

No. 894,612.

PATENTED JULY 28, 1908.

J. DELERUE.  
ACTION FOR UPRIGHT PIANOFORTES.  
APPLICATION FILED MAY 4, 1907.

Fig. 1.

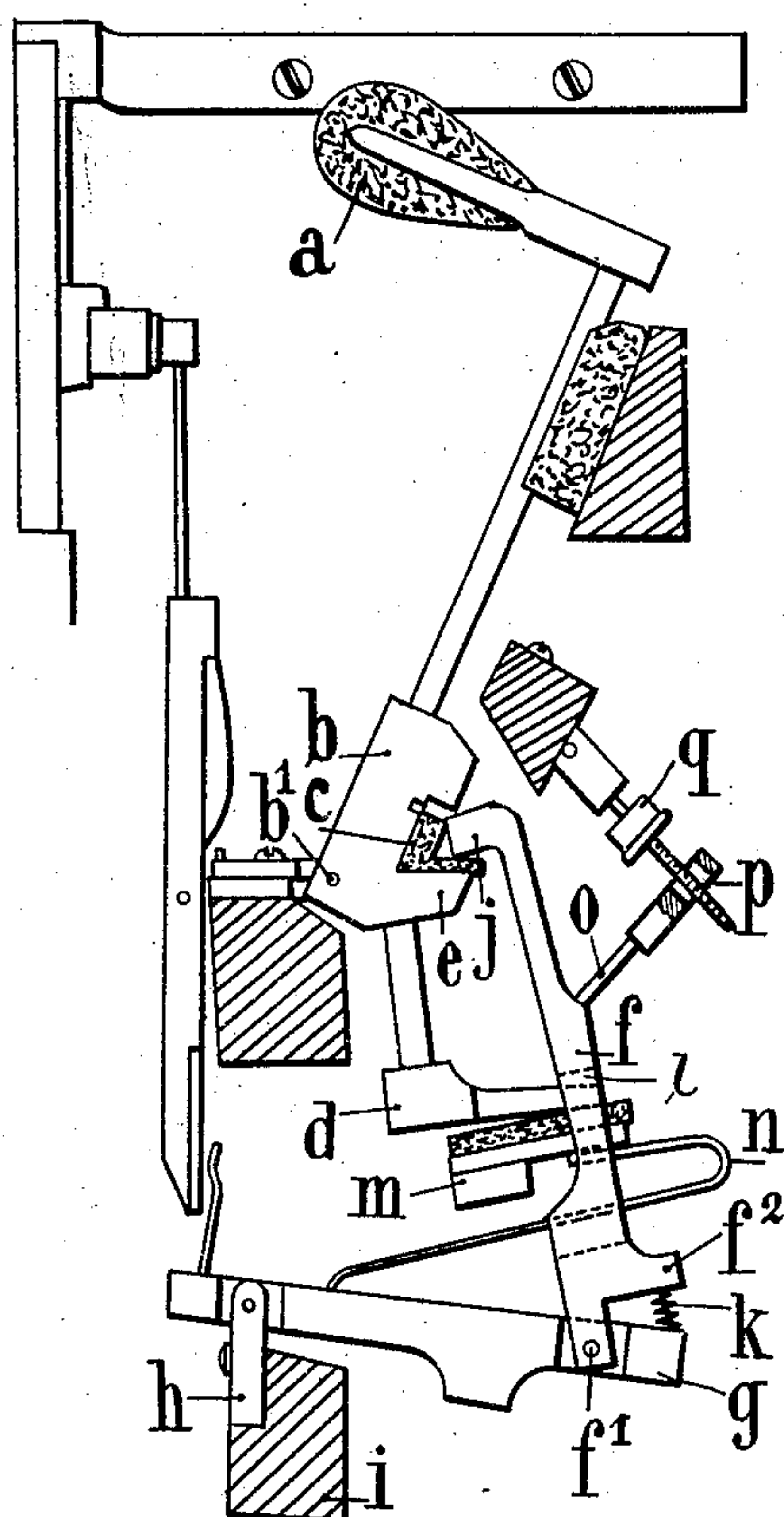
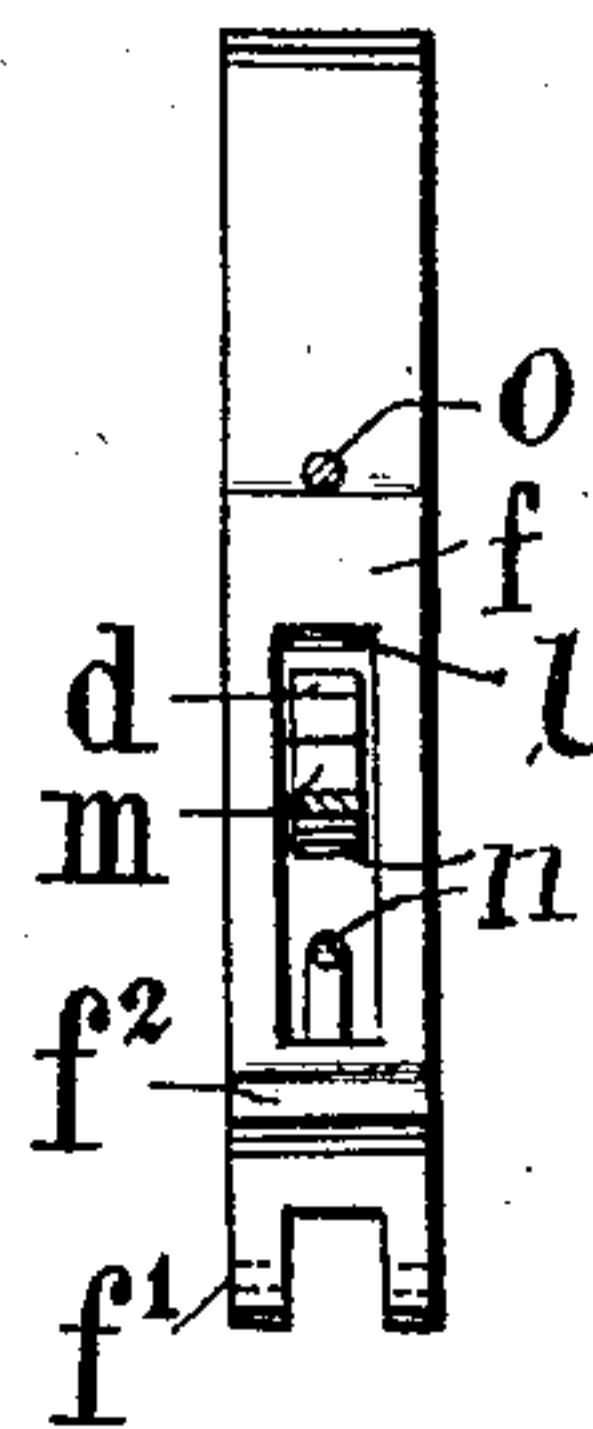


