

No. 28,997.

PATENTED JULY 3, 1860.

F. W. NIEHAUS.  
PIANOFORTE ACTION.

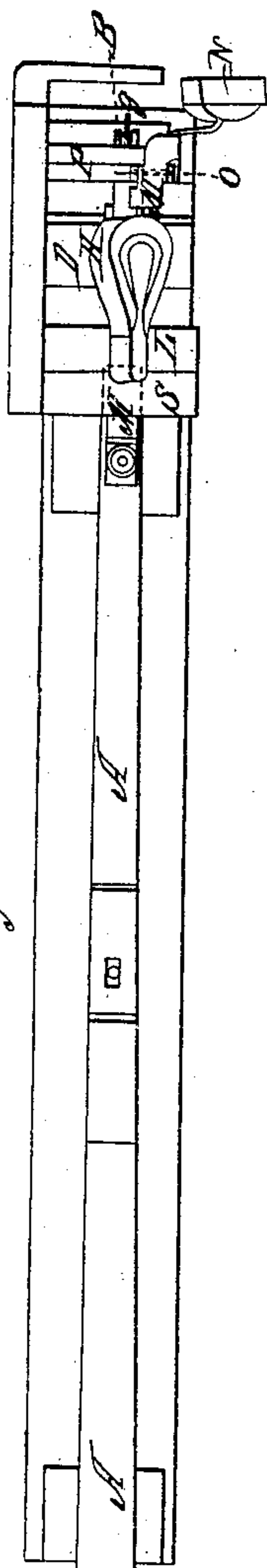


Fig. 1.

