R. KRETER.

Piano Actions.

No. 145,879. Patented Dec. 23, 1873.

Fig. 2.

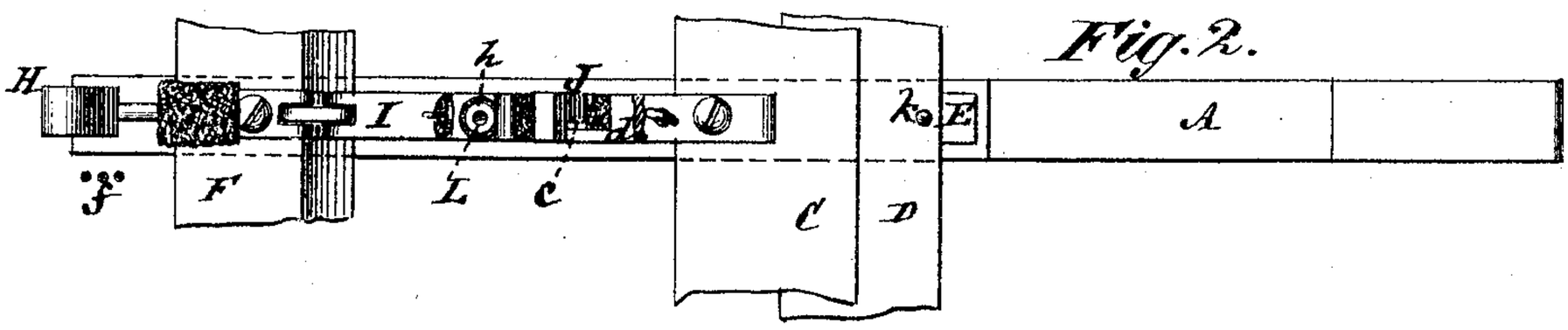


Fig. 1.

