

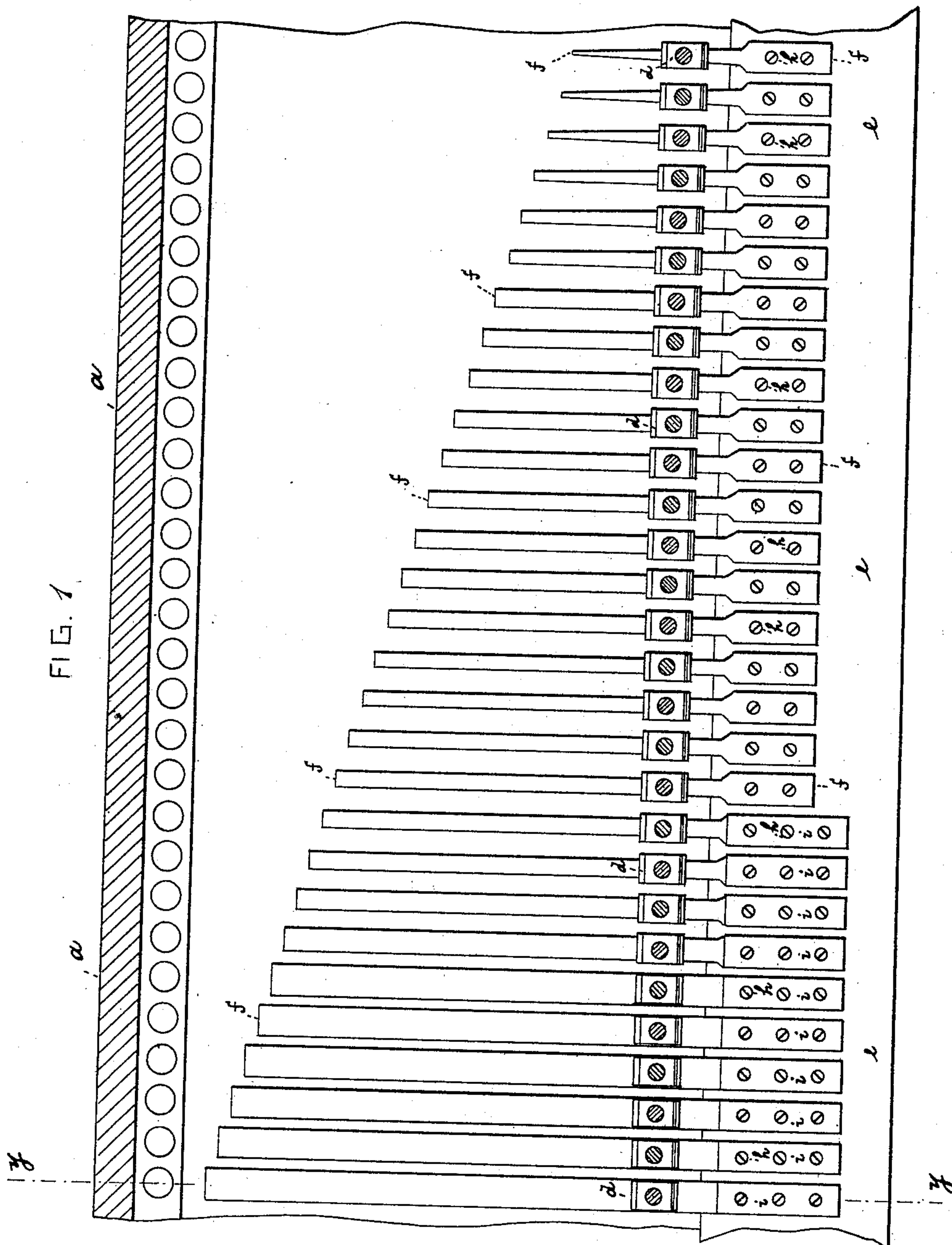
(No Model.)

2 Sheets—Sheet 1.

G. STECK.
PIANO.

No. 436,385.

Patented Sept. 16, 1890.



WITNESSES

Wm. A. Lowe

Wm Wagner

INVENTOR

George Steck

by his attorneys

Roder & Briesen.

