

T.W. Porter's Improvement in Thill Couplings.

No. 120,456.

Patented Oct. 31, 1871.

Fig. 1

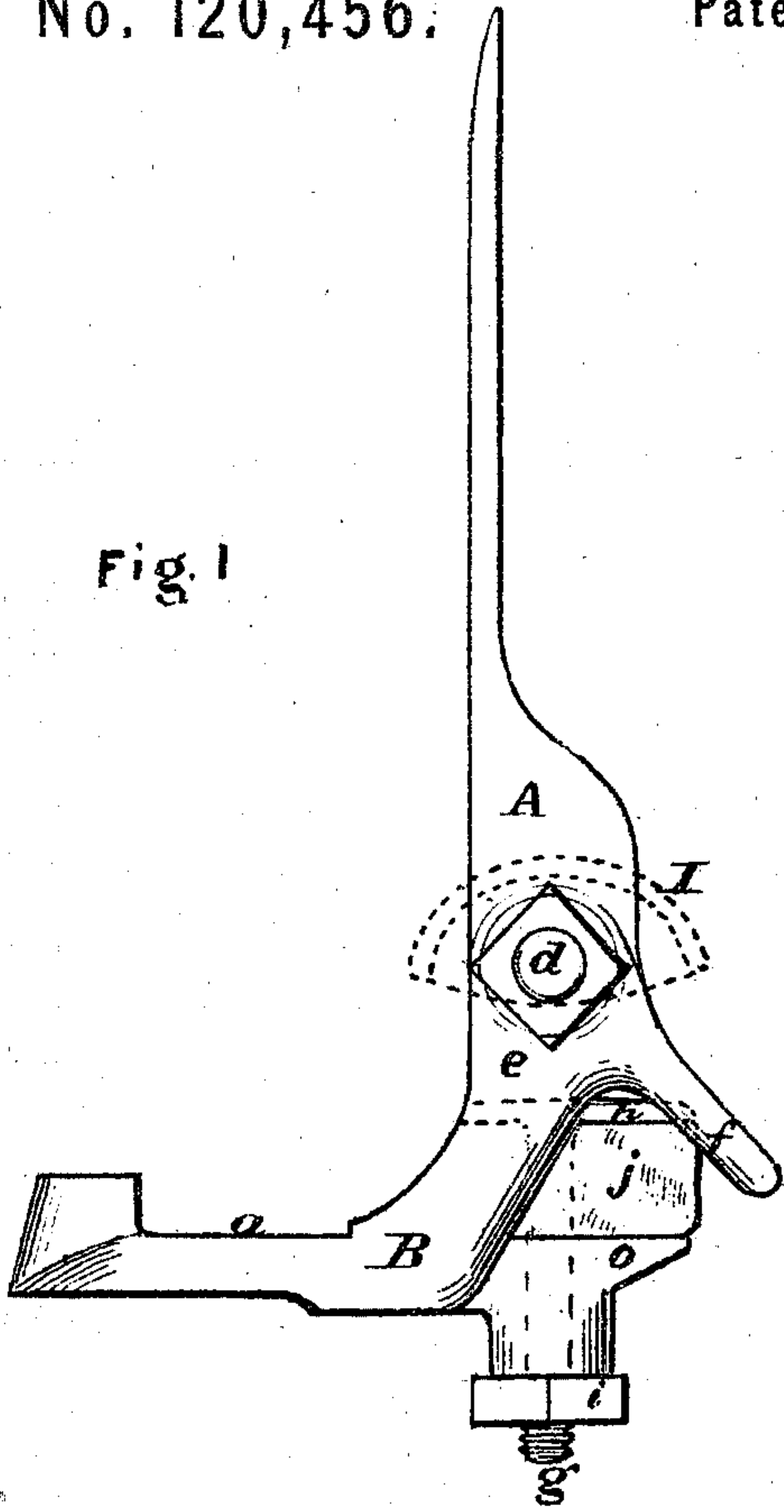


