

G. DRAPER.
BEARINGS FOR JOURNALS.

No. 171,359.

Patented Dec. 21, 1875.

Fig. 1.

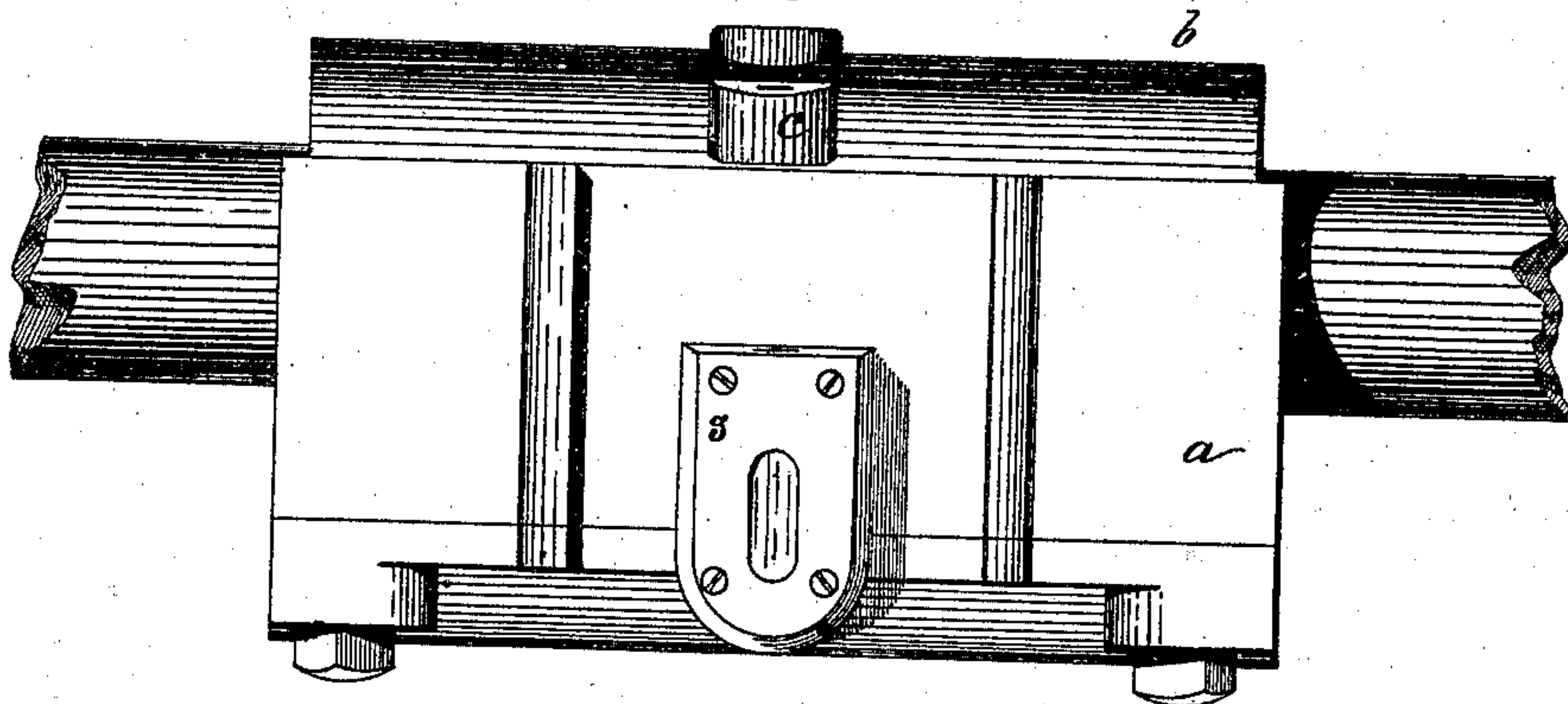


Fig. 2.