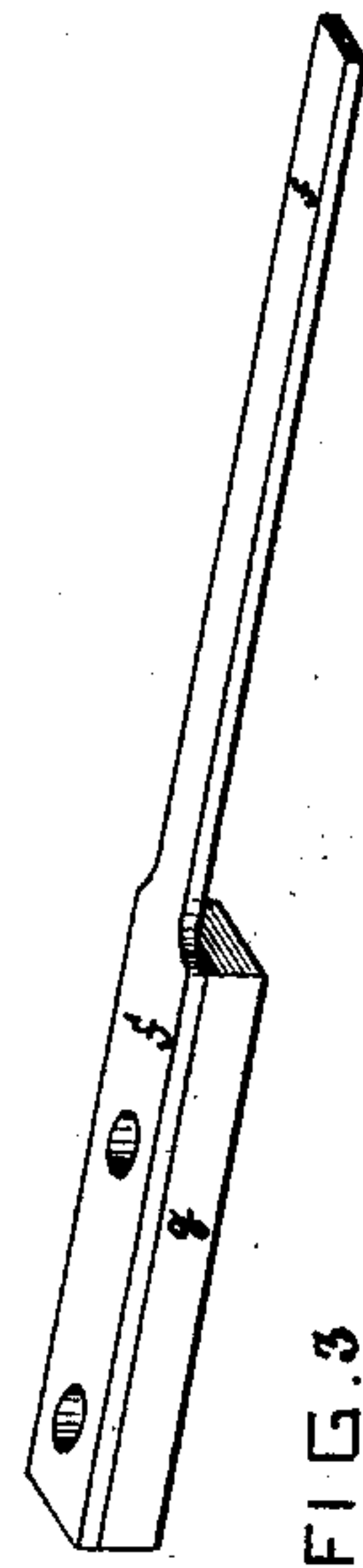
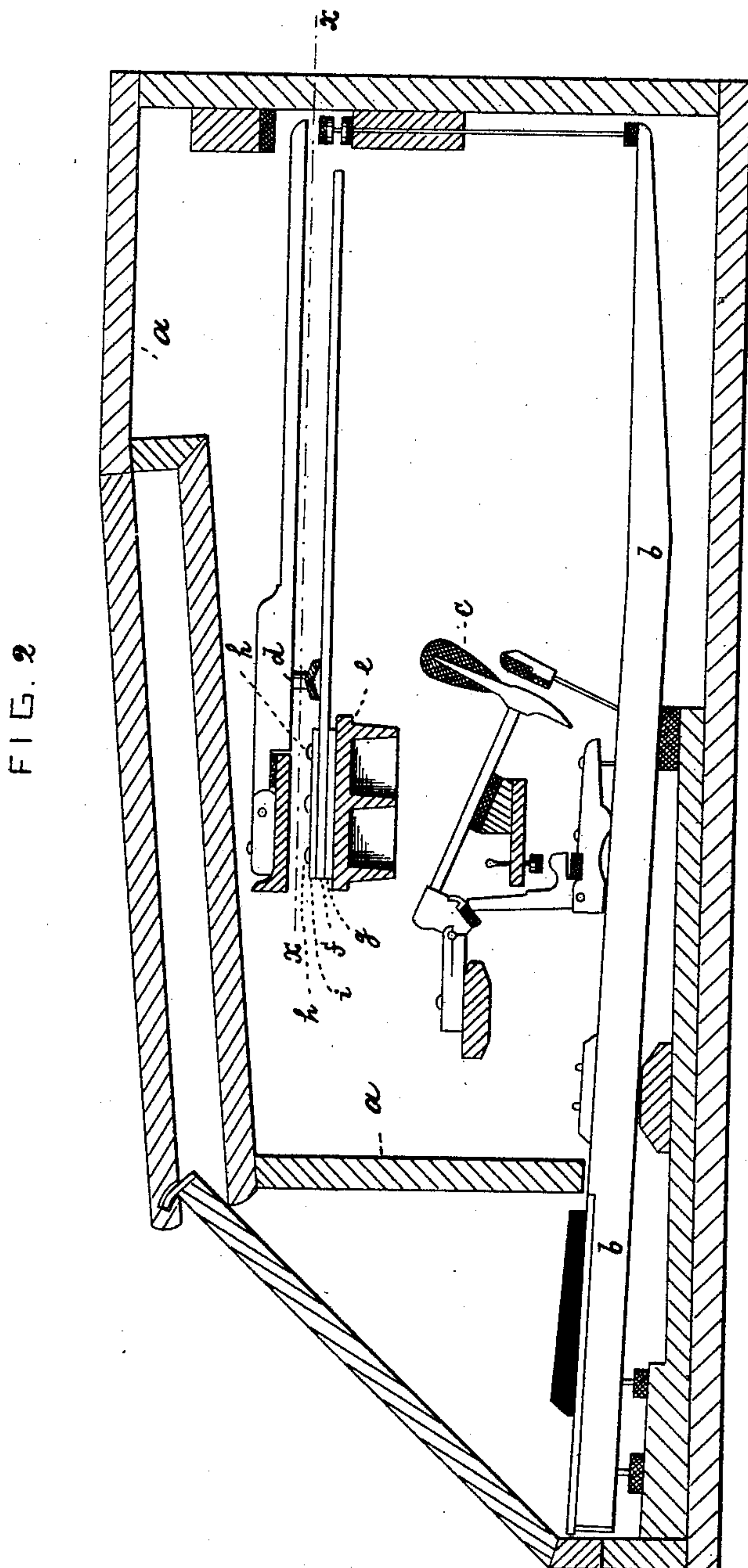
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UNITED STATES PATENT OFFICE.

