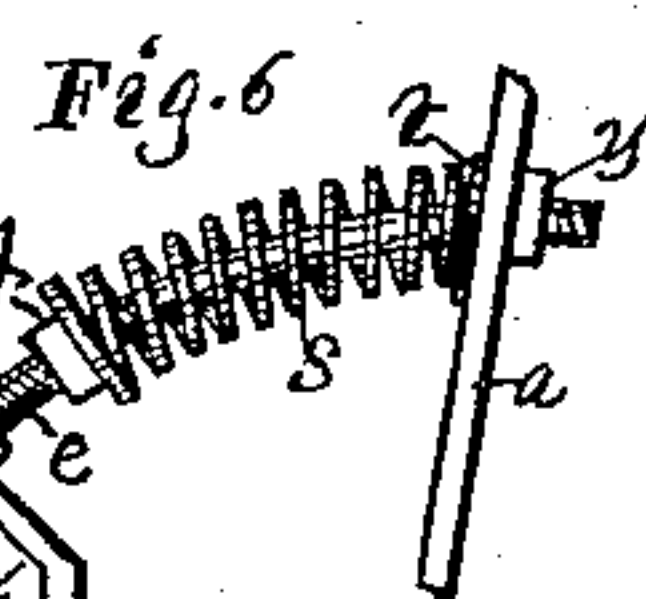
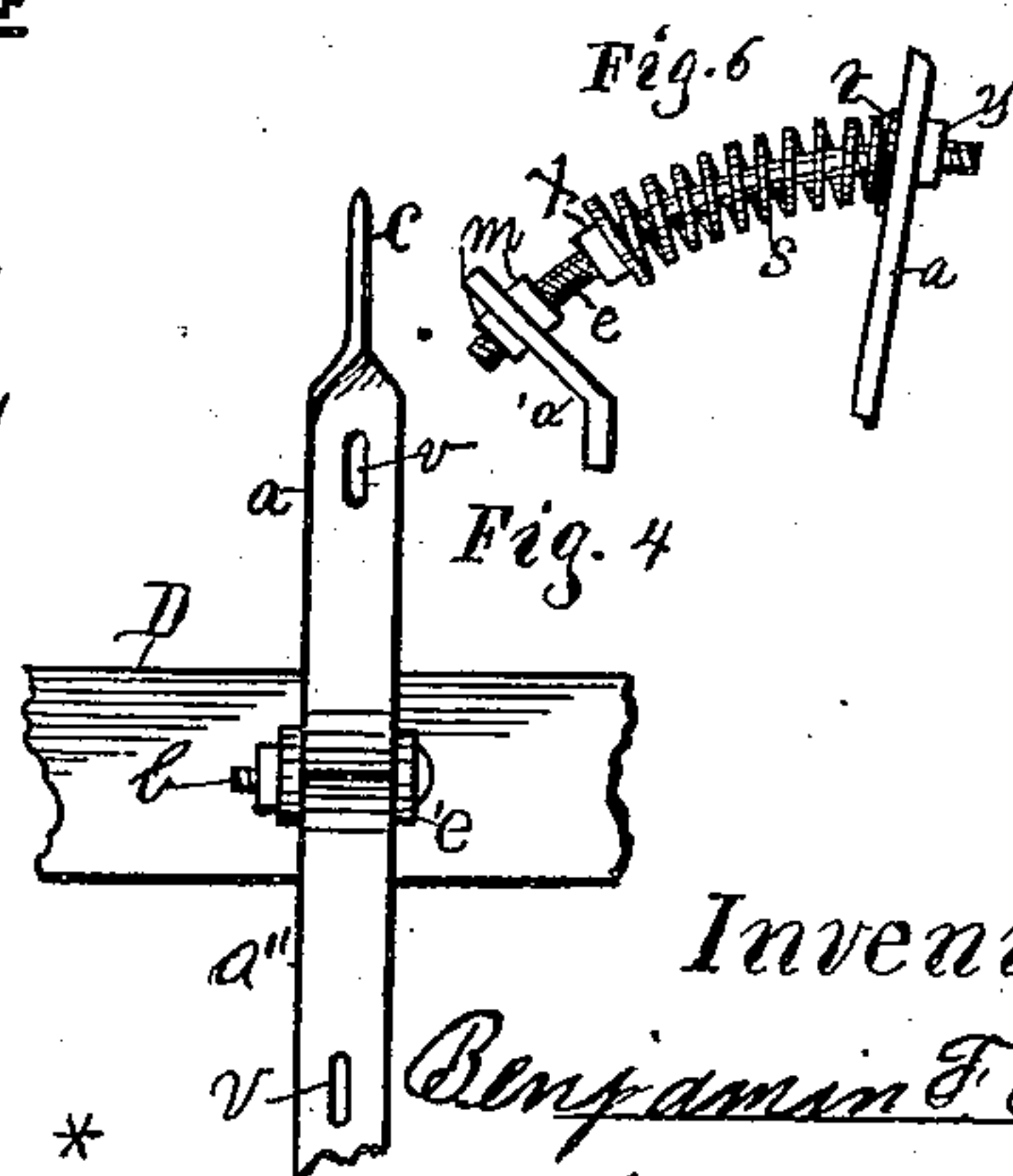