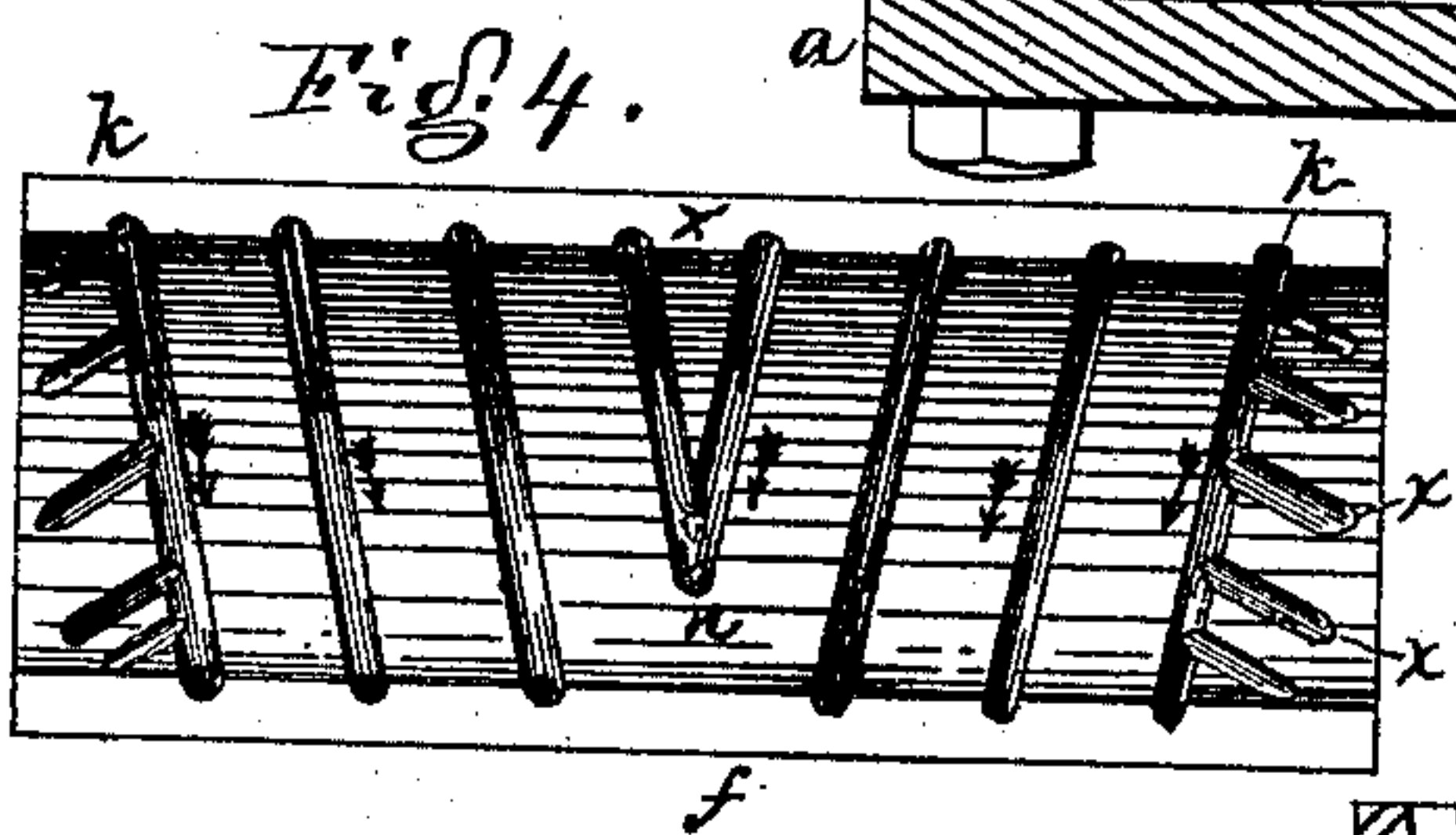