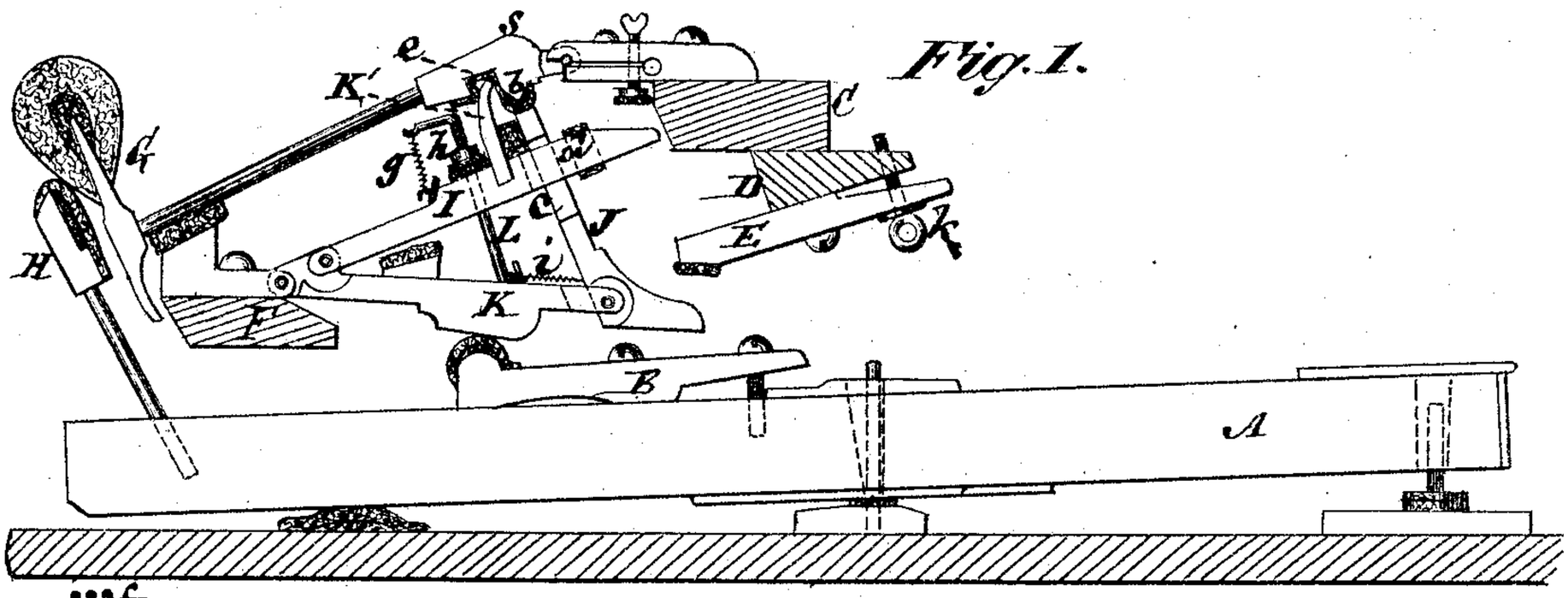


Fig. 4.

