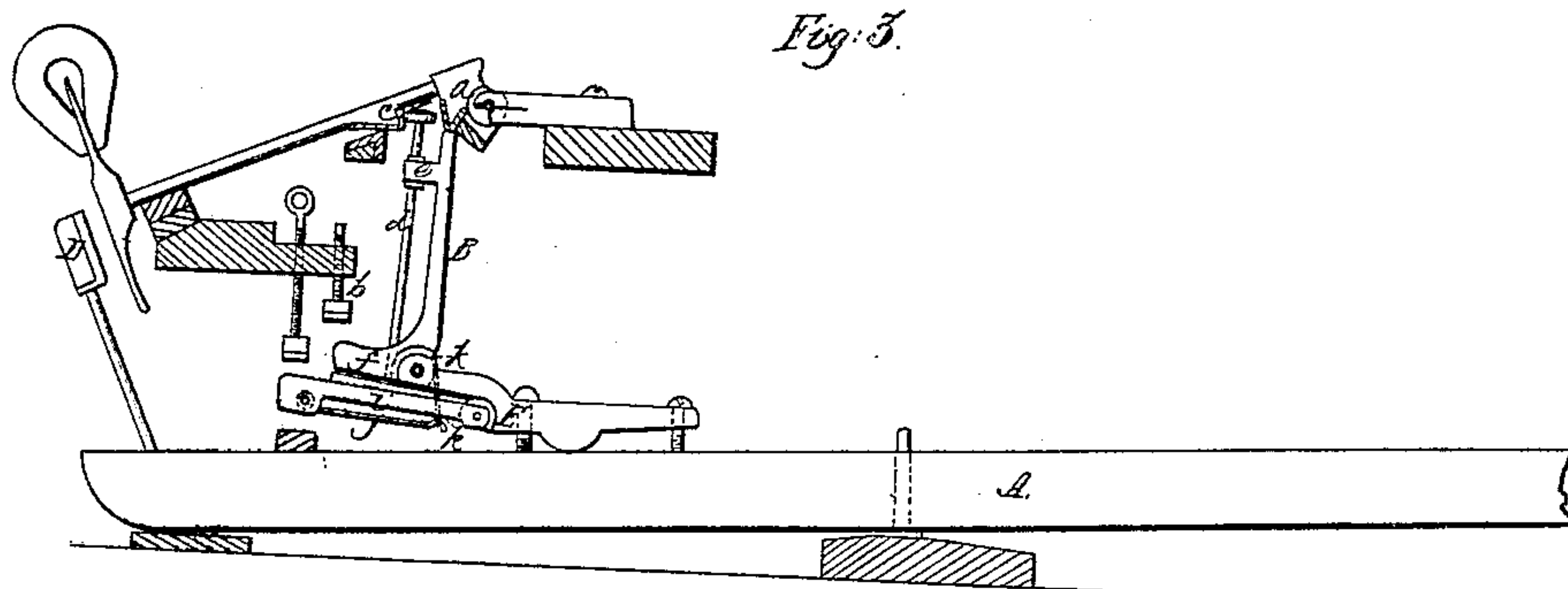
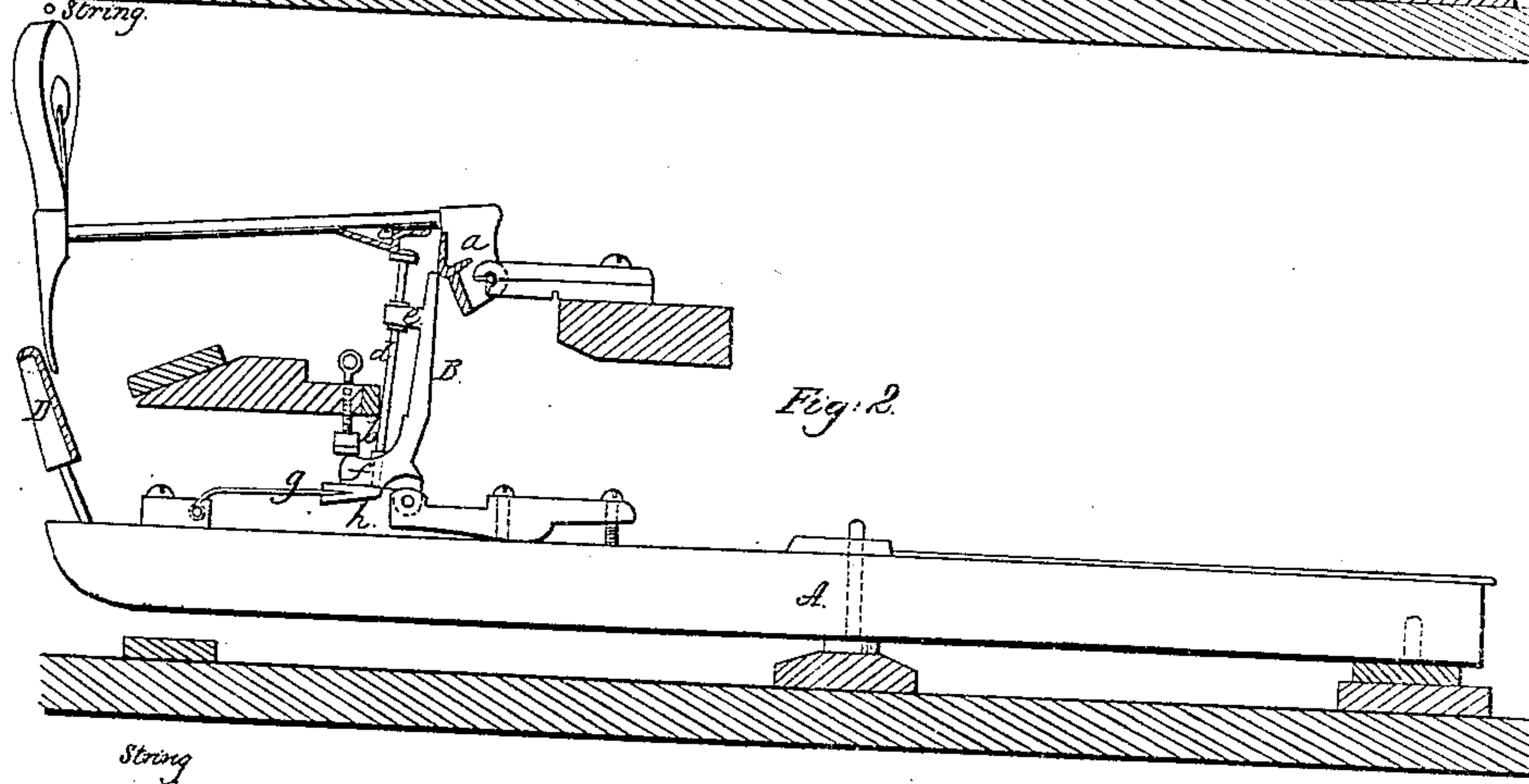