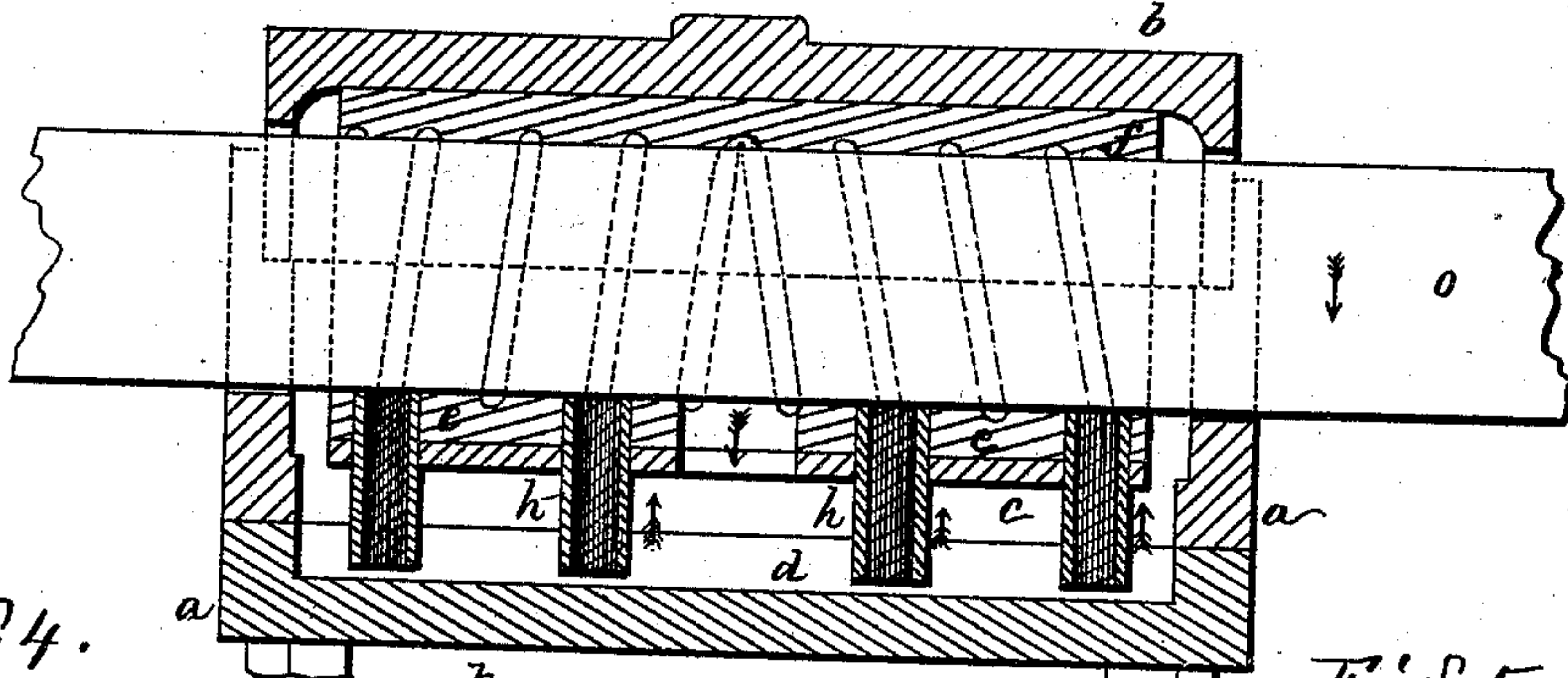
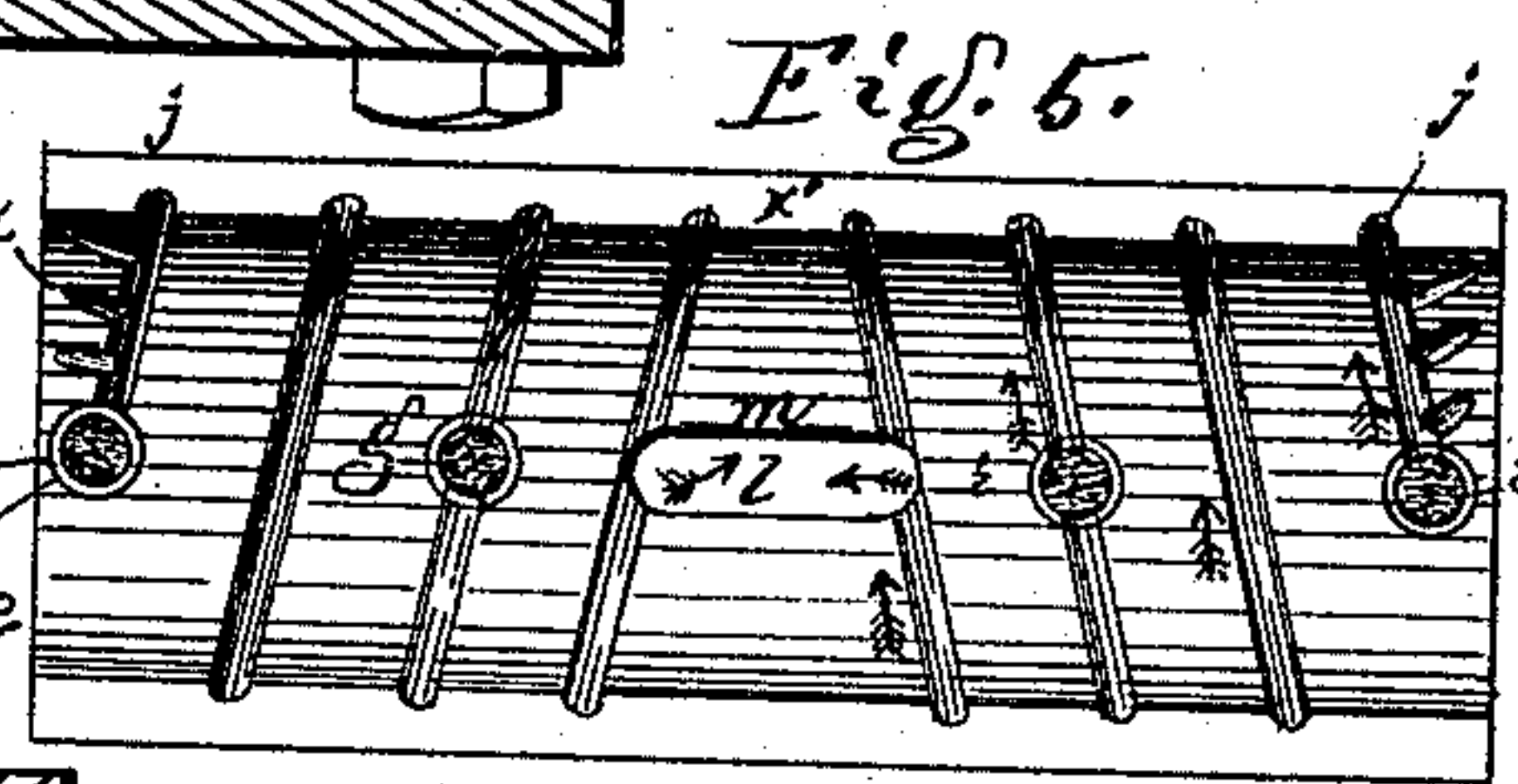