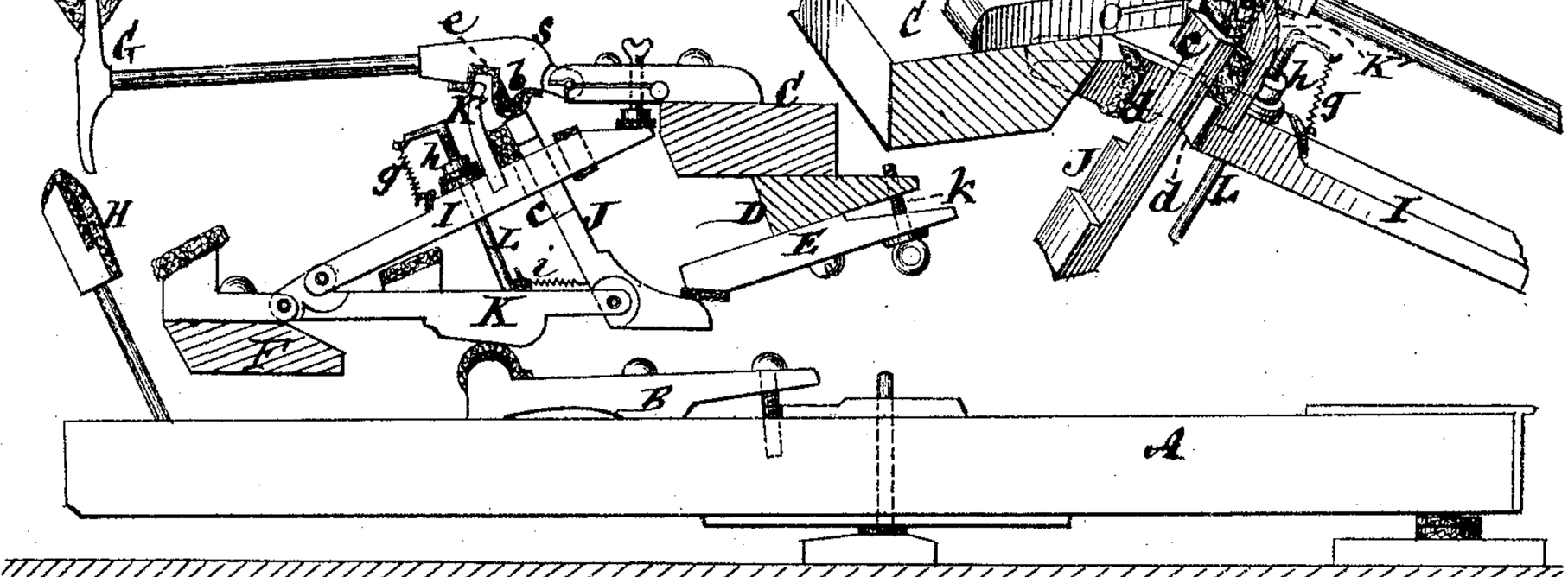
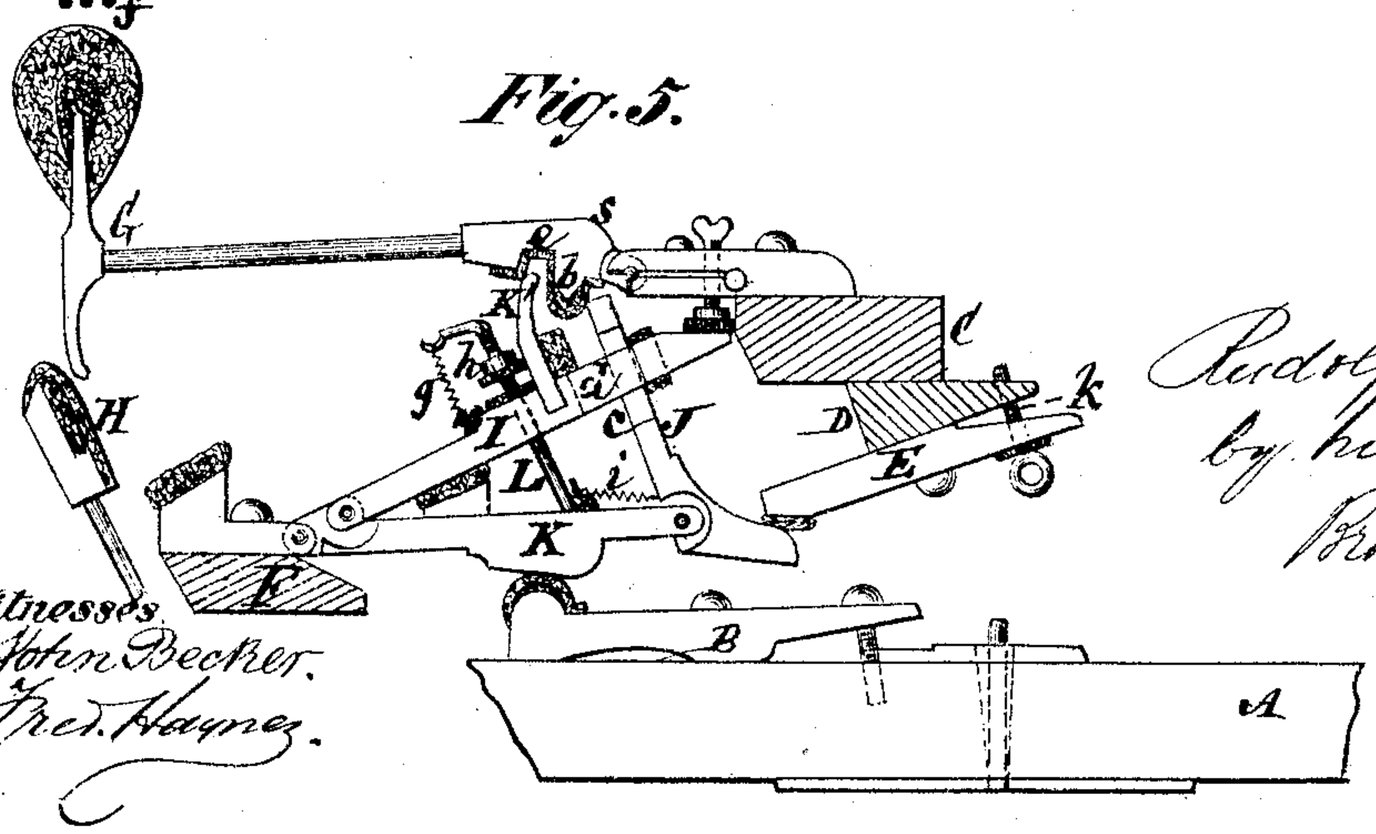


Fig. 3.

Fig. 5.



Witnesses
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UNITED STATES PATENT OFFICE.

RUDOLPH KRETER, OF NEW YORK, N. Y.

IMPROVEMENT IN PIANO-ACTIONS.

Specification forming part of Letters Patent No. **145,879**, dated December 23, 1873; application filed November 22, 1873.