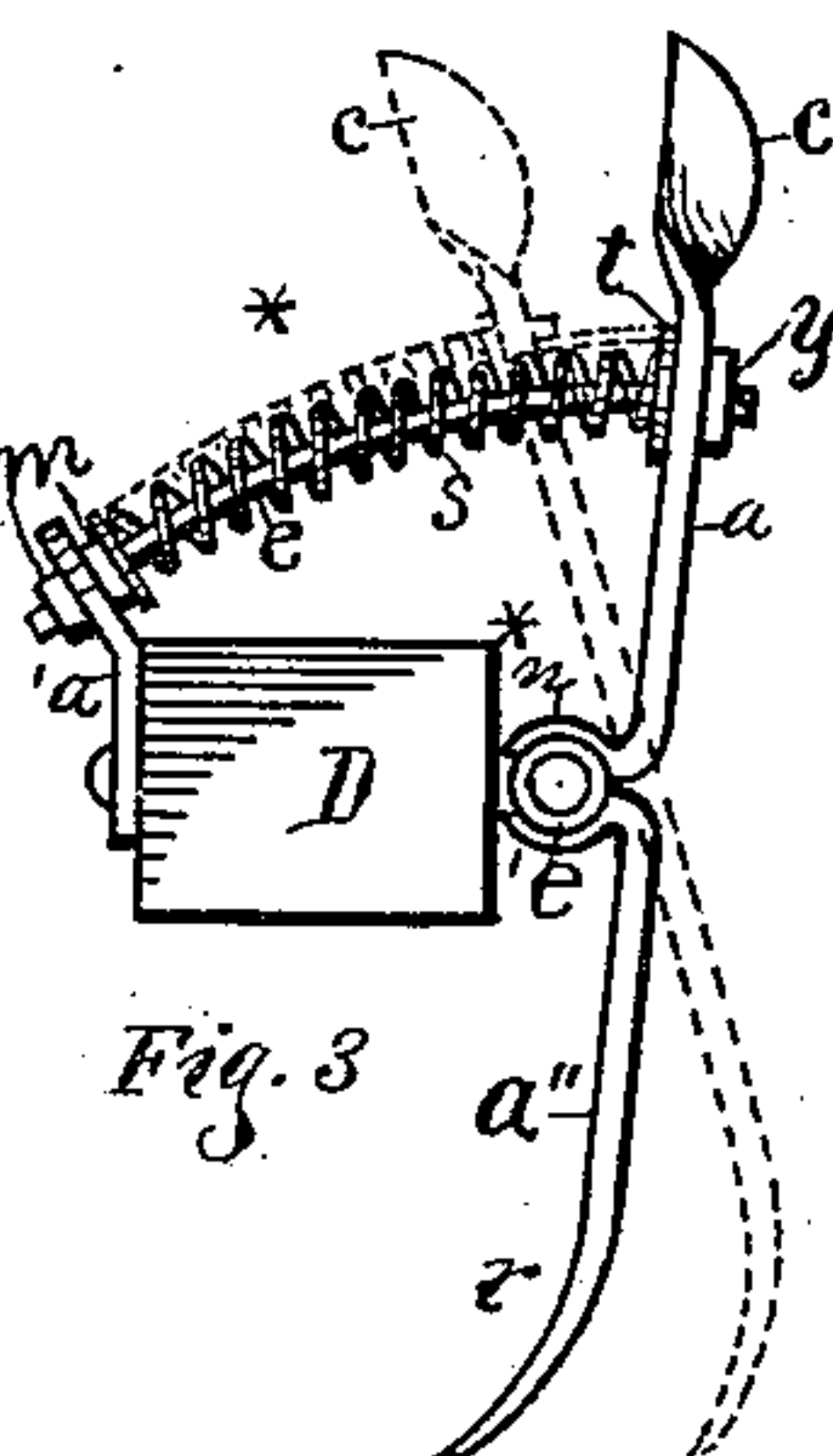