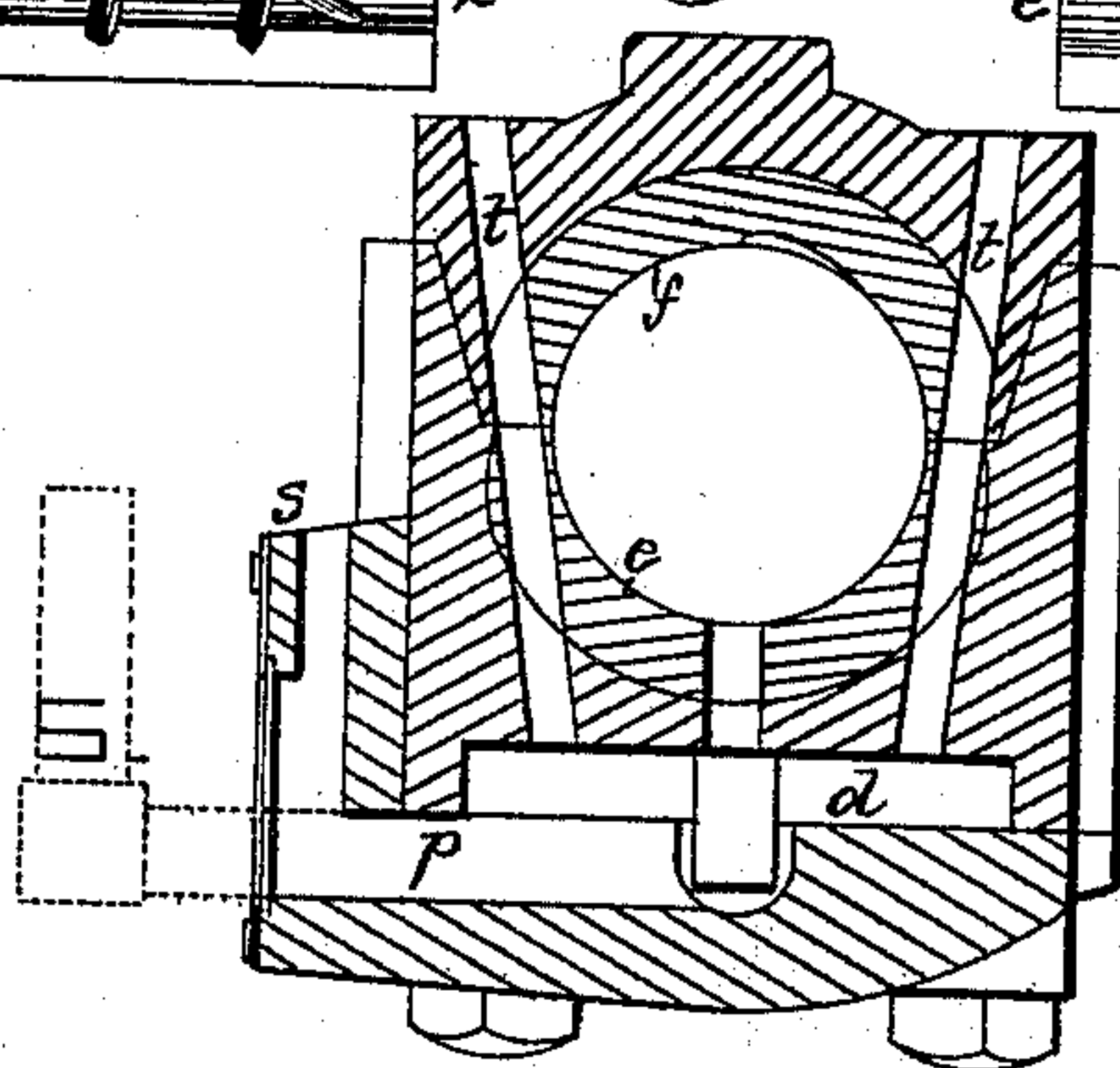


