

(No Model.)

T. A. WATROUS.
THILL COUPLING.

No. 434,966.

Patented Aug. 26, 1890.

Fig. 1.

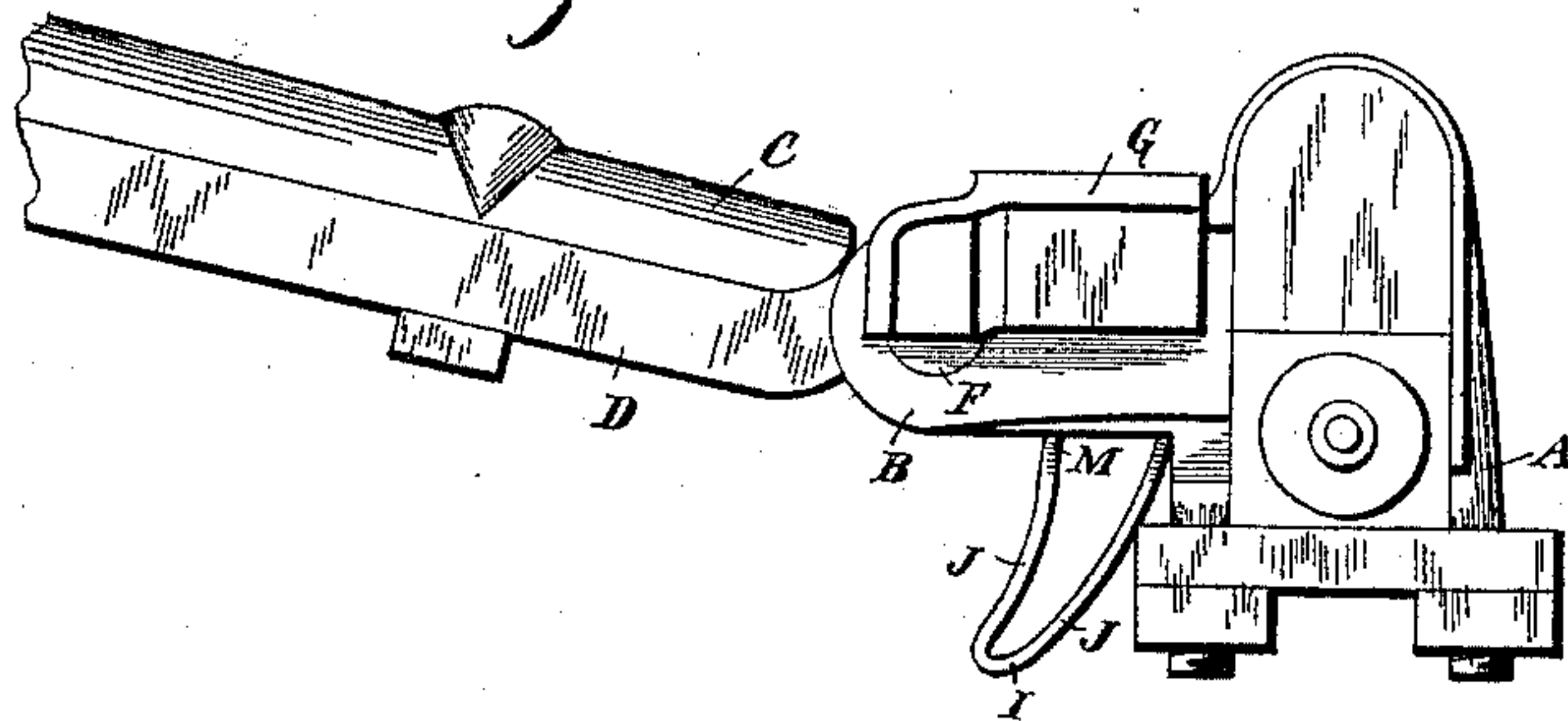


Fig. 2.

