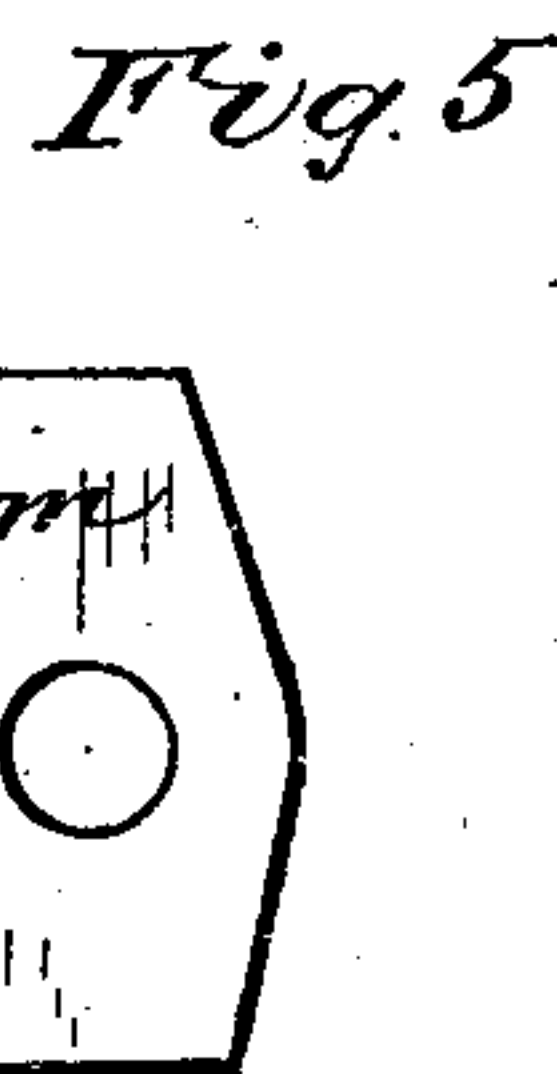