Fig. 3.



Witnesses

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Attys.

UNITED STATES PATENT OFFICE.

GEORGE DRAPER, OF HOPEDALE, MASSACHUSETTS.

IMPROVEMENT IN BEARINGS FOR JOURNALS.

Specification forming part of Letters Patent No. **171,359**, dated December 21, 1875; application filed October 26, 1875.

To all whom it may concern:

Be it known that I, GEORGE DRAPER, of Hopedale, in the county of Worcester and State of Massachusetts, have invented an Improvement in Bearings for Journals, of which the following is a specification:

This invention relates to improvements in journal boxes, and bearings to lubricate the same; and consists in a bearing provided with upper and lower grooved sections connected with an oil-supplying source, and having an oil-delivering opening and intersecting diagonal grooves, substantially as hereinafter set forth. Also, in the employment, in a journal or bearing, of bristles or equivalent non-fibrous strands to conduct the oil or other lubricant from the oil-supply to the rotating or moving surface to be lubricated.

Figure 1 is a side elevation of one form of a journal or bearing to which my invention is applied; Fig. 2, a longitudinal section thereof; Fig. 3, a central cross-section; Fig. 4, a view of the inner or under side of the grooved bearing-section of the cap or one-half of the bearing, and Fig. 5 is a view of the inner portion of the other half of the bearing.