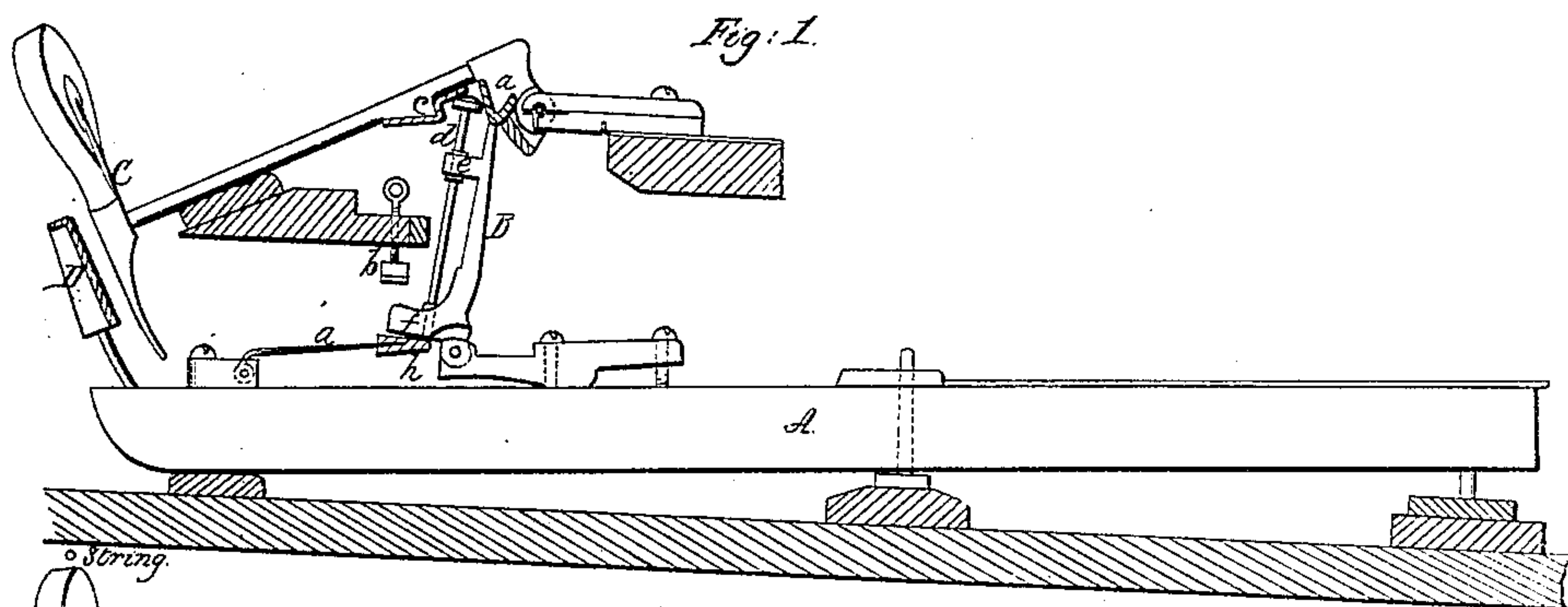