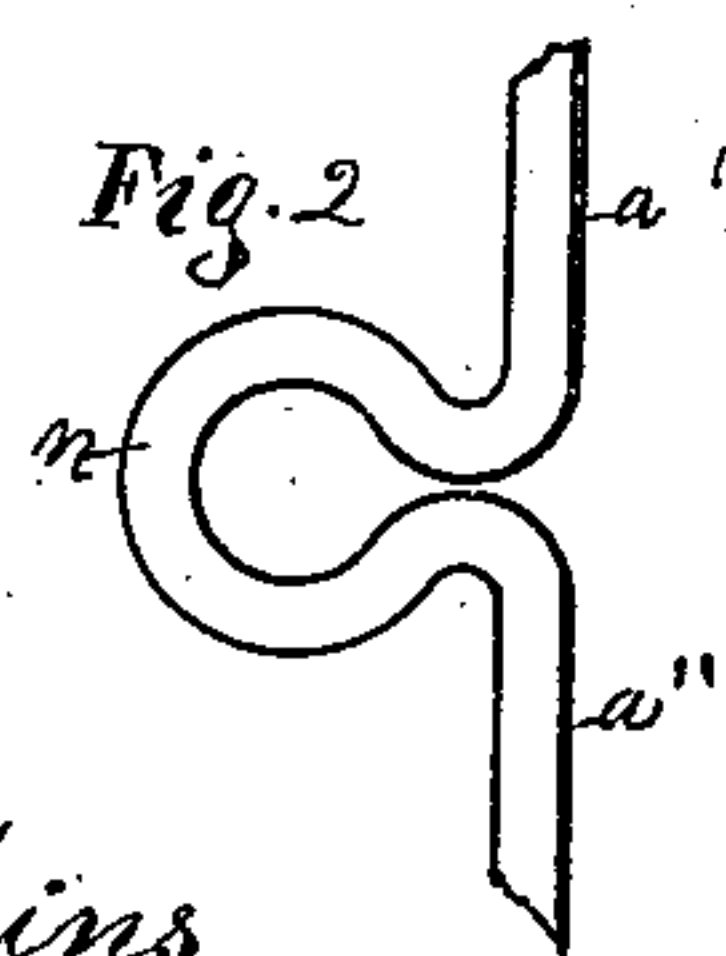
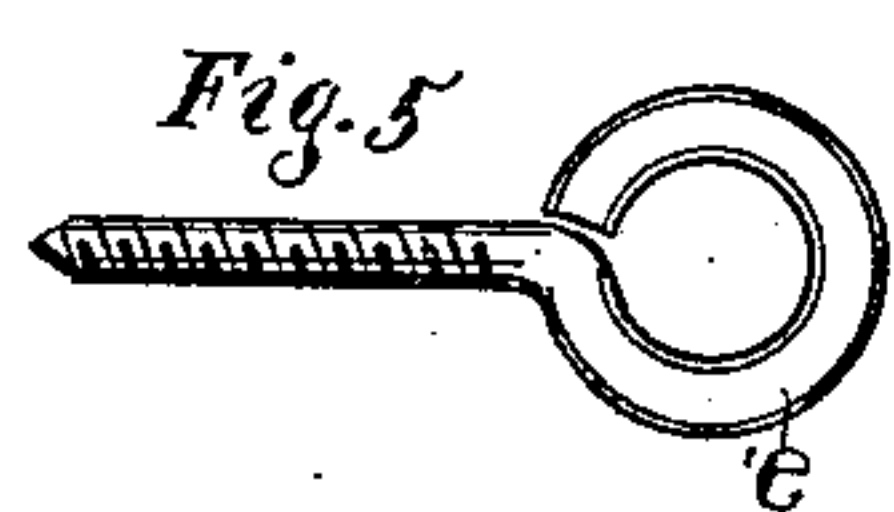