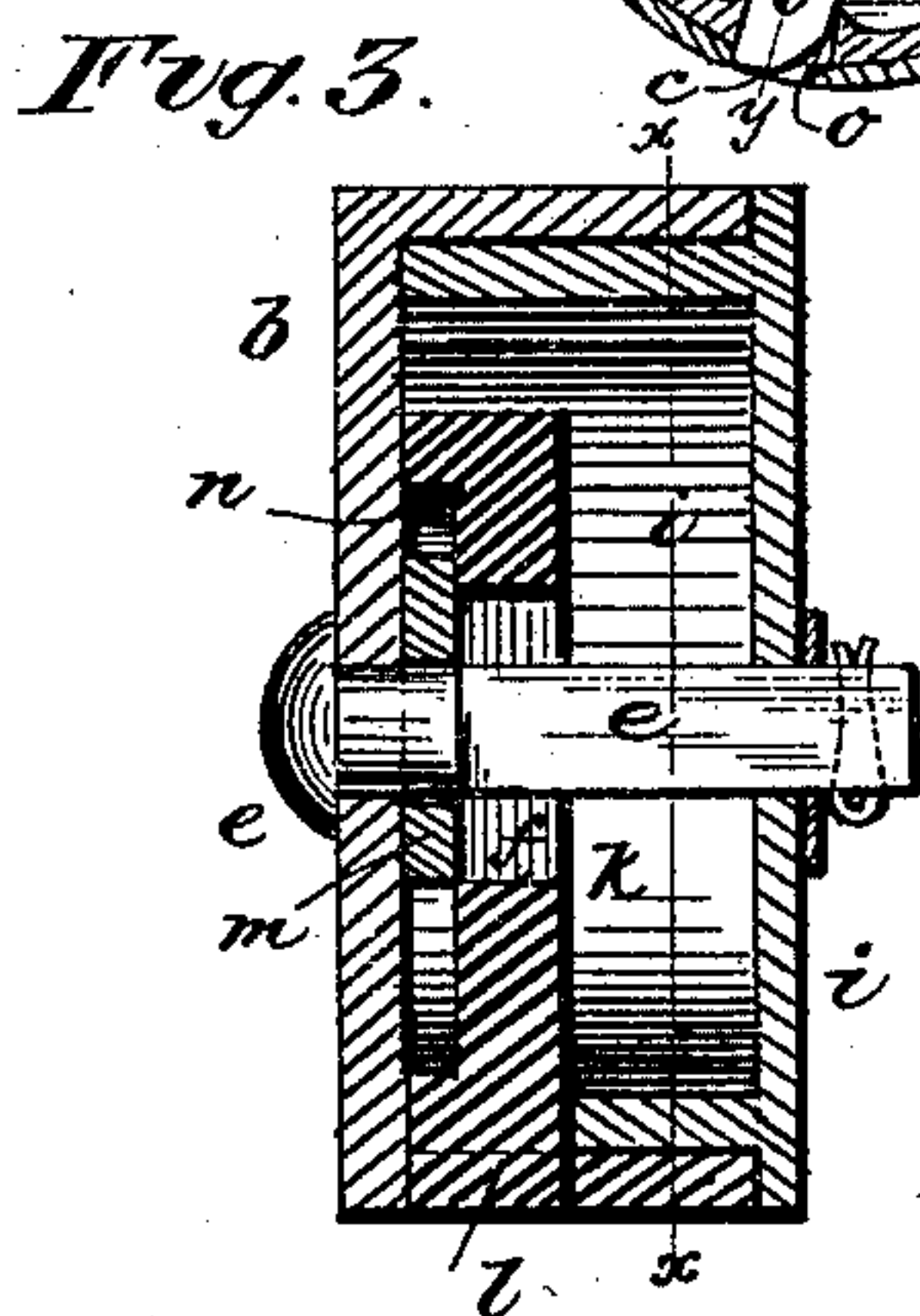
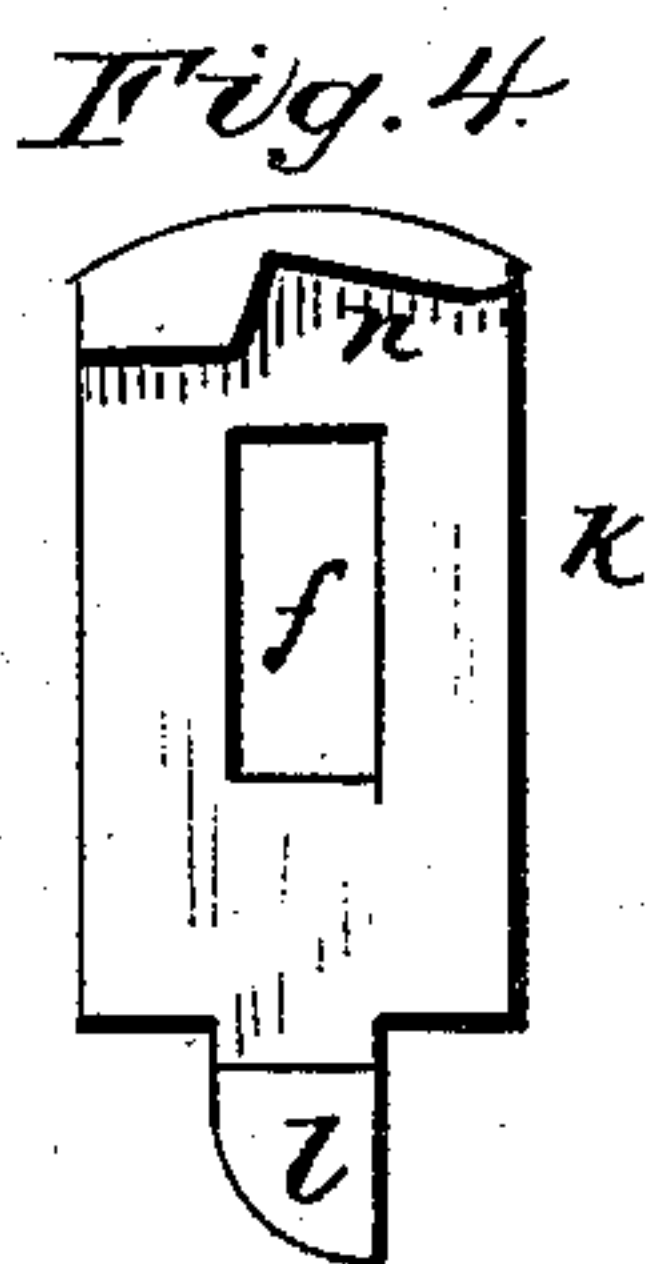