Fig. 2

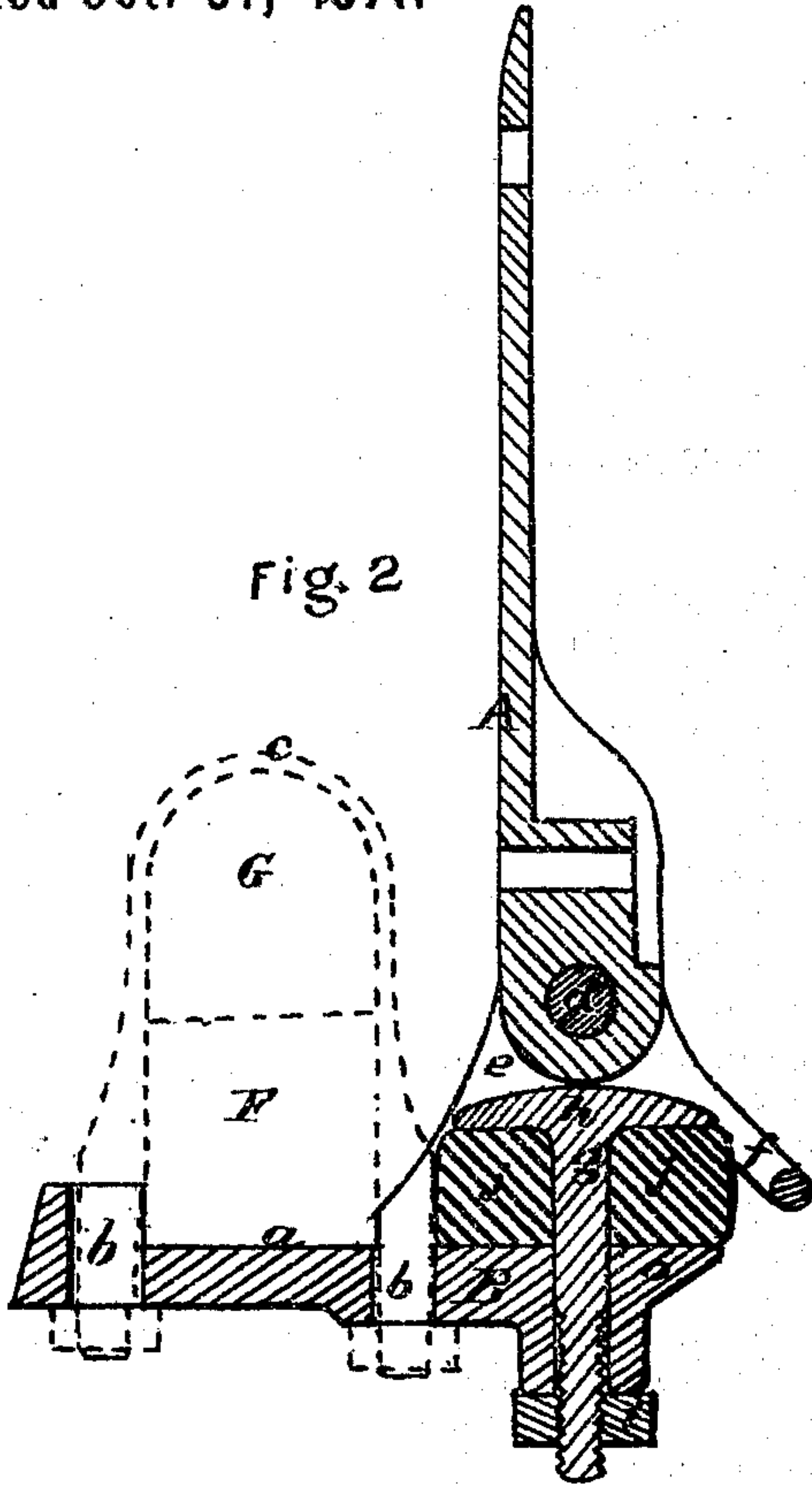


Fig. 3