Fig. 2.



**WITNESSES :**

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# UNITED STATES PATENT OFFICE.

JOSEPH DELERUE, OF OPORTO, PORTUGAL.

## ACTION FOR UPRIGHT PIANOFORTES.

No. 894,612.

Specification of Letters Patent.

Patented July 28, 1908.

Application filed May 4, 1907. Serial No. 371,774.

*To all whom it may concern:*

Be it known that I, JOSEPH DELERUE, of 10 Campo da Regeneração, Oporto, Portugal, piano manufacturer, have invented an Action for Upright Pianofortes, of which the following is a full, clear, and exact description.

The invention relates to an action for piano fortes and is especially adapted for upright pianos and consists in certain novel construction and combination of parts hereinafter described and claimed.

This action is provided in a well-known manner with a check arranged under the hammer-butt.

The invention consists essentially in arranging at the upper part of the jack a lateral arm and in mounting the check on a U-shaped spring secured near the axis of the whip and passing through an opening of the jack.

In the accompanying drawing: Figure 1 is an elevation of the action. Fig. 2 is a front view of the jack.

As shown in this drawing, the device comprises a hammer *a* mounted on a hammer-butt *b* pivoted at *b*<sup>1</sup>. This hammer-butt is provided with a notch *c* in which the upper part of the jack engages. A countercheck *d* is arranged on the hammer-butt *b* opposite the hammer and in an inclined position with reference to the prolongation of the latter.

The form and proportions of the hammer butt determine in a great measure the properties of the piano-action. A large distance is preferably left between the articulation *b*<sup>1</sup> and the point of the nose *e*; for an action of this kind, the distance is of at least 27 millimeters.

The jack *f* is pivoted at its lower end at *f*<sup>1</sup> upon the whip *g* pivoted in its turn to a fork *h* secured to the support *i* or to a bar sustaining the parts. This arrangement of the jack has for effect to decrease the space which is required for locating the parts placed in its opening, as hereinafter described. The upper part of the jack is constituted by an angular arm *j*, adapted to engage the notch of the hammer-butt *b*.

The jack is provided near its articulation *f*<sup>1</sup> with a lug *f*<sup>2</sup> against which bears a spiral spring *k* carried by the whip *g*. This spring *k* is adapted to maintain the free end of the jack in the notch of the hammer-butt.

The jack is provided toward the lower half of its length with an opening or window *l* to allow the passage of the check *m* and of its

spring *n*, as hereinafter described. Above this opening is secured a rod *o* carrying a small piece of thin wood *p*. This projection bears against a pivoted adjusting screw *q*, which permits of controlling the exact point at which the jack leaves the hammer. It is to be observed that this part is placed very near to the free end of the jack and very far from the articulation of the latter, thereby allowing an adequate adjustment of the operation of the jack.

The hammer check *m* consists of a very small piece of wood, lined at its upper part and secured to a substantially U-shaped spring *n* made of wire and passing twice through the opening *l* of the jack the bent portion of the spring being in front of the jack. It is secured on the whip *g* at about the articulation of the same. The wire is flattened under the small wood plate.

The operation of this device is as follows:—The movement of the key imparts to the jack an upward motion until it is stopped by the meeting of the arm *p* with the adjusting screw *q*. The hammer is set in motion by the jack during its upward motion and is left by the latter but at a very small distance from the strings, and this at the moment when it is stopped by the adjusting abutment. Exactly at this moment, the check which has been lifted with the jack comes into contact with the countercheck which has been moved from left to right. In this position of the two parts, if the action of the key is moderate, a small downward motion of the check takes place in virtue of the flexure of the spring about the middle of the curve of the spring *n*. This first movement of the check preceding but very little the moment at which the strike of the hammer takes place, has for consequence to impart to the same a small backward motion accelerating the recoil of the hammer at the percussion. This operation takes place when the key has come to its lowermost position. In this position, the striking operation is complete and the hammer is really maintained by the check the spring of which is bent. If the operation of the key has been very energetic, the countercheck will then bear fully against the check and will cause the two arms of the spring to yield almost simultaneously.

The rapid repetition of the note is facilitated by the yield of the spring of the check, which causes the hammer to move back up-



ward and allows the jack to easily enter beneath the nose of the hammer-butt.

The above arrangements have been given by way of example only; the forms, dimensions and detail arrangements may vary in all cases without departing from the principle of the invention.

Claim:

1. In a piano action, the combination with the hammer butt, of a counter-check fixed to the hammer butt, and beneath and in front of the axis of said hammer butt, a check and a substantially U-shaped spring carrying the check, the bent portion of the spring being in front of the jack.

2. In a piano action, the combination with the hammer butt, of a counter-check carried thereby, a jack provided with an opening, and a substantially U-shaped spring passing through the opening and having its bent portion in front of the jack, said spring being provided with a check for the purpose set forth.

The foregoing specification of my action for upright pianofortes signed by me this twelfth day of April 1907.

JOSEPH DELERUE.

Witnesses:

SIMÃO ESMERÚ.

ALVARO DO NASCIMENTO FERREIRA