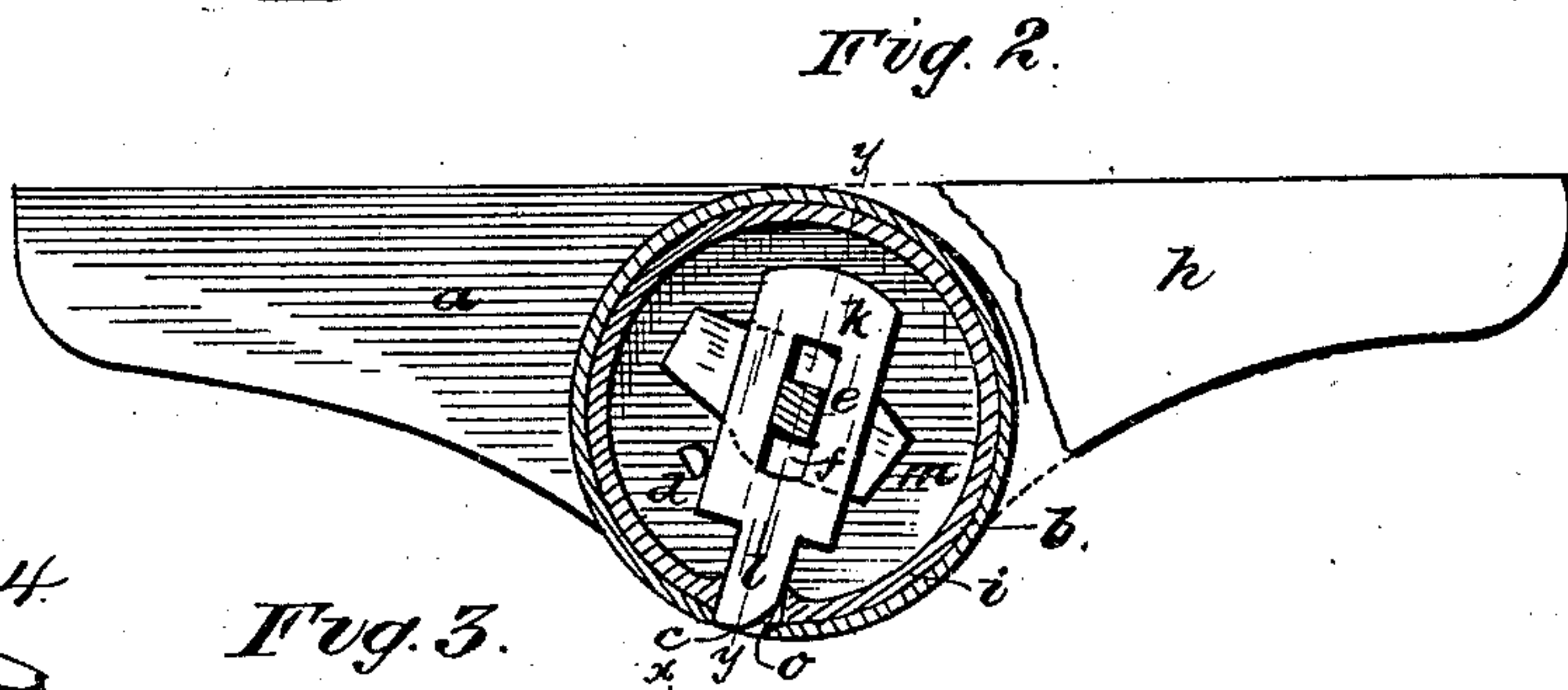
