

(No Model.)

T. J. HOUGHTON.  
VEHICLE POLE TIP.

No. 510,022.

Patented Dec. 5, 1893.

Fig: 1

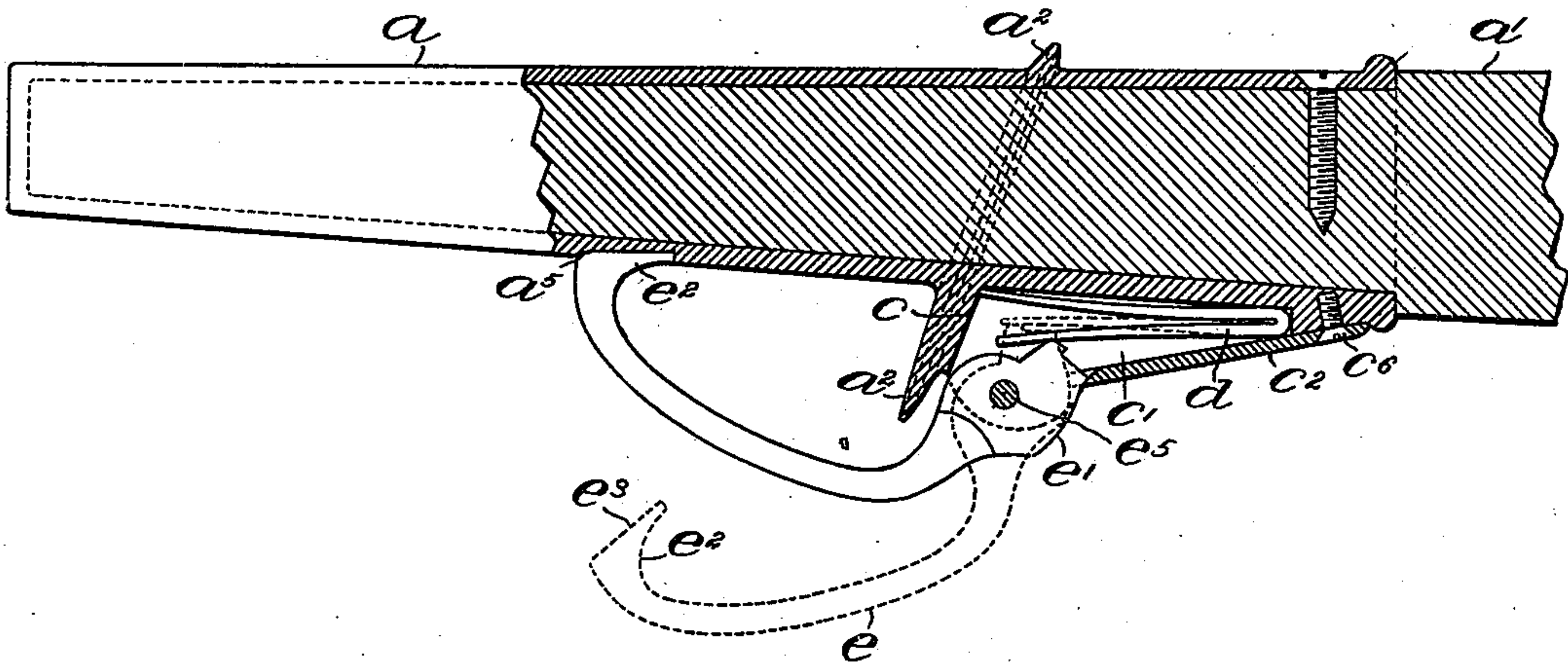


Fig: 2

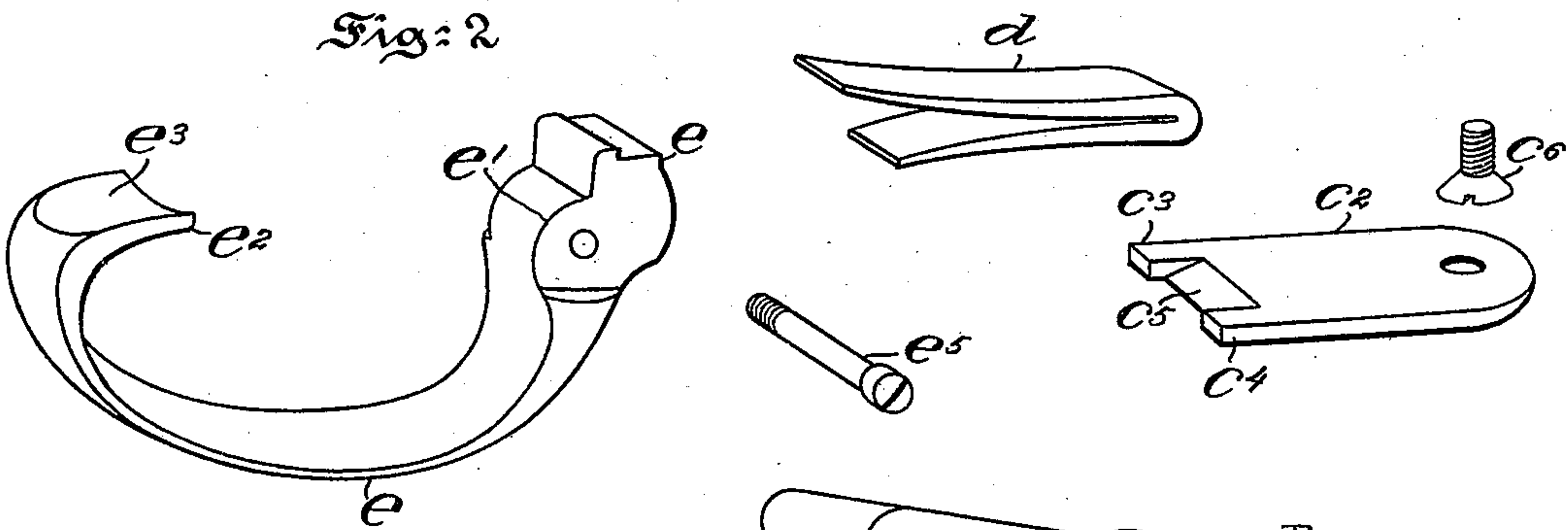
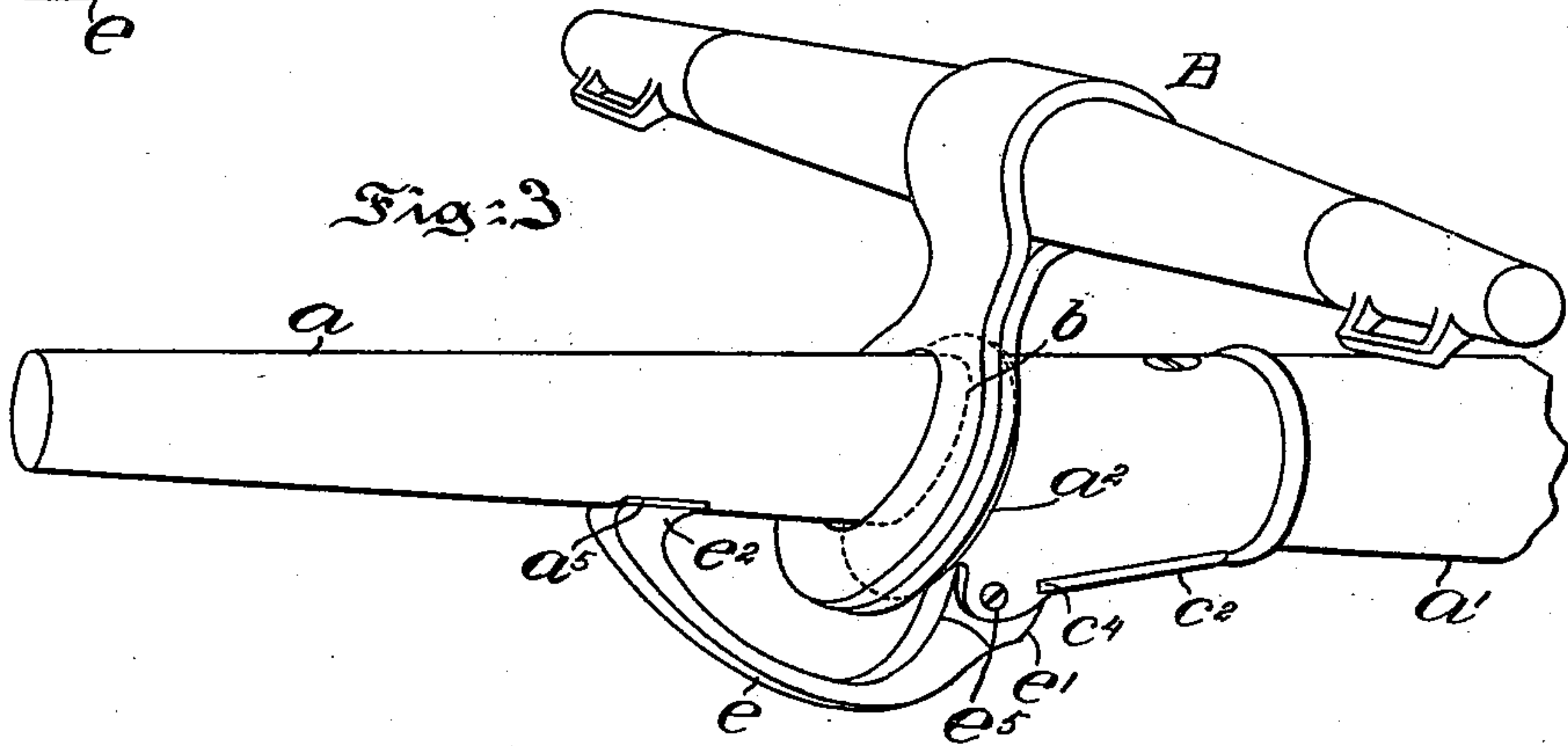