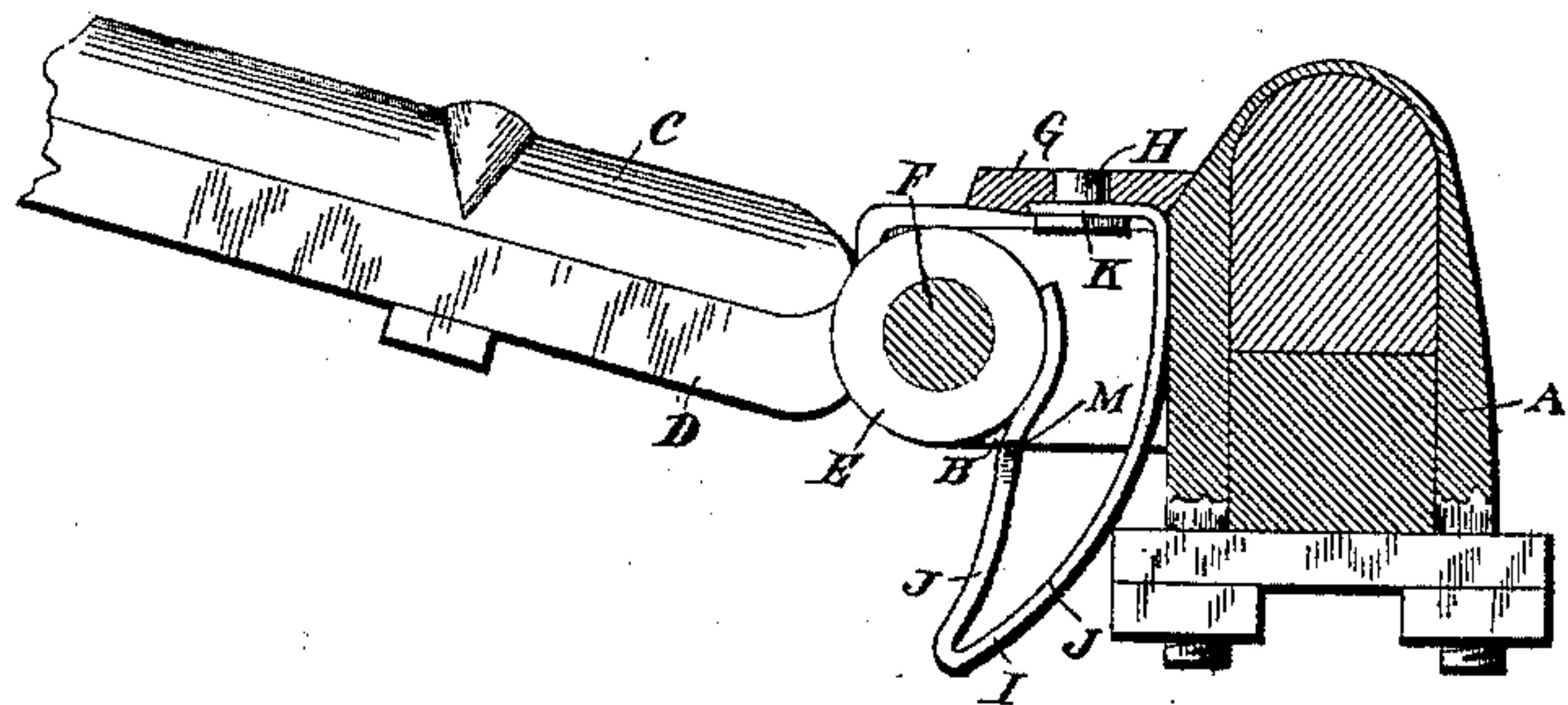


Fig. 3.

