the guard-arm is in unlocked position, substantially as de-
 110 scribed.

5. A lock or guard comprising a support provided with means whereby it may be attached to the vehicle-frame, a guard-arm piv-
 115 otally connected to said support and having a free end adapted to enter between the spokes of the wheel, an offset on said guard-arm provided with openings to receive a key, a key provided with an opening adapted to receive
 120 a latch and a spring-actuated latch mounted upon the support and arranged to engage the opening in the key and retain the key within the lock when the guard-arm is in unlocked position, substantially as described.

ALEXANDER KOCH.

Witnesses:

RAPHAEL H. BRANDON,
 EDWARD P. MACLEAN.