Fig: 3



Witnesses:  
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# UNITED STATES PATENT OFFICE.

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## VEHICLE-POLE TIP.

SPECIFICATION forming part of Letters Patent No. 510,022, dated December 5, 1893.

Application filed June 21, 1893. Serial No. 478,357. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS J. HOUGHTON, a citizen of the United States, residing at Lancaster, in the county of Lancaster and State of Pennsylvania, have invented certain new and useful Improvements in Vehicle-Pole Tips, of which the following is a specification.

My invention has relation to vehicle pole-tips; and more particularly to that class known as safety pole-tips and in this respect to the simplifying of the construction and arrangement of such a tip, for which United States Letters Patent were granted to me, No. 481,791, dated August 30, 1892.

The principal objects of my invention are first, to provide a simple, positive-action, efficient and inexpensive vehicle pole-tip; second, to provide a vehicle pole-tip for supporting the neck yoke in position thereto by means of a spring controlled trigger or curved clip or retaining hook, whereby slipping of the yoke or detachment thereof is absolutely prevented until the clip or hook is caused to assume its abnormal position.

My invention consists of a vehicle pole-tip provided with a collar having a chamber arranged in the rear thereof with a detachable tongued plate or cap provided with an integral recessed cam-shaped device engaging an inverted V or similar shaped spring and with a foot engaging a recess or seat in the surface of the tip, the construction being such as that said clip or retaining hook is maintained in its normal or locked position in contact with the tip under a spring tension with the apex of the recessed cam-shaped device in contact with the spring and susceptible of being readily released therefrom and maintained in abnormal or open position by the rear face of the cam-shaped device assuming a position in contact with said spring.

My invention further consists of the improvements in vehicle pole-tips hereinafter described and claimed.

The nature, characteristic features and scope of my invention will be more fully understood from the following description taken in connection with the accompanying drawings forming part hereof, and in which—

Figure 1, is a view partly in elevation and

partly in section of a vehicle pole-tip embodying the particular characteristic features of my invention, with the curved clip or hook shown under spring tension in normal and abnormal positions. Fig. 2, represents in perspective the several parts of the device of my invention detached from the pole-tip and illustrating the particular construction and arrangement thereof; and Fig. 3, is a perspective view of the pole-tip of my invention with a neck-yoke shown in application thereto and with the retaining hook or spring controlled trigger or curved clip in its normal or locked position.

Referring to the drawings *a*, is a pole-tip secured or otherwise applied to a pole *a'*, as illustrated in broken cross-section in Fig. 1, and provided with a slanting collar *a<sup>2</sup>*, forming the back-stop of the tip for limiting the range of to and fro movement of the loop *b*, of the neck-yoke B thereon, as illustrated in Fig. 3.