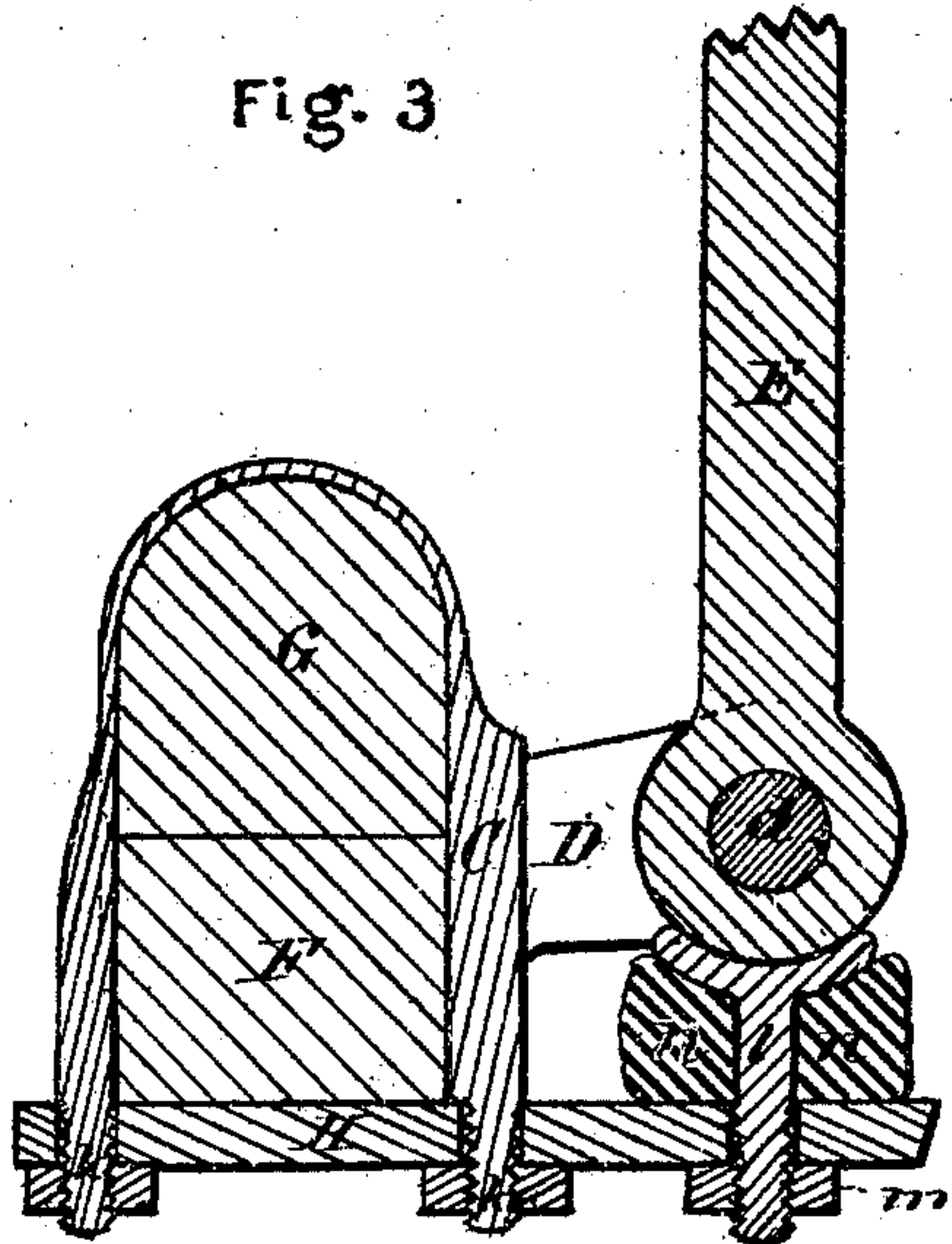
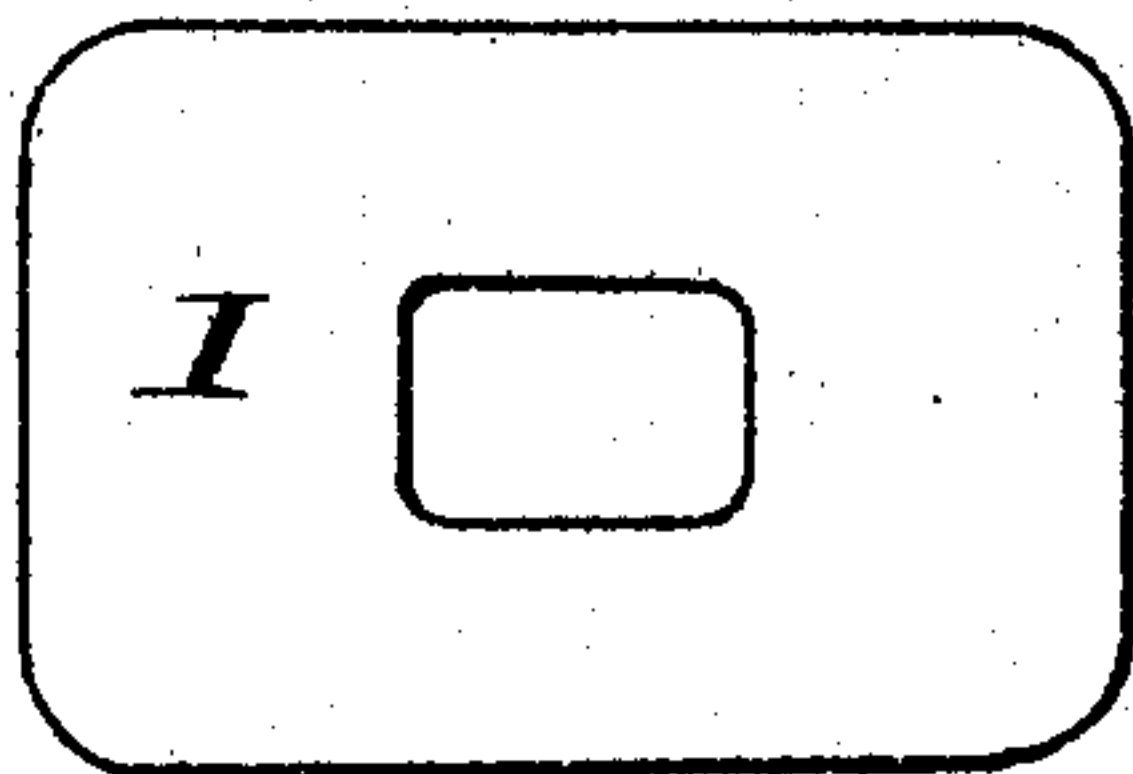