No. 17,238.

PATENTED MAY 5, 1857.

H. STEINWAY, JR.
PIANOFORTE ACTION.



UNITED STATES PATENT OFFICE.

HENRY STEINWAY, OF NEW YORK, N. Y.

PIANOFORTE-ACTION.

Specification of Letters Patent No. 17,238, dated May 5, 1857.

To all whom it may concern:

Be it known that I, HENRY STEINWAY, of the city, county, and State of New York, have invented a new and useful Improvement in Pianoforte-Actions; 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 side view of an action with my improvement adapted for square pianofortes, exhibiting the parts at rest. Fig. 2, is a side view of the same action-exhibiting it in a condition to repeat. Fig. 3, is a side view of an action with my improvement adapted for.

Similar letters of reference indicate corresponding parts in the several figures.

My invention is an improvement in the pianoforte action for which Letters Patent of the U. S. were granted to John H. Morton, dated September 18, 1855. In that action, the jack is returned to its notch in the hammer butt to enable the repetition of the blow of the hammer to be effected, through the agency of a small lever pivoted to the jack and resting on a post which works through the heel of the jack and is supported on the jack bottom, said lever being acted upon by a block or projection on the under side of the hammer shank.

My invention consists in substituting for the said lever and post, a single sliding post working through a guide block on the upright portion of the jack and through the heel thereof and resting on a spring or elastic bearing attached to the key below the jack, by which means I obtain a more free and easy movement of the action in repeating and am enabled to stop the hammer near to the string, and also obtain the effect only produced in the complicated Erard grand-action, viz: the lifting of the hammer for the jack to slide under the butt by the act of raising the finger to allow a slight rise of the playing end of the key, while my improved action is inferior to none of the so-called repeating actions in point of simplicity.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A, is the key.

B, is the jack, substantially like that of

what is known as the French action, and the same as used by Morton.

