

(No Model.)

W. KOTHE.
SHUTTLE BINDER FOR LOOMS.

No. 270,228.

Patented Jan. 9, 1883.

Fig. 1.

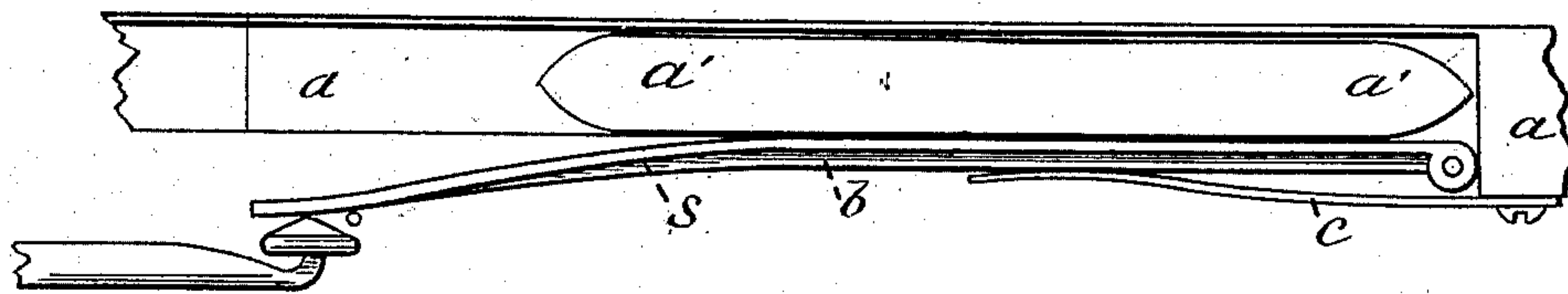


Fig. 2.

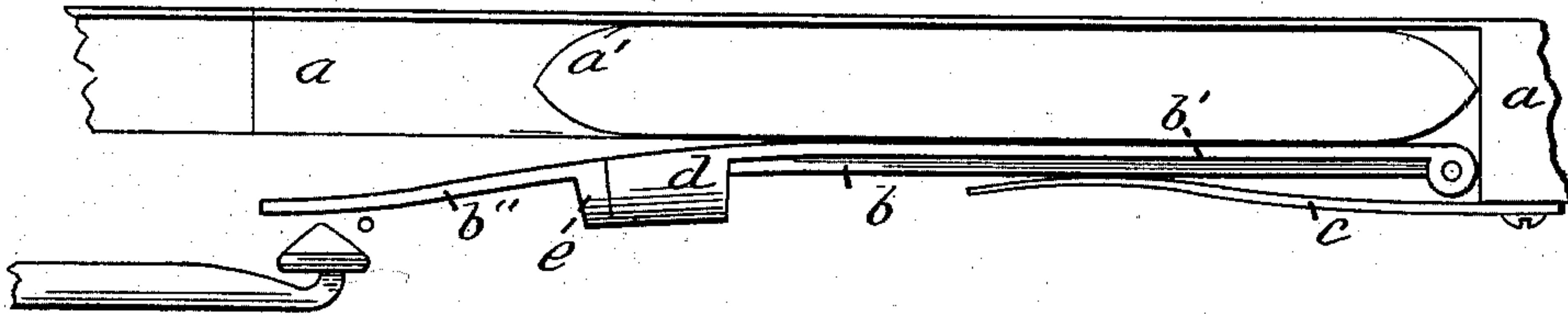


Fig. 3.

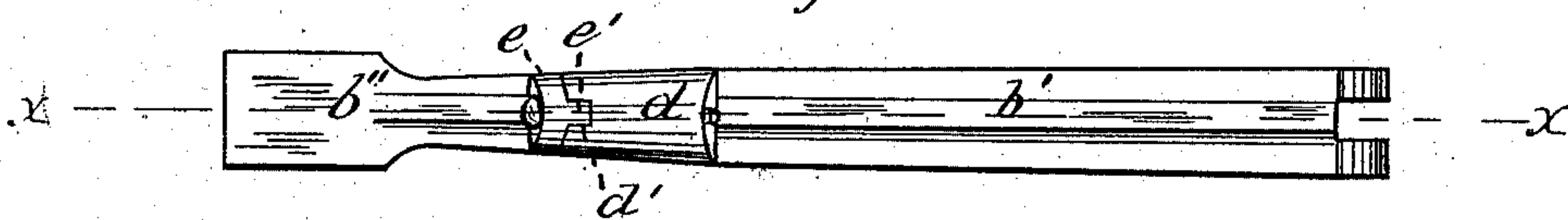
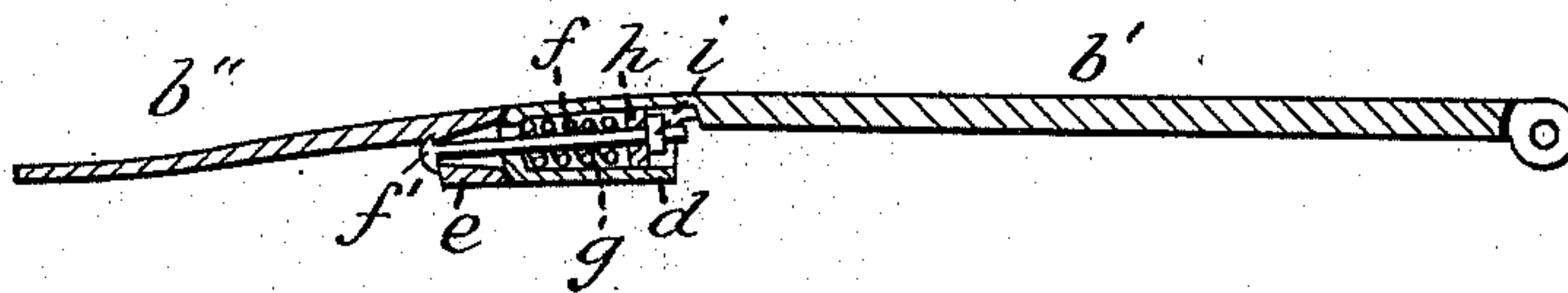