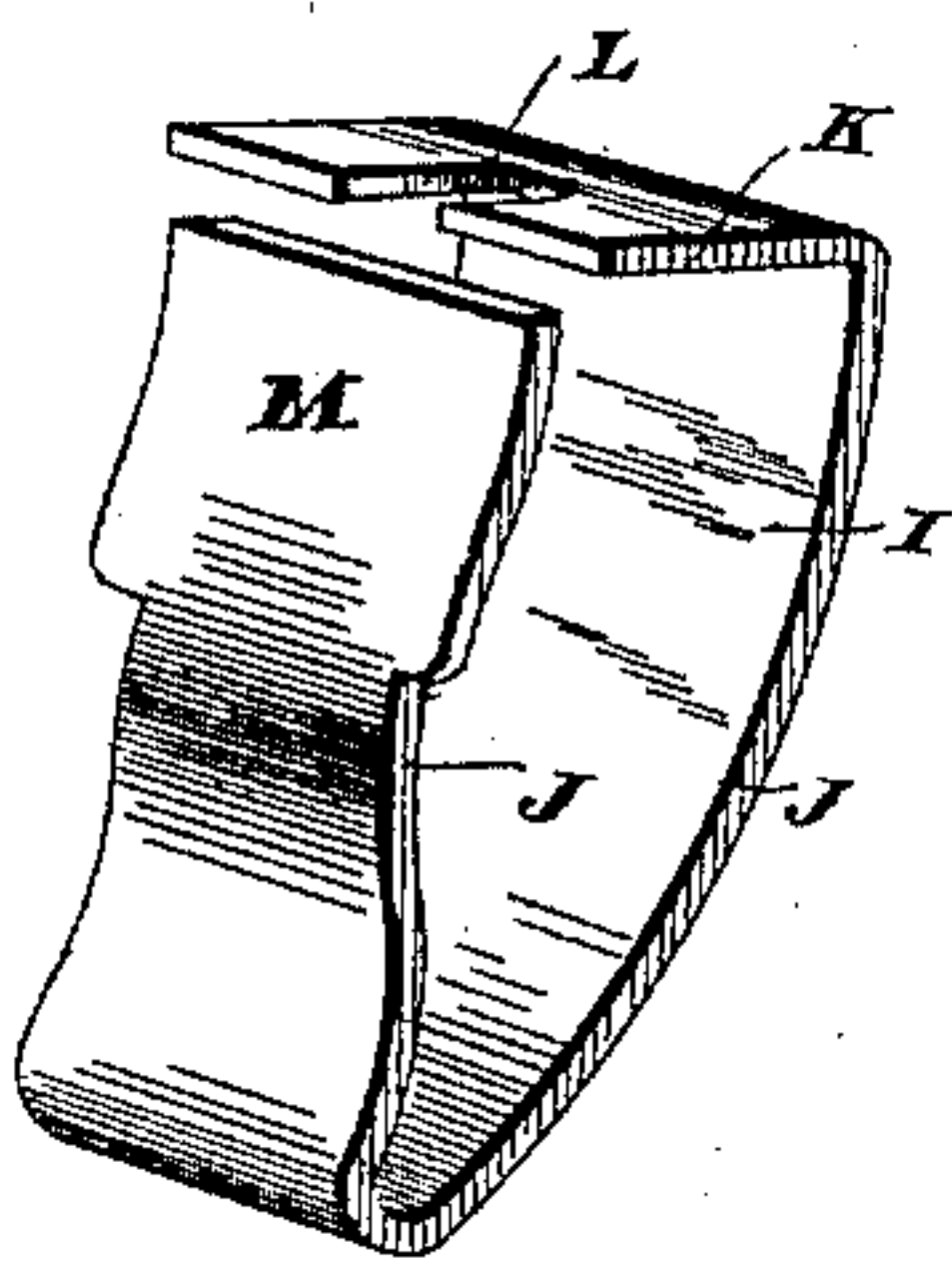