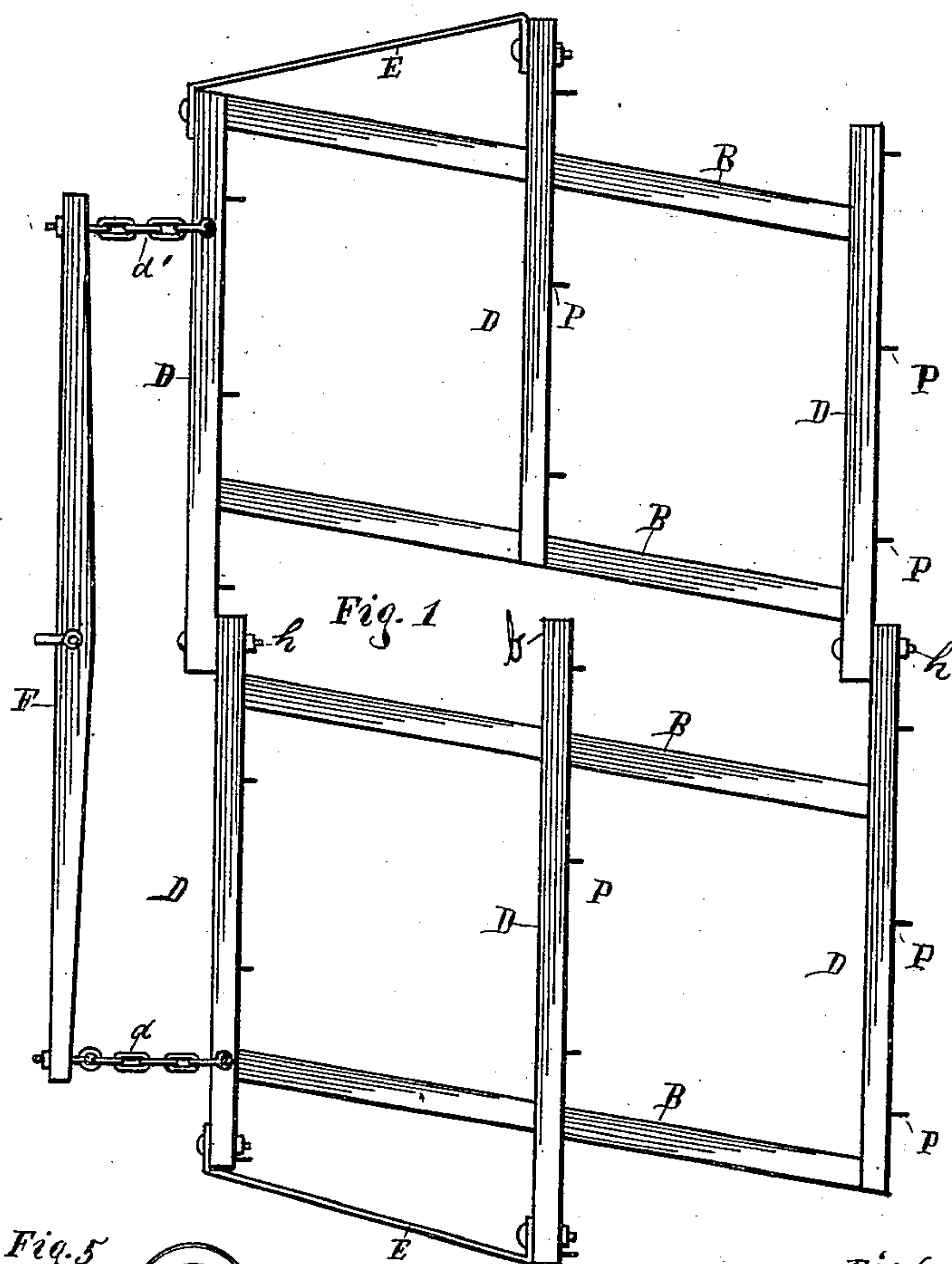


