(No Model.) 2 Sheets—Sheet 1.

M. D. FOWLER & C. H. WHITE.

THILL COUPLING.

No. 420,596. Patented Feb. 4, 1890.

Fig 1.

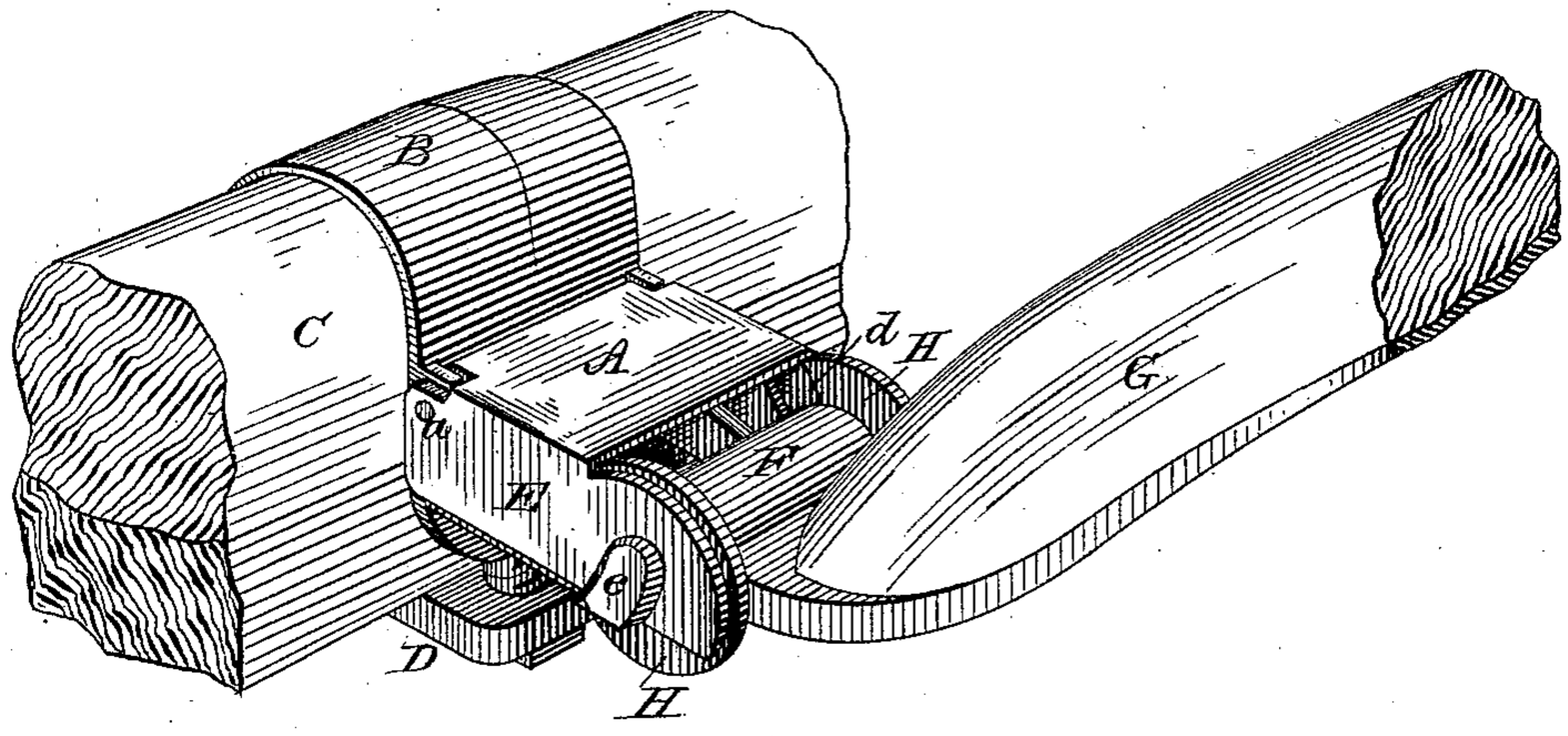
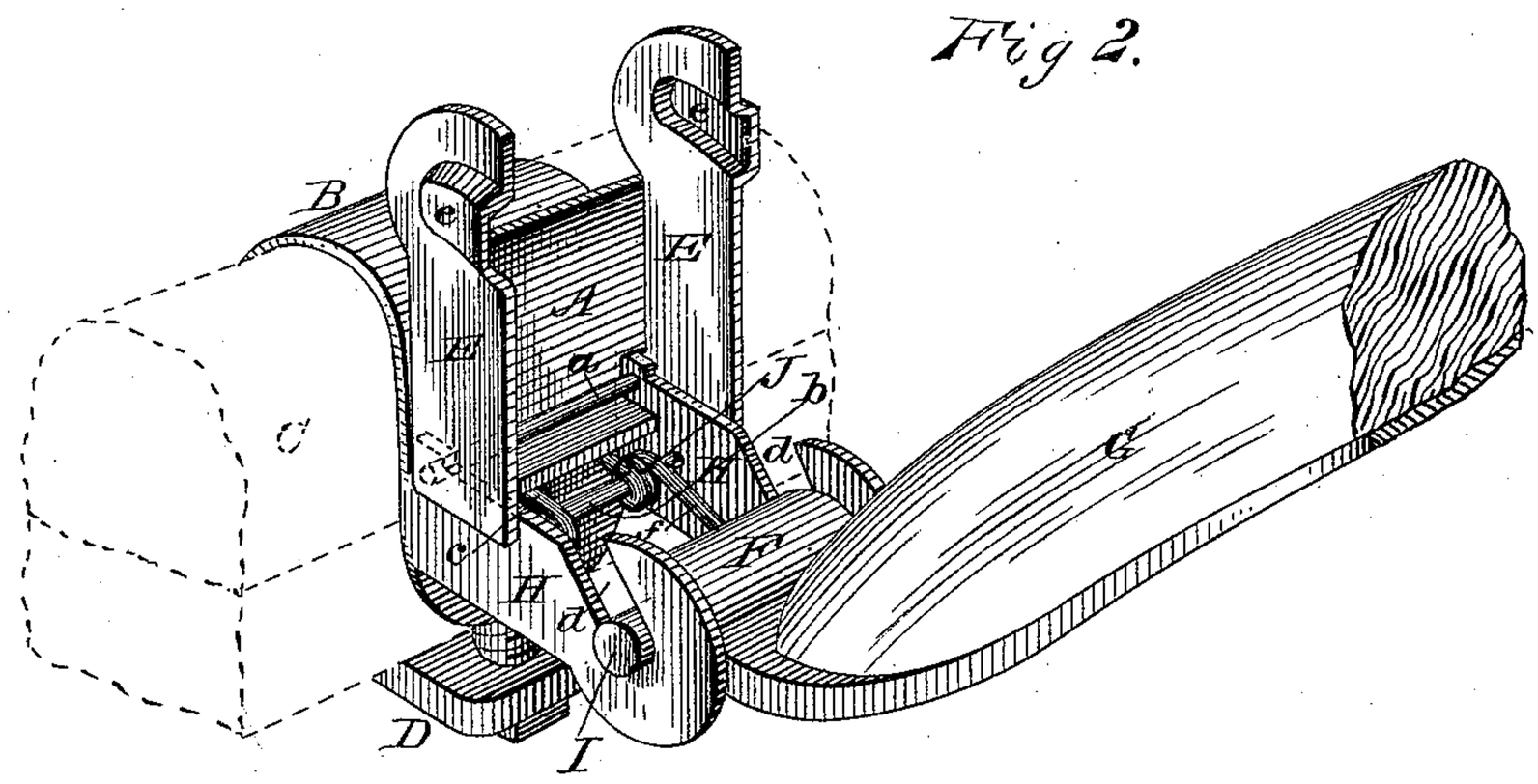