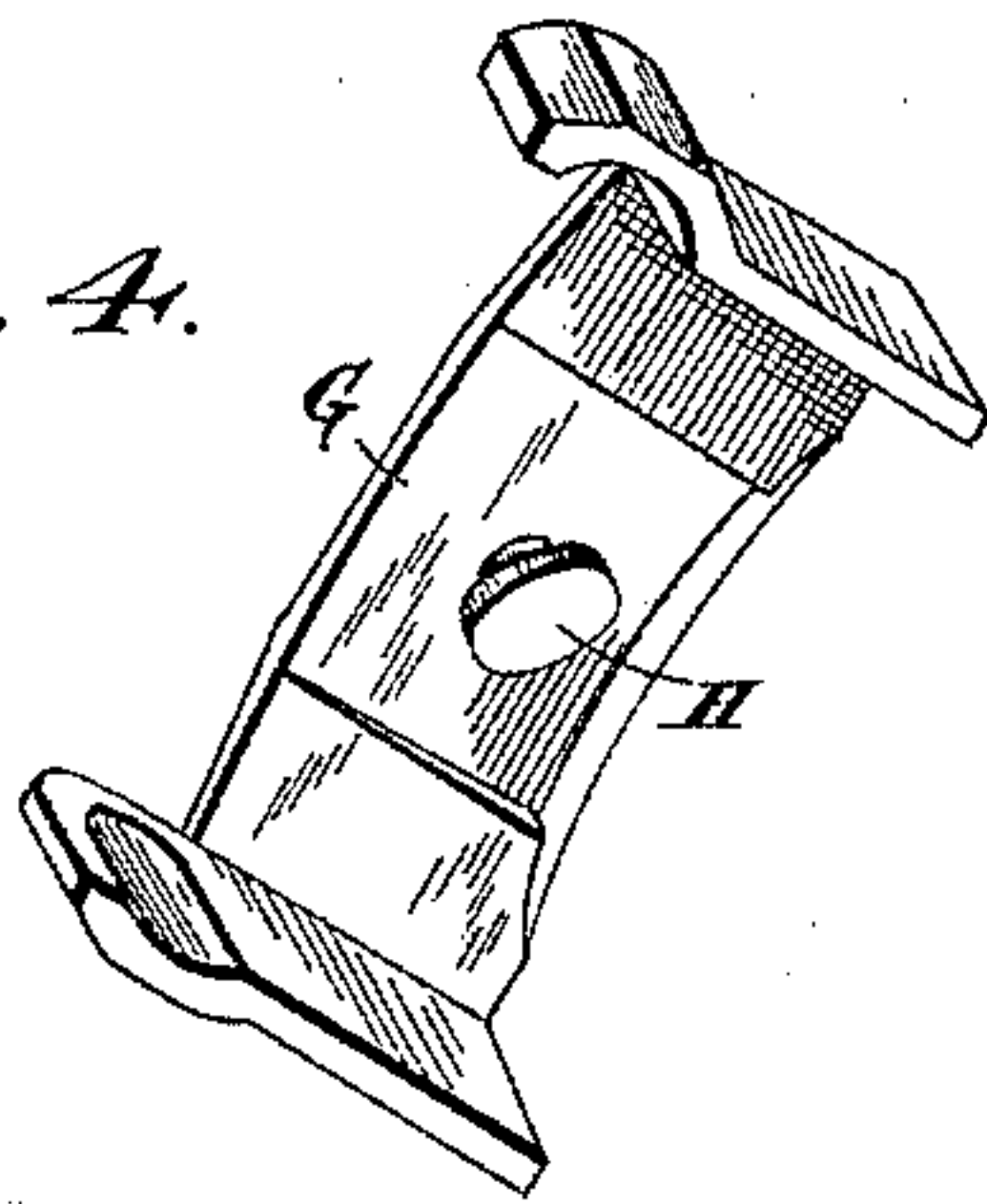


