

UNITED STATES PATENT OFFICE.

FELIKS ZEBROWSKI, OF NEW YORK, N. Y.

UPRIGHT-PIANO ACTION.

SPECIFICATION forming part of Letters Patent No. 389,183, dated September 4, 1888.

Application filed July 17, 1888. Serial No. 230,177. (No model.)

To all whom it may concern:

Be it known that I, FELIKS ZEBROWSKI, of the city, county, and State of New York, have invented certain new and useful Improvements in Upright-Piano Actions, of which the following is a specification.

This invention relates to certain improvements in upright-piano actions by which the motion of the hammer is controlled in a very reliable manner; and the invention consists of an upright-piano action the hammer-butt of which is provided with a downwardly-extending shoe, which is acted upon by an oscillating and spring-acted back-check pivoted to the hammer-rest, said back-check being actuated by a fixed arm applied to the jack-lever, so as to firmly hold the hammer in position close to the string, so as to facilitate repetition.

In the accompanying drawings, Figure 1 represents a sectional side elevation of my improved upright-piano action, showing the same in its normal position of rest and the supporting-rails in vertical transverse section; and Fig. 2 is also a sectional side elevation of the action, showing it in position when the hammer strikes the string.

Similar letters of reference indicate corresponding parts.

A in the drawings represents a jack lever, which is operated by a pivot and key-lever in the usual manner and provided with a fulcrumed spring-jack, B, a damper-actuating spoon, *d*, at the end close to the string, and a bridle-wire, *d'*, at the opposite end, as customary in upright-piano actions. The jack B operates the hammer C in the usual manner by engaging a shoulder in the hammer-butt C'. To the butt C' of the hammer is attached the shank of a downwardly-extending shoe, D, which latter is provided with a cushion, *e*, which works in connection with a similar cushion, *e'*, at the upper end of the jack B. A back-check, E, is fulcrumed to a supporting-lug, *f*, of the hammer-rail C² and acted upon by a spring, *f'*, and adjusted in proper position relatively to the hammer-rail by a set-screw, *f''*, on the upwardly-extending heel *f''* of the back-check E. The back-check E is applied to the shoe D, so as to hold the same and the hammer in position close to the spring by an actuating arm or wire, F, which is rigidly attached to the jack-lever A and provided with a curved upper end that bears

against the face of the back-check E when the hammer strikes the spring, as shown in Fig. 2. By the check-wire F, the back-check E, and the shoe D the hammer is held close to the spring when actuated by the key-lever, so as to facilitate repetition while permitting the dropping of the hammer-back to its rest as soon as the key-lever is released, upon which all the parts are returned to their normal position, as shown in Fig. 1. Simultaneously with the action of the back-check E on the shoe C' the cushion *e'* of the jack B acts on the cushion *e* at the lower end of the back-check and holds thereby the hammer steadily and reliably in a striking position close to the spring, all the parts co-operating for this purpose. The set screw at the upper end or heel of the back-check E permits the accurate adjustment of the same, so as to secure the proper and reliable working of the action.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, with a jack-lever provided with a fixed arm or wire, of a jack pivoted to the jack-lever, a hammer provided with a downwardly-extending shoe, and a back-check pivoted to the hammer-rail and actuated by the said arm or wire, substantially as set forth.

2. The combination, with a jack-lever having a fixed arm or wire, of a jack mounted on said jack-lever, a pivoted hammer having a downwardly-extending shoe, and a spring-actuated back-check pivoted to the hammer-rail and provided with a heel and set-screw at its upper end, substantially as set forth.

3. The combination of a jack-lever having a fixed arm or wire, a jack mounted on said jack-lever and provided with a cushion at its upper end, a hammer having a downwardly-extending shoe provided with a cushion at its lower end facing the cushion of the jack, and a back-check fulcrumed to the hammer-rail and provided with a heel and set-screw at its upper end, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

FELIKS ZEBROWSKI.

Witnesses:

PAUL GOEPEL,
CARL KARP.