Fig 2.



WITNESSES

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Fig 3.

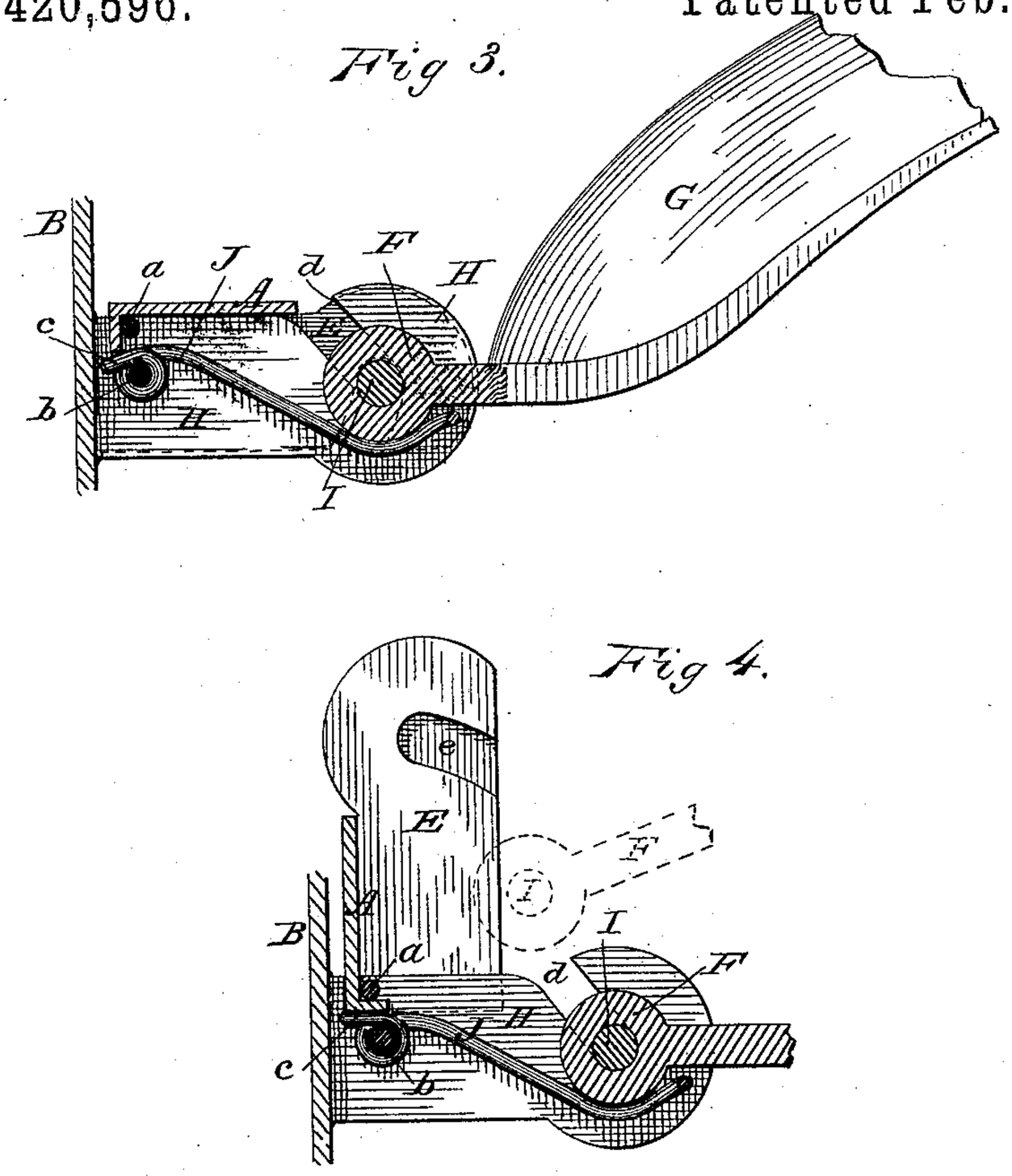
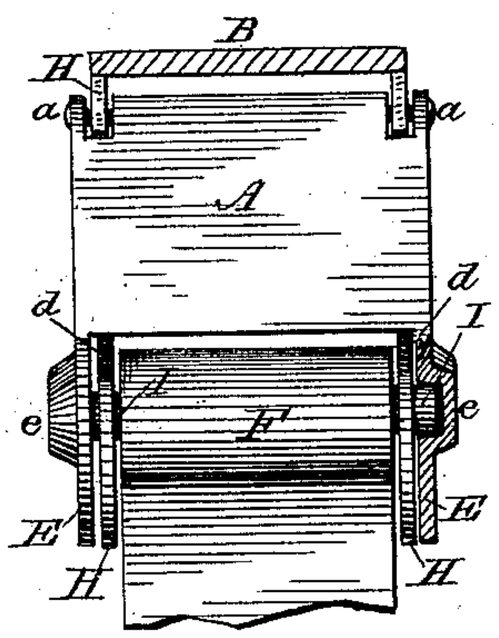


Fig 4.

Fig 5.



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UNITED STATES PATENT OFFICE.

MATTHEW D. FOWLER, OF EAST FISHKILL, AND CHARLES H. WHITE, OF BRINCKERHOFF, NEW YORK.

THILL-COUPLING.

SPECIFICATION forming part of Letters Patent No. 420,596, dated February 4, 1890.

Application filed December 13, 1889. Serial No. 333,579. (No model.)