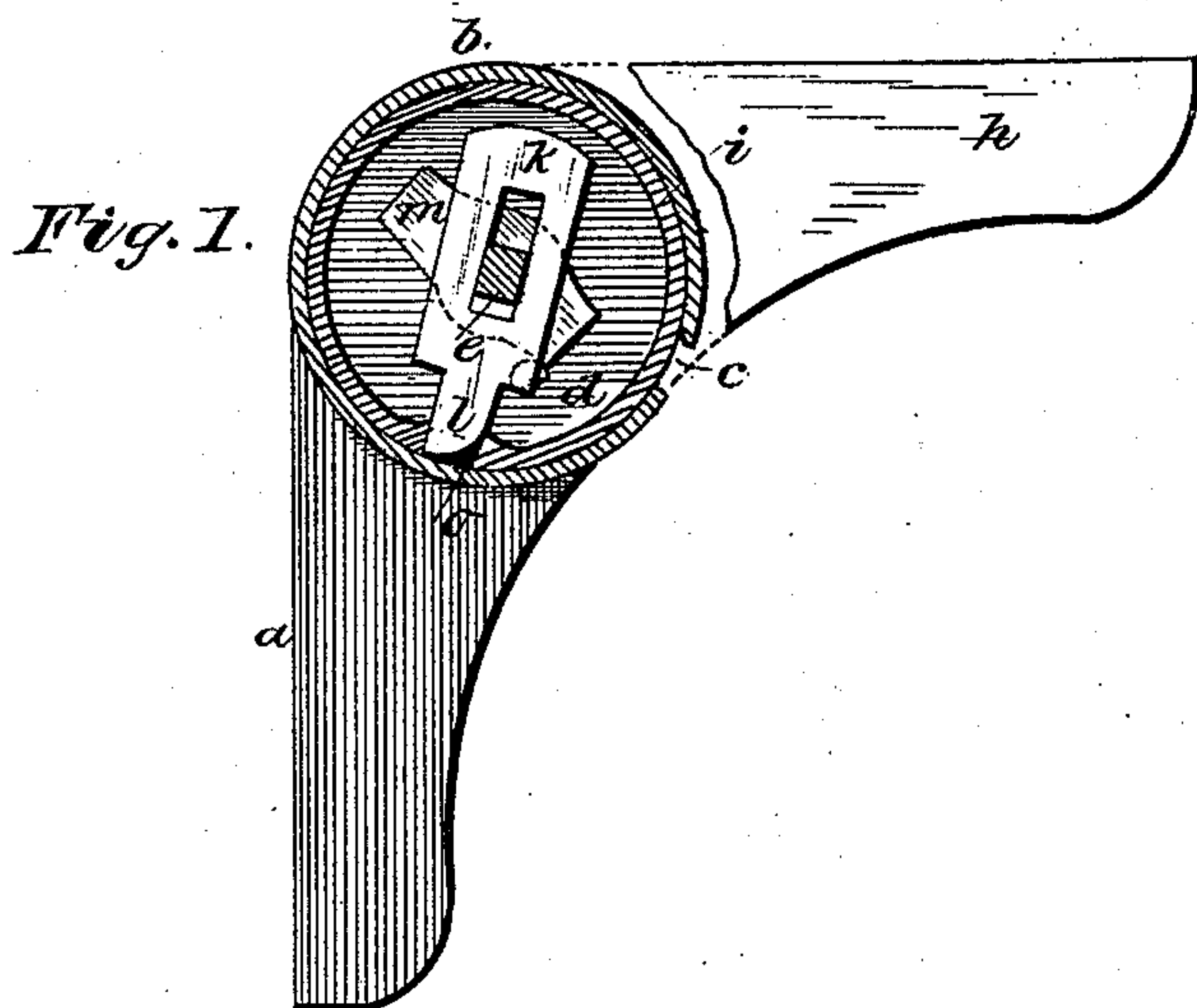