C, is the hammer having the usual French butt *a*.

b, is the regulating screw for the jack. 65

D, is the back check.

c, is the block under the hammer shank as used by Morton, but by my improvement this is allowed to be brought much nearer to the hammer butt and center of motion of the hammer, which is desirable. 65

d, is the sliding post which constitutes the principal feature of my improvement, which I make generally of wire with a button-shaped head of wood or other hard material, to work under the block *c*. 70

e, is the guide block attached to the upper portion of the jack B, for the post *d*, to work through, the guide in the said block as well as the guide for the said post in the heel *f*, of the jack being lined with cloth or leather. The post *d*, is parallel or nearly so with the upright portion of the jack. 75

g, Figs. 1 and 2, is a spring attached at its rear end to the key A, and having at its front end a cushion *h*, standing under the heel of the jack for the lower end of the sliding post *d*, to rest upon, said spring also acting upon the heel of the jack to throw the point thereof into the notch in the hammer butt. 80

The operation of the action shown in Figs. 1 and 2, is as follows: When the key is at rest, as shown in Fig. 1, the cushion *h*, of the spring *g*, bears against the bottom of the heel of the jack and holds its point in the notch of the hammer butt, and the post *d*, rests upon the cushion *h*, with its head in the space between the block *c* and the hammer butt. When the front end of the key is struck in playing the jack acts upon the hammer butt in the same manner as in the ordinary French action and as the jack escapes the head of the post *d*, moves under the corner of the block *c*. When the hammer falls, it is caught by the back check D, in the usual manner and by the momentum of its fall acting upon the post *d*, and through it on the cushion *h*, it slightly bends down the spring *g*, and depresses the cushion *h*, thereof below the heel of the jack, in which condition the spring is held by the action of the back check on the hammer so long as the back check is allowed to remain in operation, but as soon as the play- 110

ing end of the key is permitted to rise in the slightest perceptible degree or only just sufficient to liberate the hammer from the back check, the spring *g* gives out its elasticity and lifts the cushion *h*, up again to the heel of the jack, and in so doing lifts the hammer nearer to the string by pushing up the post *d*, thus effecting the result produced in the grand action and producing an entirely different effect to that produced in Morton's action, in which the hammer begins to fall with the slightest rise in the playing end of the key. The spring *g*, by whose aid this effect is produced could not be applied with much advantage to the lever and post used by Morton, owing to the lever describing a circle from the jack and consequently dragging under the block *c*, and to the uneasy movement produced by the circular motion of the lever and the rectilinear motion of its connected post. The rise of the hammer, as just above stated, brings the notch in the butt *a*, sufficiently high for the point of the jack to fall partly under it, and a very slight further rise of the playing end of the key, permits the said point to be forced far enough under the notch to enable the blow to be repeated by the weight of the hammer acting through the block *c*, on the post *d*, in the same manner as the said block acts upon the lever of Morton's action, thus enabling the repeat to be effected with a movement of the key almost imperceptible to the eye.

35 In the grand action represented in Fig. 3, instead of the spring *g*, and cushion *h*, I

employ a lever *i*, and spring *j*, as shown in Fig. 3, the said lever being hinged at its front end under the jack bottom E, and having a spring attached to its free rear end and connected with the jack B, by a cord *k*, passing through the bottom E. The post *d*, rests on the lever *i*, and the spring *j*, serves to lift the post *d*, to raise the hammer when the front end of the key is allowed to rise, in the same manner as the spring *g*, in the square action, the same spring serving also to pull the point of the jack into the notch in the hammer butt. The employment of the lever *i*, and spring *j*, is preferable, as it allows a regulating screw *l*, to be used to regulate the height to which the post *d*, rises and to allow the spring to act upon the jack independently of the post *d*, but in the square piano there is not generally height enough and the spring *g*, and cushion *h*, operate very satisfactorily.

I disclaim everything described in the Letters Patent of John H. Morton; but

I claim as my invention and desire to secure by Letters Patent:

The sliding post *d*, and spring *g*, or *j*, or its equivalent, applied, substantially as described, in relation to the jack and key to operate as set forth, in combination with a block *c*, on the hammer shank, for the purpose specified.

H. STEINWAY.

Witnesses:

W. TUSCH,
J. W. COOMBS.