Fig. 4.



Witnesses.

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WILLIAM KOTHE, OF ROCKVILLE, CONNECTICUT.

SHUTTLE-BINDER FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 270,228, dated January 9, 1883.

Application filed February 17, 1882. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM KOTHE, of Rockville, in the county of Tolland and State of Connecticut, have invented a certain new and useful Improvement in Shuttle-Binders for Looms, of which the following is a description, reference being had to the accompanying drawings, where—

Figure 1 is a top view of a shuttle, an old form of binder, and part of a shuttle-box of a loom. Fig. 2 is a top view of the same parts, but showing my improved binder. Fig. 3 is a face view of my binder. Fig. 4 is a view in longitudinal horizontal section of said improved binder on line *xx* of Fig. 3.

My invention relates to the kind of shuttle-binder that is pivoted to the shuttle-box and is actuated by the pressure of a leaf-spring fast to the box and pressing horizontally upon the binder about midway of its length.

It consists in making the binder with a spring-hinge at one point of its length, so that the outer end of the binder yields to a certain degree to the impact of the protection-finger without material change in the general form and office of the binder.

In the accompanying drawings, the letter *a* denotes a shuttle-box of ordinary construction; *a'*, a shuttle; *b*, a binder (of metal, as iron) as a whole; *c*, a binder-spring, of steel.

My improved form of binder, *b*, as shown in Figs. 2, 3, 4, is made up of binder part *b'*, with the usual vertical perforations at one end for pivotal connection to the shuttle-box, and at the other end a projection, *d*, forming a socket for a bolt, *f*, and spring *g*, and of binder part *b''*, which has a similar projection, *e*, with a transverse tenon, *e'*, fitting in a corresponding mortise, *d'*, in the projection *d* of part *b'*. The bolt *f* passes through projections *d* and *e* and through the spiral spring *g* and terminates at one end in a head, *f'*, taking against projection *e*, and at the other end is provided with a nut, *i*, and washer *h*, which is shaped to fit the cross-section of the socket in projection *d*, and slides readily in it. The spring *g* is seated in the socket in projection *d*, with one end pressing against the end wall of said socket and the other end against the washer *h* in such manner that when the binder is bent by press-

ure upon its outer end and toward the shuttle the recoil of the spring restores the binder to its usual form as soon as the pressure is removed. When the shuttle passes into the box back of this binder it does not bend outward at the joint described, but moves as a whole against the pressure of the binder-spring like the old binder, the connection between the binder parts being so constructed, as shown, as to permit bending toward the shuttle only under pressure upon the outer end.

The old form of binder is bent inward by impact of the protection-finger when the shuttle is caught partly within the box, and sometimes the blow smashes a shuttle and many of the warp-threads. After such bending the binder has to be straightened, only to be bent again, however, so that the life of a binder is short, many breaking at about the point *s*, Fig. 1, after a few days' wear. My improved binder overcomes and obviates these defects, as it acts as a buffer to the blows of the protection-finger, and at the same time forms a more perfect binder than the old one, the outer binder part *b''* closing in slightly against the recoil of the shuttle from the box.

Another advantage of my improvement is that the material (malleable iron) of the old form is replaced by cast-iron in my new device, as there is no need of any elasticity in the metal itself, and a saving of over two hundred per cent. in cost is effected.

I claim as my invention—

1. In combination, binder part *b'*, binder part *b''*, spring *g*, bolt *f*, nut *i*, and washer *h*, all substantially as described.

2. In combination, binder part *b'*, provided with projection *d*, having mortise *d'*, binder part *b''*, provided with projection *e*, having tenon *e'*, bolt *f*, spring *g*, nut *i*, and washer *h*, all substantially as described.

3. In combination, box *a*, spring *c*, and binder *b*, formed of parts hinged together and adapted to bend in one direction only, all substantially as described.

WILLIAM KOTHE.

Witnesses:

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