(Model.)

C. M. HUGHES,
HINGE FOR SCHOOL FURNITURE.

No. 249,627.

Patented Nov. 15, 1881.



WITNESSES:

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UNITED STATES PATENT OFFICE.

CHARLES M. HUGHES, OF LIMA, OHIO.

HINGE FOR SCHOOL-FURNITURE.

SPECIFICATION forming part of Letters Patent No. 249,627, dated November 15, 1881.

Application filed April 4, 1881. (Model.)

To all whom it may concern:

Be it known that I, CHARLES M. HUGHES, of Lima, in the county of Allen and State of Ohio, have invented a new and Improved Hinge for School-Furniture; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a sectional elevation of my improved hinge, on line *x x*, Fig. 3. Fig. 2 is a similar view, showing the leaf locked in place. Fig. 3 is a cross-section through line *y y*, Fig. 2. Fig. 4 is a detail of catch, and Fig. 5 is a detail of lock-plate.

My invention relates to improvements in hinges designed particularly to be applied to the desk-leaf of school-desks, hinged to the back and seat-frame of the desk, so that the same may be closed down when not in use, thus affording more convenience of room, while at the same time forming, in connection with the remainder of the school-desk, an inclosed recess for books and other materials of the scholar. It may be also applied to other structures, where the same may be found useful.

It consists in the peculiar construction and arrangement of the parts, as hereinafter more fully set forth. Its freedom from noise when operated is a merit greatly desired in the school-room, and peculiar to this invention.

In the accompanying drawings, *a* represents an arm or casting upon which one end of the desk-leaf is fastened, and provided at its inner end with a cylinder, *b*, with the slot *c* in its periphery-rim, having one of its edges interiorly beveled, for a purpose hereinafter set forth. The head of cylinder *b* is provided with a lug, *d*, and a circular hole is made in the center of the cylinder-head *b* for the passage of a headed bolt, *e*, made round near its head, and upon which round part of the bolt-cylinder *b* and lock-plate *m* revolve independently. Bolt *e* is square beyond the round part. The inner face of the cylinder *b* is provided with a lug, *d*, so placed as to operate the lock-plate *m*, hereinafter described.

h represents a projection from the back of the frame of the school-desk casting, to which the desk-leaf casting is to be fastened, and is provided at its outer end with a cylinder, *i*, of slightly smaller diameter than the cylinder *b*,

and adapted to fit into the latter, and around which the cylinder *b* revolves when the desk-leaf is raised or lowered, *i* remaining at all times stationary. The cylinder *i* is provided with a slot, *o*, in its periphery-rim adapted to register with the slot *c* in cylinder *b* when the desk-leaf is raised to the desired position for use, so that the two slots *c* and *o* will receive the catch-bolt *k*, hereinafter described, when it drops by gravitation, and thus hold the desk-leaf firmly in position for use. A square hole is made in the center of the head of the cylinder *i* for the passage of the square end of the headed bolt *e*, and for the purpose of holding the bolt *e* stationary.

