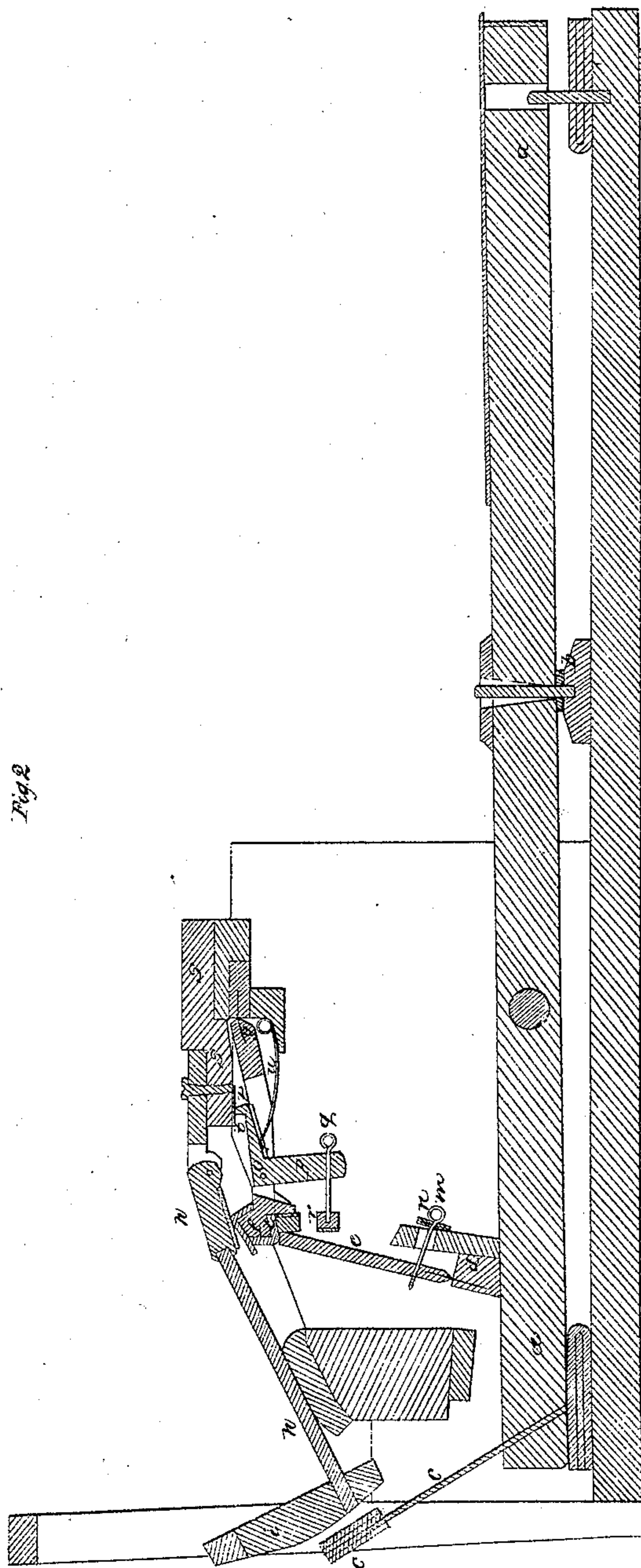


*Patented June 21, 1853.*





# UNITED STATES PATENT OFFICE.

BENJAMIN E. COLLEY, OF CAMBRIDGE, MASSACHUSETTS.

## PIANOFORTE.

Specification of Letters Patent No. 9,793, dated June 21, 1853.

*To all whom it may concern:*

Be it known that I, BENJAMIN E. COLLEY, of Cambridge, in the county of Middlesex and State of Massachusetts, have invented  
5 certain new and useful Improvements in Pianoforte-Actions, and that the following description, taken in connection with the accompanying drawings, hereinafter referred to, forms a full and exact specification of the  
10 same, wherein I have set forth the nature and principles of my said improvements, by which my invention may be distinguished from others of a similar class, together with such parts as I claim and desire to have  
15 secured to me by Letters Patent.

The figures of the accompanying plate of drawings represent my improvements.

Figure 1 is a side elevation of my improved action. Fig. 2 is a central longitudinal vertical section of the same.

In most of the pianoforte actions which have hitherto been constructed no provision has been made for preventing the "sticking" or "blocking" of the fly of the jack  
25 upon the under part of the hammer, an inconvenience which is very liable to occur especially in damp weather. Another deficiency in pianoforte actions has been that the full force of the blow upon the key  
30 could not be conveyed to the hammer, as the fly of the jack began to leave the shoulder or part of the hammer arm upon which it struck as soon as the key was touched. By my improvements these objections are ob-  
35 viated as the fly of the jack is regulated or adjusted by a set screw which keeps it in its proper position with regard to the shoulder of the hammer arm and prevents its rebounding against the same, and at the  
40 same time the fly of the jack is prevented from blocking by being pushed from the lever which operates the hammer arm at each blow, as will be hereinafter explained.

*a a* in the drawings represents the key  
45 lever, turning on a fulcrum at *b* and having placed on it the back catch *c* and jack *d*. When the end of the key lever *a a* is depressed, the fly *e* of the jack strikes against the arm *f*, which turns on a fulcrum at *g*,  
50 and lifts the hammer arm *h h* and the hammer *i*. The fly *e* of the jack has its posi-

tion adjusted so as to prevent its being thrown too far from the arm *f* by the force of the blow by a set screw *m* passing through the fly *e* and a slot in the body of the jack. 55 This screw has suitable washers *n* on its end. It will be seen that by this arrangement the fly *e* of the jack can be set to any desired angle so as to keep it against the shoulder *l* and prevent its rebounding against the 60 arm *f*.

In the arm *f* and turning on a fulcrum *O* in the same is placed the right angular lever *P P*, through the bottom end of which is inserted a screw *q* with washers at *r*. The 65 other end or projection *l* of this lever bears against the stationary piece *s s*. When the arm *f* is raised by the fly of the jack, the lever *P P*, turning on its fulcrum, will press by means of its screw *q* and washer *r* against 70 the fly wheel of the jack and throw it off from the shoulder *l* of the arm *f* at each blow, thus effectually preventing its "sticking" or blocking. The right angular lever *P P* is aided in its operation by the bent 75 spring *u*.

It will be seen by the above described arrangement for adjusting the position of the jack that the blow upon the string can be given with great power and certainty, with- 80 out any noise or "slapping" from the rebounding of the jack while by the device for throwing the jack from the arm against which it strikes the touch will be rendered very light and sensitive. 85

I do not claim throwing off the fly from beneath the hammer arm by mechanism attached to or connected with the hammer arm itself as that has been done before; but

What I do claim as my invention, desire 90 to secure by Letters Patent, is—

Throwing the fly of the jack from the arm which operates the hammer each time the note is struck, so as to prevent its "blocking," in the said arm, by the bent 95 lever *P P* and set screw *q* operating independent of the hammer and hammer arm in the manner set forth.

BENJ. E. COLLEY.

Witnesses:

JOSEPH GAVETT,  
ROBERT L. HARRIS.