GEORGE STECK, OF NEW YORK, N. Y.

PIANO.

SPECIFICATION forming part of Letters Patent No. 436,385, dated September 16, 1890.

Application filed December 5, 1889. Serial No. 332,671. (No model.)

To all whom it may concern:

Be it known that I, GEORGE STECK, of New York city, New York, have invented an Improved Piano, of which the following is a
5 specification.

This invention relates to an improvement in stringless pianos, and more particularly to the construction of the springs that are struck by the hammers to produce the sound.

10 The invention consists in the various features of improvement more fully pointed out in the claims.

In the accompanying drawings, Figure 1 is a horizontal section on line *xx*, Fig. 2. Fig. 2
15 is a vertical transverse section on line *yy*, Fig. 1; and Fig. 3, a perspective view of one of the springs.

The letter *a* represents a piano-case containing a suitable action, of which *b* is the key,
20 *c* the hammer, and *d* the damper.

e is a metallic rail, to which the sound-producing springs are connected. These springs are composed of two different layers of metal soldered upon one another. The upper strip
25 or layer *f* of the spring is made of a steel spring-plate, while the lower strip *g* is preferably made of brass. The lower layer is flush, substantially, at its forward end with the upper layer, but at the rear end the upper layer projects a considerable distance beyond the lower
30 layer. Thus while the lower layer is supported bodily upon the rail *e* from end to end the upper layer projects back of the rail to a distance sufficient to insure the proper vibration of the spring, and sufficient, of course, to
35 come into contact with the hammer.

I have found that by the use of two different layers of metal of different lengths and secured to a metallic rail I obtain a rich pure note
40 and a spring that will not ring after being struck.

In lieu of the lower brass layer *g*, I may per-

haps use another metal; but I have found the results produced by brass to be very satisfactory.

Both the layers *f g* are perforated for the passage of screws *h*, by which the springs are secured to the rail *e*. 45

In order to produce the proper notes, the length of the upper layers *f* vary, the layer 50 being longest at the deepest note and decreasing regularly up to the highest note. Moreover, the layers *f* for the deep notes should be made widest and for the very high notes they may be pointed, as shown. The intermediate 55 notes should be of medium width and need not be pointed. For the bass notes I furthermore prefer to use an additional layer *i* on top of layer *f* and of the same size as the bottom layer *g*, Fig. 2. This top layer *i* is likewise 60 soldered to the layer *f*, and should be of the same metal as the bottom layer. The bass springs may also have the layers *g i* somewhat longer than the remaining springs, and may be fastened down by three screws *h*, as shown. 65

What I claim is—

1. In stringless pianos, a sound-producing spring consisting of a longer steel plate and of a shorter plate of another metal soldered thereto, substantially as specified. 70

2. The combination of metal rail *e* with a lower layer *g*, and with an upper spring-plate *f* soldered thereto, the layer *g* being supported upon rail *e*, and the spring-plate *f* projecting rearwardly therefrom, substantially as specified. 75

3. The combination of a spring-steel plate *f* with a lower shorter layer *g*, and an upper shorter layer *i* soldered thereto, substantially as specified.

GEORGE STECK.

Witnesses:

A. JONGHMANS,
F. V. BRIESEN.