k represents a catch-bolt provided with a central rectangular slot, *f*, which straddles bolt *e*, and a catch, *l*, at its lower end, beveled on one side and adapted to engage with the slots *c* and *o* in cylinders *b* and *i* and hold the hinge locked when the desk-leaf is raised for use. The back face of the catch-bolt *k* is recessed to receive the lock-plate *m*, and is provided with an inclined shoulder, *n*, which rests upon the upper corners of the lock-plate *m*, with corresponding inclines holding the lock-plate in place, while at the same time, when the catch-bolt and lock-plate are locked together, the catch-bolt is held in suspension until, in the downward movement of the desk-leaf, the slot *c* in cylinder *b* is carried past slot *o* in cylinder *i*, so that the catch-bolt cannot drop into slot *c* until the desk-leaf is again raised. The lock-plate *m* is provided with a circular hole near its center for the passage of the round part of the bolt *e*, and upon which it is revolved back and forth by the lug *d*, whereby it is locked and unlocked with catch-bolt *k*. The square portion of the bolt *e* passes through the slot in bolt *k*, and in connection with the jaws placed at the upper sides of slot *o*, and being part of the same prevents any lateral or revolving motion of catch-bolt *k*. The bolt *e* also passes through the cylinders *b* and *i*, and serves to hold them together by means of a nut on the square end on the outside face of cylinder *i*. The catch-bolt *k* is rounded on the upper end to correspond with the inner circumference of cylinder *i*. The lug *d* also serves the purpose of a stop-pin, arresting the upward movement of the desk-leaf as soon as bolt *k* and plate *m* are locked together.

In practice, the parts being properly adjusted to each other and the desk-leaf being down, the movement and operations of the various parts and the results obtained therefrom may be described as follows: When the desk-leaf is down the lock-plate *m* and catch-bolt *k* are unlocked, and bolt *k* is free, with its lower end, *l*, resting in slot *o*. When the desk-leaf is raised to a horizontal position for use slot *c* is carried immediately under slot *o*, when bolt *k* drops by gravity into slot *c*, and the desk-leaf is held firmly in position for use. When it is desired to lower and close the desk-leaf it is first raised to a position nearly vertical. By this movement the beveled end of catch-bolt *k* is pressed by the corresponding bevel of slot *c*, and the catch *l* is thereby raised out of slot *c*, while slot *c* is moved round and upward. At the same time and by the same movement lug *d* on the inner face of cylinder *b* is carried upward and engages with the upper end of lock-plate *m*, throwing it into the recess upon the back face of catch-bolt *k*, the inclined shoulder *n* on bolt *k* resting upon the upper end of lock-plate *m*. *k* and *m* are thus locked together, while at the same time *k* is slightly raised, so as to free it from friction at the lower end, *l*. *k* is thus locked and held in suspension while the desk-leaf is lowered until slot *c* moves around and passes slot *o*, immediately after which and by the same downward movement of the desk-leaf lug *d* engages with the lower end of lock-

plate *m*, forcing the upper end of the lock-plate back and out of the recess on the back face of bolt *k*, and unlocking the two, so that bolt *k* is again free to fall by gravitation when the desk-leaf is again raised. When *k* and *m* are thus unlocked the upward movement of the desk-leaf to a horizontal position will again put it in position for use.

I am aware that the combination of a desk-standard, a swinging arm, a pivot-pin connecting the standard and arm, and an automatic bolt mounted between the arm and standard around and loosely upon the pivot is not new, broadly, and I therefore lay no claim to such combination broadly.

What I claim as my invention is—

1. The combination, with the slotted cylinder *b*, having lug *d*, of the slotted catch-bolt *k*, having inclined shoulder *n* and catch *l*, and lock-plate *m*, substantially as described, and for the purpose set forth.

2. The combination, with the slotted cylinders *b* *i*, having arms *a* *h*, of the lock-plate *m*, lug *d*, slotted catch-bolt *k*, recessed on its back and provided with the catch *l* and inclined shoulder *n*, and headed bolt *e*, round near its head and square above, substantially as described, and for the purpose set forth.

CHARLES M. HUGHES.

Witnesses:

L. B. PEASLEE,
S. T. SUTPHEN.