To all whom it may concern:

Be it known that we, MATTHEW D. FOWLER and CHARLES H. WHITE, citizens of the United States, residing at East Fishkill and Brinckerhoff, respectively, in the county of Dutchess and State of New York, have invented certain new and useful Improvements in Thill-Couplings; 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 improvements in thill-couplings in which a clip is constructed to hold a headless bolt in place and permit its removal through slots in the ears of the clip, all rattling being prevented by a double-acting spring, as hereinafter described; and the object of our invention is to provide a thill-coupling which is at once anti-rattling, strong, safe, and capable of being changed from pole to shafts, and vice versa, without the use of nuts, wrench, or hammer. We attain these objects by the device illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of our coupling as it appears will thill-eye attached to the clip ready for use. Fig. 2 is a perspective view of the same with the yoke or gate raised, so as to show the method of attaching or detaching the thill-eye. Fig. 3 is a sectional view of the same in its closed position, showing the adjustment and operation of the anti-rattling spring. Fig. 4 is a sectional view showing the gate as raised and showing by the dotted lines the position of the thill-eye as it is removed from the clip, and Fig. 5 is a top plan view of our device with space shown between adjacent parts and a portion of one side broken away to better indicate the relation of the various parts.

Similar letters refer to similar parts throughout the several views.

The clip B is secured to the axle C by the under strap D, through which the threaded clip-bolts pass for attachment with nuts in the usual manner. B is provided with the forward-projecting ears H H, having the diagonal slots *d d*, adapted to receive the headless bolt I, which passes through the thill-eye F and preferably slightly beyond the ears H H, although it may be made to extend no farther than the outer edge of H on either side.

G represents the portion of the pole or shaft bolted to the thill-eye in the usual manner.

A is a gate or yoke pivoted to rod *a* through the ears H H close to the clip B and having at the back a downwardly-projecting flange adapted to impinge upon and press down the back *c* of the spring J when A is closed, as shown in Fig. 3. A is further provided with the downwardly-projecting flanges E on each side, fitting tightly against the outside of the ears H H when brought down to the closed position. E E may be made perfectly plain where the bolt I does not project beyond H, or may be provided with the outwardly-projecting and closed slots *e e*, as shown in Fig. 2, where the bolt I is made long enough to project slightly on either side of H H. This latter method is perhaps preferable, because the engaging of the slots *e e* with the bolt I at a different angle from the slots *d d* tends to secure the bolt I in place more firmly and to lessen the strain upon the anti-rattling spring J.

The use of a headless bolt I in connection with the slots *d d* permits its removal from the clip without the need of driving it out of the thill-eye F. This is a twofold advantage—first, in dispensing with the use of a hammer as well as a wrench in adjusting the coupling, and, second, in permitting the bolt to be fitted much more snugly in the thill-eye than if it were necessary to remove it, thus diminishing the rattling and wearing-surface in the coupling.

The double anti-rattling spring J is pivoted on the pin *b*, around which it is bent one or more times, as shown in Figs. 2, 3, and 4. The longer end J passes forward and under and against the thill-eye F, and the shorter end *c* projects horizontally back just high enough to be pressed down by the downward-projecting flange at the back of the gate A when the latter is closed over the clip. This pressure upon *c* increases the pressure of J against the thill-eye F, and so creates a perfect anti-rattler without the aid of packing, which is continually wearing out. The opening of the gate or yoke A lessens this pressure against F sufficiently to permit the prompt disengag-

ing of the thill-eye and bolt through the slots *d d* without the use of force, thereby greatly facilitating the change from pole to shafts, and vice versa.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. In a thill-coupling, a spring pivoted to the clip and adjusted so that the lowering of gate operates upon the short arm of the spring to depress it, and thereby causes its longer forward-projecting arm to press up strongly against the thill-eye, as and for the purpose specified.

2. A thill-coupling consisting of a clip having projecting slotted arms, a thill-eye and bolt adapted to engage with the slots of the clip, a gate provided with sides suitable for holding the bolt in place, and a double-acting spring constructed so as to press firmly against the thill-eye when the gate is closed, as and for the purpose specified.

3. A thill-coupling consisting of a clip B, having projecting arms H H and containing slots *d d*, the coupling-pin I, the gate A, having sides E E and containing closed slots *e e*, the thill-eye F, and the double-acting spring J, all substantially as described.

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

MATTHEW D. FOWLER.
CHARLES H. WHITE.

Witnesses:
HENRY W. GILBERT.
IRVING ELTING.