In the drawing, *a* represents the lower portion of the journal-box, and *b* the cap or cover. They may be of any well-known form, and be suitably attached, and within the lower part *a* is a partition or support, *c*, forming between it and the bottom of the box a chamber, *d*, for the reception of oil or other suitable lubricant or compound. A bearing-section, *e*, of brass, Babbitt, or other customary bearing-metal, is cast or otherwise placed on this partition, and a similar section, *f*, is fitted to the cap *b*. The lower section *e* is provided with openings *g* to receive tubes or bristle-holders *h*, within which are placed bristles *i*, or whalebone, or mixtures thereof, or other equivalent hard-surfaced but non-metallic material, not easily gummed or clogged by the oil or impurities therein, as is the case with fibrous strands or packing used to conduct oil to bearings. The lower ends of these bristles project into the lubricating compound, and their upper ends terminate in grooves, or at the ends of grooved or depressed parts of the section *e*. The extreme right and left tubes intersect the ends of grooves *j*, the bristles terminating at the end of such grooves,

and the inner tubes (two being shown) extend to, and the bristles carried by them terminate in, grooves running diagonally across the section. (See Fig. 5.) The grooves *j* commence at or near the end of the bearing-section *e*, and lead into a similar groove, *k*, in bearing-section *f*, the grooves in sections *e* and *f* terminating one in the other, forming spiral passages, and running from the ends to at or near the center of the bearing-sections, where the grooves intersect a delivering passage or orifice, *l*, having the edge *m* preferably lower than the opposite edge, and the ends of the spiral passages terminate at *n* in the cover or cap-section *f*.

The shaft or spindle *o* turns in the direction of the arrow thereon, Fig. 2, and takes the oil or equivalent from the ends of the bristles, the oil passing up through the tubes and among the bristles by capillary attraction, and following the grooves *j k*, or the spiral passages formed by such grooves, in the direction of the arrows, thereby thoroughly lubricating the shaft, and the oil passes from the grooves into the delivering-orifice *l*, and back into the oil-supplying chamber. Some oil will be carried beyond this opening *l* up the grooves to their intersection at *n*, but such oil will flow back as the part *m* is reduced to form a space for the oil to return and pass through *l*. At the outer edge of the outer grooves *j k* are diagonal grooves *x*, placed and inclining, as shown, to direct the oil, should too much be carried up through the outer tubes, into the grooves *j* or *k*, and prevent it from flowing over the ends of the sections *e f*. If the shaft *o* were to rotate in the opposite direction, then the grooves *j* would start and extend from the oil-supplying points in the opposite direction. A channel, *p*, leads from the oil-chamber *d* to a gage, *s*, which may be a projection from the box, with a vertical oil-chamber having a glass or transparent front; or a pipe may project from the box and have a glass tube rising therefrom, as shown in dotted lines.

The bristles may be applied in any other kind of journal box or bearing, instead of fibrous material, and will be found to clog up less frequently than fibrous material, and the bristles may be easily cleansed and reused if they become foul.

The oil is supplied through the gages or through openings *t*. When the two sections (see Figs. 4 and 5) are placed together and about the shaft the points *x' x'* meet each other.

I claim—

1. In a journal box or bearing, the sections *e f*, provided with oil-supplying and delivery openings, and with grooves or spiral passages adapted to carry the oil from the supplying-openings toward the center of the bearing and to the delivery-opening, and with diagonal grooves, substantially as described.

2. In a journal-bearing, the grooves *j k* and intersecting diagonal grooves *x*, to carry the oil from the ends of the bearing into the grooves *j k*, substantially as described.

3. The combination, with a bearing, of bristles to conduct oil or other lubricant to the inner side of the bearing, substantially as described.

4. The combination, with the bearing, grooved sections, and oil-chamber, of the tubes and bristles connecting the grooves and oil-chamber, and adapted to conduct oil to the grooves, substantially as described.

5. In a journal-bearing, the sections *e f*, provided with spiral grooves intersecting at *n*, and with an outlet, *l*, and an enlarged space, *m*, to allow the oil carried to the center of the bearing to pass to the oil-chamber, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEORGE DRAPER.

Witnesses:

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S. B. KIDDER.