*c*, is an oblong chamber or channel in rear of the collar *a<sup>2</sup>* and provided with side walls *c'*, and with a detachable plate *c<sup>2</sup>*, having tongues *c<sup>3</sup>* and *c<sup>4</sup>* and a tapering recessed end surface *c<sup>5</sup>*, for a purpose to be presently fully explained. This cover-plate *c<sup>2</sup>*, is secured to position in contact with the walls of the chamber *c*, by means of a tightening screw *c<sup>6</sup>*.

*d*, is a transversely disposed inverted V or similar shaped spring which is mounted in the chamber or channel *c*.

*e*, is a curved clip or retaining hook provided with a rear integral recessed cam shaped end *e'*, pivotally connected with the walls *c'*, of the chamber *c*, by means of a screw or stud-bolt *e<sup>5</sup>*. This curved clip or retaining hook *e*, is provided with a front foot *e<sup>2</sup>*, having a recessed face *e<sup>3</sup>*, as illustrated in Fig. 2. The spring *d*, is loosely mounted in the chamber *c*, with one extremity or surface thereof in engagement with the surface or rear wall of the channel or chamber *c*, and with the other in engagement with the notched or recessed cam-shaped end *e'*, of the curved clip or retaining hook *e*. This clip or hook *e*, is maintained in its normal or locked position by means of one of the leaves of the spring *d*, engaging with the apex of the cam-shaped device thereof adjacent to the notched



or recessed portion of the same, with sufficient pressure to positively retain the foot of the clip or hook *e*, firmly in contact with the recess or seat *a*<sup>5</sup>, formed in the surface of the pole-tip *a*, as illustrated in Fig. 1, thereby preventing the detachment of the loop *b*, of the neck-yoke *B* from the pole-tip in the event of accident to such members of harness as might cause the traces thereof to become detached from the single-trees of the pole *a*', and in such manner as to cause the pole to be precipitated to the ground by release of the neck-yoke ring or loop from its engagement with the pole. The construction and arrangement of the spring *d*, in the chamber *c*, are such as that when the clip or hook is caused to assume an abnormal or open position as illustrated in dotted lines in Fig. 1, the cam-shaped end of the clip or hook will occupy a position in contact with the rear surface thereof, as shown in dotted lines in Fig. 1, and with the lower portion of the same in contact with the recessed portion *c*<sup>5</sup>, of the cover-plate *c*<sup>2</sup>, which forms a retaining seat therefor.

Among the advantageous features of the device of my invention as hereinbefore described may be mentioned the fact that the same is positive in action and whether in a locked or open position is maintained under a positive spring tension, whereby in the one instance the detachment of the loop of the neck-yoke is absolutely prevented, and in the other, the attachment of the neck-yoke by means of the loop thereof is readily permitted with the least possible exertion or labor attending upon the same.

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

1. In combination a vehicle pole-tip pro-

vided with a chamber having a cover-plate with a tongue and recess end, an inverted V-shaped spring mounted in said chamber and engaging the cam-shaped end of a clip or retaining hook provided with a foot for engaging said tip so as to be maintained under spring tension in a normal or abnormal position, substantially as and for the purposes described.

2. In combination a vehicle pole-tip provided with a transverse collar, an oblong chamber arranged in rear thereof and provided with a detachable cover-plate having a tongue and grooved end, a V-shaped spring mounted in said chamber and a curved clip or retaining hook having a recessed foot at one end and a notched or recessed cam-shaped device at the opposite end, the construction and arrangement being such that said clip or hook is maintained under spring tension in either normal or abnormal position, substantially as and for the purposes described.

3. In combination a vehicle pole-tip provided with an oblong chamber with a detachable cover-plate having a tongue and recessed end, a two part spring mounted in said chamber and engaging with the notched and recessed extremity of a clip or hook provided with a foot having a recessed face engaging a complementary seat adapted therefor in the surface of the tip, substantially as and for the purposes described.

In testimony whereof I have hereunto set my signature in the presence of two subscribing witnesses.

THOMAS J. HOUGHTON.

Witnesses:

THOMAS M. SMITH,  
RICHARD C. MAXWELL.