Fig. 4.



Witnesses,

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UNITED STATES PATENT OFFICE.

THOMAS A. WATROUS, OF ELMIRA, NEW YORK.

THILL-COUPLING.

SPECIFICATION forming part of Letters Patent No. 434,966, dated August 26, 1890.

Application filed November 19, 1889. Serial No. 330,857. (No model.)

To all whom it may concern:

Be it known that I, THOMAS A. WATROUS, a citizen of the United States, residing at Elmira, in the county of Chemung and State of New York, have invented a new and Useful Thill-Coupling, of which the following is a specification.

My invention relates to improvements in thill-couplings of the type shown in Letters Patent No. 413,379, granted to me October 22, 1889, and has for its object the provision of a coupling which will be simple in its construction and in which the anti-rattling spring will be of such a formation as to securely hold its cap in place, thereby dispensing with the use of independent securing devices.

With this object in view, the invention consists in an anti-rattling spring of peculiar formation which is removably attached to the cap, and which connects with the thill-iron in such a manner as to hold the cap securely in place.

The invention further consists in certain novel features which will be hereinafter first fully described, and then pointed out in the claims.

In the accompanying drawings, Figure 1 is a side view of the thill-coupling provided with my improvement. Fig. 2 is a view showing the cap in section and the spring in elevation. Fig. 3 is a detail perspective view of the spring. Fig. 4 is a perspective view of the cap, looking at the under side of the same.

Referring particularly to the drawings by letters, A designates the clip which is secured on the axle in the usual manner and is provided with the integral forwardly-projecting coupling-arms B, as shown in my before-mentioned patent, and C is the thill which is provided with a thill-iron D, having an eye E at its end, through which and the ends of the coupling-arms the coupling-pin F is inserted in the ordinary manner. The cap G is of the same general formation as the cap shown in my patented device, and is provided at about its center on its under side with the stud or rivet H, as shown most clearly in Fig. 4. The spring I consists of a metallic spring-plate doubled on itself to provide the diverging arms J J, the rear arm being slightly longer than the front arm and provided at its upper end with the forwardly-projecting lip K, hav-

ing the notch L at its center, as shown. The forward arm of the spring is provided at its upper end with the curved portion M, which is adapted to engage and bear against the rear face of the eye of the thill-iron, and is arranged so as to be below the center of the said eye when in its operative position. The side edges of this front arm J of the spring below the curved portion M are made to converge slightly upward, so as to increase the resiliency of the said arms and equalize the strain on the parts of the spring.

From the foregoing description it will be seen that my improved thill-coupling is very simple in its construction and can be manufactured at a slight cost, and its peculiar advantages will be readily appreciated. The spring is secured to the cap by engaging the notch L beneath the head of the stud H on the cap, as will be readily understood, and the spring can thus be adjusted nearer to or farther from the front edge of the cap, according to the size of the clip or the thill-iron or the force it is desired to apply thereto. After the thill-iron has been connected to the coupling-arms the cap is placed over the said arms, with the spring passing downward between the said arms and bearing on the front side of the clip and the rear side of the thill-iron. When the spring has been pushed entirely downward and the cap rests on the coupling-arms, the upper curved end of the front arm of the spring will bear against the eye of the thill-iron and engage the same below the center of the said iron. As the tendency of the arms of the spring is to fly apart, it will be readily seen that a considerable pressure is applied to the thill-iron, and consequently it will be held firmly against the coupling-pins. Now as the upper end of the front arm of the spring bears on the thill-iron below the center of its eye and fits around the said eye, the retroactive pressure will tend to force the spring downward and thus draw the cap firmly into position on the coupling-arms. It will thus be seen that I have provided a very simple device in which the anti-rattling spring serves to secure the cap firmly into place, and I thus effect an economy in the cost and construction of the device. The spring can be easily disengaged from the cap if it should be broken and a

new spring readily applied without removing the rivet.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, 5 is—

1. In a thill-coupling, the combination of the cap having a headed stud on its under side, and the spring consisting of a spring-plate doubled on itself and having its rear 10 arm provided at its upper end with a lip having an open-ended slot adapted to removably engage the stud on the cap, and its forward arm provided at its upper end with a concave portion, as set forth.

15 2. The clips A and the thill, in combina-

tion with the cap G, having turned-down ends bearing against the ends of the pivotal bolt of the thill, and the spring I, removably secured to the under side of said cap and having its free end pressing upwardly and 20 forwardly against the eye of the thill and retaining the cap in place, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in 25 presence of two witnesses.

THOS. A. WATROUS.

Witnesses:

J. H. SIGGERS,

R. J. MARSHALL.