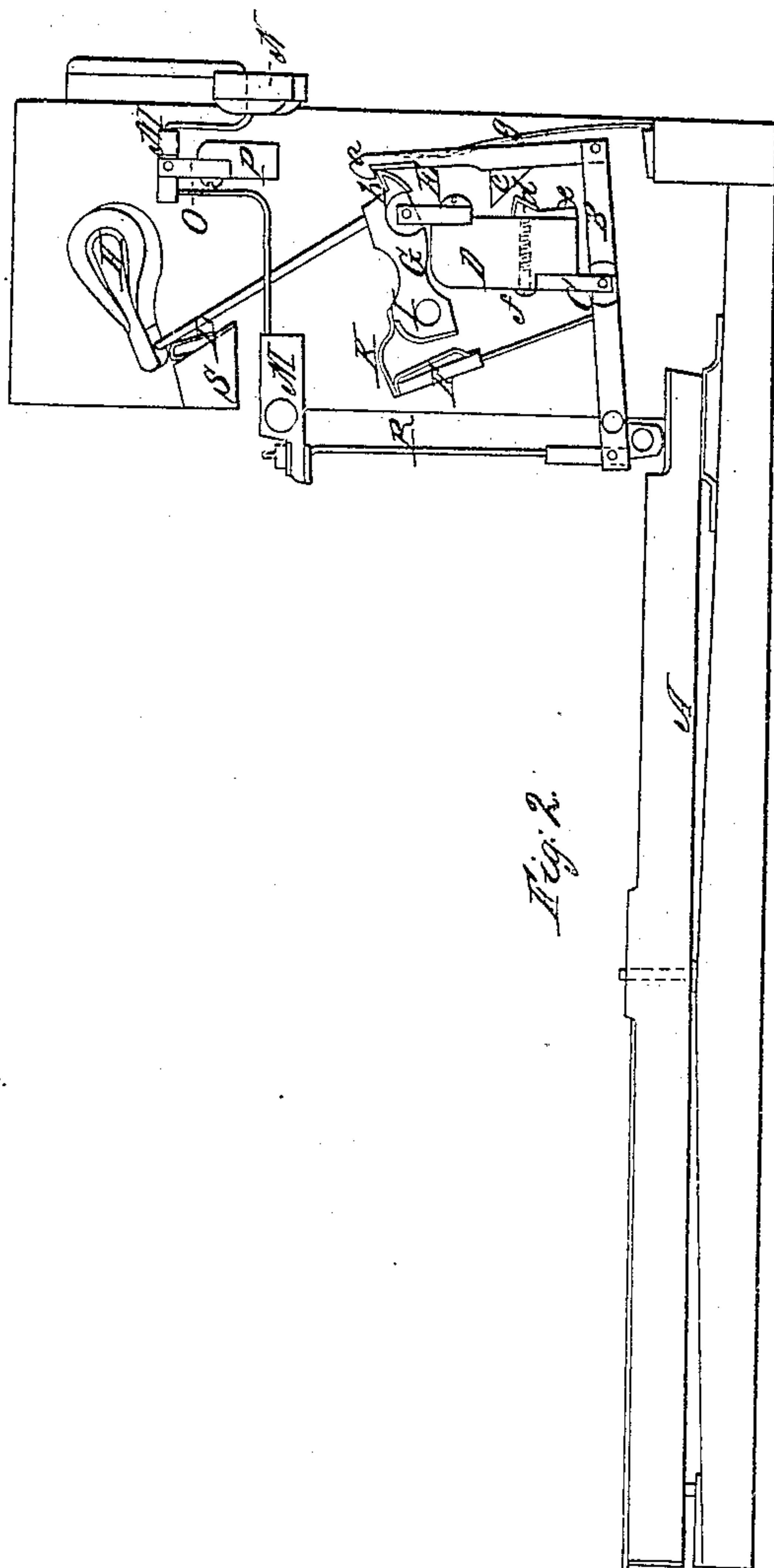


Fig. 2.

Witnesses:

R. M. Lundy

F. P. Hale Jr.

Inventor:

Friedrich W. Niehaus

# UNITED STATES PATENT OFFICE.

FRIEDRICH WM. NIEHAUS, OF BOSTON, MASSACHUSETTS.

## PIANOFORTE-ACTION.

Specification of Letters Patent No. 28,997, dated July 3, 1860.

*To all whom it may concern:*

Be it known that I, FRIEDRICH WILLIAM NIEHAUS, of Boston, in the county of Suffolk and State of Massachusetts, have invented  
5 an Improved Pianoforte-Action; and I do hereby declare the same to be fully described and represented in the following specification and the accompanying drawings, of which—

10 Figure 1 is a top view; and Fig. 2, a side elevation of such action.

The said action is intended particularly for those pianos whose strings are arranged in an upright plane, such being generally  
15 termed "upright pianos."

In my improved action the key is made to operate directly against the fly lever, which instead of having its fulcrum at one end, as in the common "French action", has it  
20 placed about midway between the ends, as shown in Fig. 2, of the said drawings, wherein A, is the key, B, the fly lever, and C, the fulcrum of the latter. The said fulcrum is sustained by a projection from the support  
25 bar D, which in carrying out my invention I arrange between the fly E, and the back catch F, and with respect to the tail block G, of the hammer H, as shown in Fig. 2. From the said tail block, I extend an arm, I,  
30 which I load with lead and connect with the back catch by means of a strap, K, which serves to insure the return of the hammer upon or toward its rest, L, after each blow of such hammer against the string.

35 The fly, E, is constructed with a hooked upper end as seen at *a*, and so as to operate with an angular projection *b*, extending from the tail block of the hammer. Furthermore, there is an inclined cam *c*, applied to the front side of the fly and so as  
40 to work against a regulator or cam *d*, affixed to the back of the support bar D, by a screw *e*. This cam has an adjusting screw *f*, screwed into and extending through the support bar and against the cam, the head of the screw being on the front side of the support bar. By turning up the screw, the cam  
45 or regulator *d* may be sprung more or less away from the bar D in order to properly adjust it with reference to the cam *c*. The lower end of the fly is jointed to the lever B, from which the back catch extends as shown in the drawings, a spring *g*, serving to press the fly toward the tail block of  
55 the hammer.

M is the damper lever carrying the damper N, and having its fulcrum in a projection O, supported by a rail P. This damper lever is arranged between the hammer head and the tail block and its longer  
60 arm goes under the back rest bar S, of the hammer and is constructed with a pitman R, which at its lower end is jointed to the front end of the lever B.

When the key is struck, it elevates the  
65 front arm of the lever B, so as to cause not only the fly to be driven downward, but the back catch and the front arm of the damper lever to be simultaneously elevated. In the meantime not only will the hammer be  
70 driven forward by the action of the fly, but the damper will be drawn off the string. During the return movement of the key, the return movements of each of the other movable parts will take place, the strap K,  
75 serving to insure the backward fall of the hammer.

My arrangement has advantages over those of most other upright piano actions in use inasmuch as generally speaking it  
80 makes the action more compact or reduces it in height and carries the damper levers below the hammer heads. Furthermore, it brings the head of the regulating screw *f*, on the front side of the support bar D, where  
85 access can be had to it in a better manner than when placed in rear of the supporting bar as it is in many other actions.

I claim—

1. Arranging not only the support bar D,  
90 and the fulcrum of the lever B, between the back catch F, and the fly E, but the regulator cam *d*, on the back of the supporting bar and its adjusting screw *f*, in such bar in manner as specified: 95

2. Applying or arranging the back draft strap K, to the back catch F, and the loaded arm I, as described.

3. The arrangement of the damper lever relatively to the hammer and its back rest  
100 block, that is placing it between the head and tail block of the hammer and so as to pass under the back rest bar as specified.

FRIEDRICH WM. NIEHAUS.

Witnesses:

R. H. EDDY,  
F. R. HALE, Jr.