(No Model.)

B. F. RIX.
HARROW AND SOD CUTTER.

No. 246,417.

Patented Aug. 30, 1881.



Attest
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UNITED STATES PATENT OFFICE.

BENJAMIN F. RIX, OF KALAMAZOO, MICHIGAN, ASSIGNOR OF ONE-THIRD
TO HOMER O. HITCHCOCK, OF SAME PLACE.

HARROW AND SOD-CUTTER.

SPECIFICATION forming part of Letters Patent No. 246,417, dated August 30, 1881.

Application filed May 2, 1881. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN F. RIX, a citizen of the United States, residing at Kalamazoo, county of Kalamazoo, State of Michigan, have invented a new and useful Harrow and Sod-Cutter, of which the following is a specification.

My invention relates to that class of soil-working implements the teeth or shares of which have an oscillating or spring movement imparted to them by means of coil-springs connected therewith.

The object of my invention is to effect certain improvements in the construction of a harrow embodying the above principles, whereby greater economy and utility are effected.

A further object is to construct a compound double-pointed reversible harrow-tooth and sod-cutter of substantially the construction herein set forth, whereby a field unplowed or a summer fallow well grown to grass may be prepared for seeding in a speedy and effectual manner.

In the drawings forming a part of this specification, in which similar letters of reference indicate like parts, Figure 1 is a top view of my harrow-frame; Fig. 2, center view of share, showing its connecting-eye; Fig. 3, a side elevation of share and connections; Fig. 4, back view of share; Fig. 5, an eye-headed screw for connecting the share with the frame, and Fig. 6 a view showing a mode of stiffening the spring without changing the angle of the share.

To construct my compound harrow-tooth and sod-cutter I bend a strip of metal, forming eye *n* near its center, Fig. 2. The lower end, *a''*, I bend forward, forming the harrow-tooth end, *r*, and the upper end, *a*, I turn half around, setting the edge at right angles with the tooth portion, thus forming the sod-cutter end *e*, the straight edge of which I sharpen. Above and below eye *n*, I form oblong holes *v v*.

The device is jointedly connected with the beam *D* of the frame by means of two eye-headed screws, *e'*, inserted in the rear side of the beam, and by bolt *b*, passing through said eyes and eye *n* of the tooth and cutter, Fig. 4.

To the front side of beam *D* is secured plate *a'*, the upper portion of which is bent

backward at an oblique angle. In a hole in this oblique portion is located one end of the curved rod *e*, where it is held securely by the two nuts, one on either side of plate *a'*, as seen at *m*, Fig. 3. This rod *e* passes through spring *S*, and its upper end is loosely or movably located in the oblong slot *v* in the portion of the share which is uppermost. The rod thus located describes an upward-extending curved incline, by means of which and the oblong slot *v* the top of the share readily traverses the plane of a fractional portion of a circle in its oscillation. The upper end of rod *e*, both ends of which are threaded in the construction shown, is held by nut *y*, by means of which the angle of the share is fixed by screwing said nut farther on, or the reverse. This also controls the elasticity of the spring *S*, which feature is further explained in the operation.

By means of this manner of constructing and arranging the parts I am able to more accurately and readily govern the tooth and spring and to set the end *r* of said share or tooth at a point farther in the rear than by previous constructions.

For the most practical working of my device above set forth I have constructed a frame of the following peculiar form, in which great strength of parts is effected:

B B are parallel beams located at an oblique angle with the line of draft, having beams *D D* bolted across them, to the two front ones of which are secured braces *E E*. The two wings are thus formed just alike, with the exception of the extending beam end *b*, and are connected together with their dissimilar ends respectively located at the front and rear. The wings are movably connected by bolts *h h*, to compensate for the difference in the distance between the evener *F* and the wings, respectively. I make chain *d* longer than chain *d'*.

In the operation of my device, by locating the cutter end *e* in the soil, I can cut unplowed sod and a summer fallow well grown to grass up in little squares by traversing reverse ways over the field. Then by reversing the share ends said squares of sod can be all displaced and thoroughly pulverized. In the latter operation the end *r* should be set well forward.

My share device may be used as above in pro-

paring the ground between standing corn for seeding, and also is well adapted for corn-cultivating. By locating the share at the angle indicated by the stars in Fig. 3, a growing field
5 of wheat can be more rapidly and effectually harrowed than by any other device known to me, for the reason that the end *r* will not cut the wheat out, but, owing to the increased stiffness of spring *S* and the angle at which the
10 share end is located, will scratch among it with much the same careful effect of hand-harrowing.

Referring to Fig. 6, the extra nut, *X*, located on the curved rod *e*, between the inner nut, *m*,
15 and the lower end of spring *S*, for the purpose of stiffening the spring without changing the angle of the share, may be turned up or down the rod *e*, in accordance with the effect on spring *S* desired. In this figure said nut has
20 been moved upward, which has contracted the coil of the spring, and thus made it stiffer than the one shown in Fig. 3.

I am aware that previous to my invention coil-springs have been employed to impart an oscillating movement to teeth and shares in
25 different devices; also that reversible teeth, *per se*, are not new with me; hence

What I claim, and desire to secure by Letters Patent, is—

In a cultivating device having shares operated by coil-springs, the combination, substantially as set forth, of the share-beams having obliquely-angled plate *a'*, the reversible
30 tooth, and the curved rod bearing the spring, the upper end of said rod being loosely located
35 in the oblong slot of the share, to effect the objects set forth.

BENJAMIN F. RIX.

Witnesses:

H. O. HITCHCOCK,
THOMAS RIX.