Fig. 4



WITNESSES
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THOMAS W. PORTER, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN THILL-COUPPLINGS.

Specification forming part of Letters Patent No. 120,456, dated October 31, 1871; antedated October 11, 1871.

To all whom it may concern:

Be it known that I, THOMAS W. PORTER, of Boston, in the county of Suffolk and State of Massachusetts, have invented new and useful Improvements in Carriage-Thill Couplings, of which the following is a specification, reference being had to the accompanying drawing, in which—

Figure 1 is a side elevation of the coupling heretofore patented to myself, with my present improvement attached. Fig. 2 is a vertical section thereof taken through the center of the coupling and transversely to the axle. Fig. 3 is a similar section, showing a common wrought-iron coupling with my "reliever" applied thereto; and Fig. 4 is a top or plan view of the "grit-shield."

This invention relates to improvements in couplings, by which the shafts of vehicles are hinged or connected with the forward axle thereof; and the invention consists in three features or parts: one being a loop for the "safety-strap," which loop is formed as a constituent part of the shackle; another being a device by which the pressure of the elastic buffer upon the shaft-eye is relieved or taken off, when desired; and the third is an elastic collar or shield secured upon the rear end of the shaft for the purpose of protecting the shackle from the injurious effects of grit, which is otherwise carried into the joints by a variety of well-known causes.

In the drawing, A represents a tip, which is formed to receive (in a socket) the rear end of the shaft, which is embraced between the strap of the tip and the continuation of the T-plate, bolts passing through the three parts in the holes shown in Fig. 2. B is the shackle-plate, which is formed with a seat, *a*, for the axle F, while holes *b b*, formed in the plate adjacent to seat *a*, receive the clip *c*, which embraces stock G and axle F and secures the shackle to the axle. *ee*, Figs. 1 and 2, are two ears rising from plate B, and between which tip A is pivoted upon bolt *d*, which passes through the ears and tip, and is secured in the usual manner. *o* is a shelf extending forward between ears *e*; while *g* is a screw-bolt passing vertically through the shelf and centrally beneath tip A. The head *h* of the bolt *g* is, for convenience, formed square, and of a length nearly equal to the space between ears *e*, so that the ears prevent its rotating when screw-nut *i* is being actuated, this nut being at-

tached to bolt *g*, as shown. J is a block of rubber resting upon shelf *o*, the bolt *g* passing centrally through it. When it is desired to compress the rubber, for the purpose of inserting or removing tip A, the nut *i* is turned upon bolt *g*, whereby the rubber is compressed as head *h* is drawn down toward shelf *o*; but by turning the nut down free from shelf *o* the rubber will act with its full natural force upon the tip, thereby preventing rattling. *f* is a loop extending from one of the ears to the other, and constituting a part thereof. This loop serves as the point of attachment of the lower end of the safety-strap. In Fig. 3, C represents the "clip" portion of the shackle, while D is one of the ears which are formed as a part of the clip. Y is the stock, and F the axle. H is the axle-yoke, through which passes the ends *kk* of clip C. E is the eye-strap, which, in use, is welded to the T-plate; and *d* is the pivot-bolt. The yoke H extends forward beneath the eye-strap E, and the screw-bolt *l* passes vertically through it, as shown, as also through the elastic buffer *n n*. The head of bolt *l* is formed, as shown, with a concavity corresponding to the eye of strap E; and the nut *m* serves as the means of relieving the pressure of the rubber *n* upon the eye E, while, by turning nut *m* free from yoke H, the rubber is allowed to exert its full natural force upon the eye. I is an elastic cap or shield, formed of rubber or other flexible material. It may either be cut from sheet-rubber or molded to the desired form. It is of sufficient size to cover the joints where the two parts of the coupling are united; and centrally in it is a hole, through which the eye of the shackle or tip is passed, so that the rubber fits closely around the shaft and iron, forming a water-tight joint; and as the outer edges of the collar are depressed, as shown in Figs. 2 and 4, none of the dirt, sand, or mud, which is constantly sliding down the rear end of the shaft, can enter the coupling-joints or injure the moving parts. This collar is easily applied or removed, or pushed up the shaft when the coupling is to be manipulated; and when molded it can be rendered ornamental as well as useful.

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

1. The loop *f*, formed as a constituent part of plate B, substantially as described and shown.

2. The arrangement of tip A, shackle-plate B, elastic buffer J, and screw-bolt *g*, substantially as described and shown in Figs. 1 and 2.

3. The arrangement of shackle-clip C having ears D formed as part thereof, the eye-strap E, yoke H, rubber *n*, and screw-bolt *l*, substantially as described and shown in Fig. 3.

4. In combination with the shaft and shaft-

shackle, an elastic shield, arranged to operate substantially as described and shown at I, and for the purposes specified.

THOMAS W. PORTER.

Witnesses:

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FRANK M. PORTER.

(31)