To all whom it may concern:

Be it known that I, RUDOLPH KRETER, of the city, county, and State of New York, have invented certain Improvements in Piano-Forte Actions, of which the following is a specification:

This invention mainly relates to what is known as the Erard action for piano-fortes, and consists partly in an improved construction of the repeating-lever and jack; also, in providing the repeating-lever with a steadying-tongue or repeating-check, and in a post or wire holding the spring which controls the repeating-lever, and a regulating-button for adjusting the repeating-lever irrespective of the jack; also, in the novel construction of the letting-off prop. By these improvements, and other changes of construction pertaining thereto, a more perfect and free action is obtained, and much of the action may be made by machinery that heretofore has been made by hand.

Figure 1 represents an elevation of my improved action when at rest; Fig. 2, a plan of the same, with the hammer removed and hammer-butt broken away; Fig. 3, a perspective view, in part; Fig. 4, an elevation of the action after the hammer has struck, and with the jack supporting the same; Fig. 5, a similar view prior to the falling of the jack under the hammer, and with the hammer under the control of the repeating-check.

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

A is one of the keys of a piano-forte, and B the bottom or support for the lower lever of the action pertaining to said key. C is the hammer-rail; D, the let-off rail; E, the let-off prop, and F the action-rail. G is the hammer; H, the regular hammer-check; I, the repeating-lever; K, the bottom lever, and J the jack; K′, the repeating-check.

The jack J, instead of being arranged to project through a slot in the repeating-lever I, to take its bearing under the shoulder *b* of the hammer, as is the usual construction, is cut away on its one side, as at *c*, and the repeating-lever made with a similar cut, *d*, whereby not only is there less tendency of the jack to rub or bind, but I am enabled to give the jack even a broader bearing-surface in its support of the hammer than the leathering of the shoulder *b*, thereby doing away with that liability, which heretofore has been, of the jack wearing a hole or depression in the leathering of the shoulder *b*, to the interference of the regular and proper working of the action, and to the sticking of the jack in the leathering of the shoulder. The knuckle or butt S of the hammer is constructed with a recess, *e*, in its under side, immediately in front of the shoulder *b*, and the leathering of the shoulder extended so as to line the same. The object of this recess is to provide for the reception of a curved tongue or repeating-check, K′, on the lever I, which, as the hammer leaves the strings *f*, serves, by rubbing or bearing against the front or one side of the leathered recess *e*, to temporarily hold in check the hammer in advance of the jack J falling under the shoulder *b*, and of the hammer coming down on the permanent check or rest H, as illustrated in Fig. 5, and whereby a very rapid repeating action may be obtained, and the hammer is restrained from "dancing," and the hammer held up till the jack J gets under the shoulder *b*. L is a post or wire arranged to project from the bottom lever K, and to pass up through the repeating-lever I, and bent at its upper end for the attachment of a spiral spring, *g*, to control the action of the repeating-lever, subject to an adjusting-button, *h*, arranged to fit a screw-thread on the post L, and whereby the repeating-lever may be regulated independently of the jack J, or without interfering with the latter, said jack being controlled by a separate spiral spring, *i*. This arrangement of independent springs, too, does away with that liability to creak or make a noise of the ordinary single wire spring, which is made to control both the repeating-lever and jack, and is supported in a slot in the post, on which the repeating-lever has its fulcrum. The let-off prop E, against which the foot of the jack strikes, is connected, intermediately of its length, by screws or otherwise, with the under side of the let-off rail D, and made adjustable at its outer end by a regulating-screw, *k*, to determine the distance the hammer has to drop off from the string.

I claim—

1. The jack J, cut away on one side, as at *c*, in combination with the repeating-lever I, having a lateral recess, *d*, substantially as and for the purpose or purposes herein set forth.

2. The repeating tongue or check K′ on the lever I, applied to check the descent of the hammer, essentially as and for the purposes specified.

3. The post or wire L, in combination with the levers K I, the spring *g*, and button *h*, substantially as herein described.

4. The let-off lever E and its adjusting-screw *k*, in combination with the rail D and jack J, essentially as specified.

RUDOLPH KRETER.

Witnesses:

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