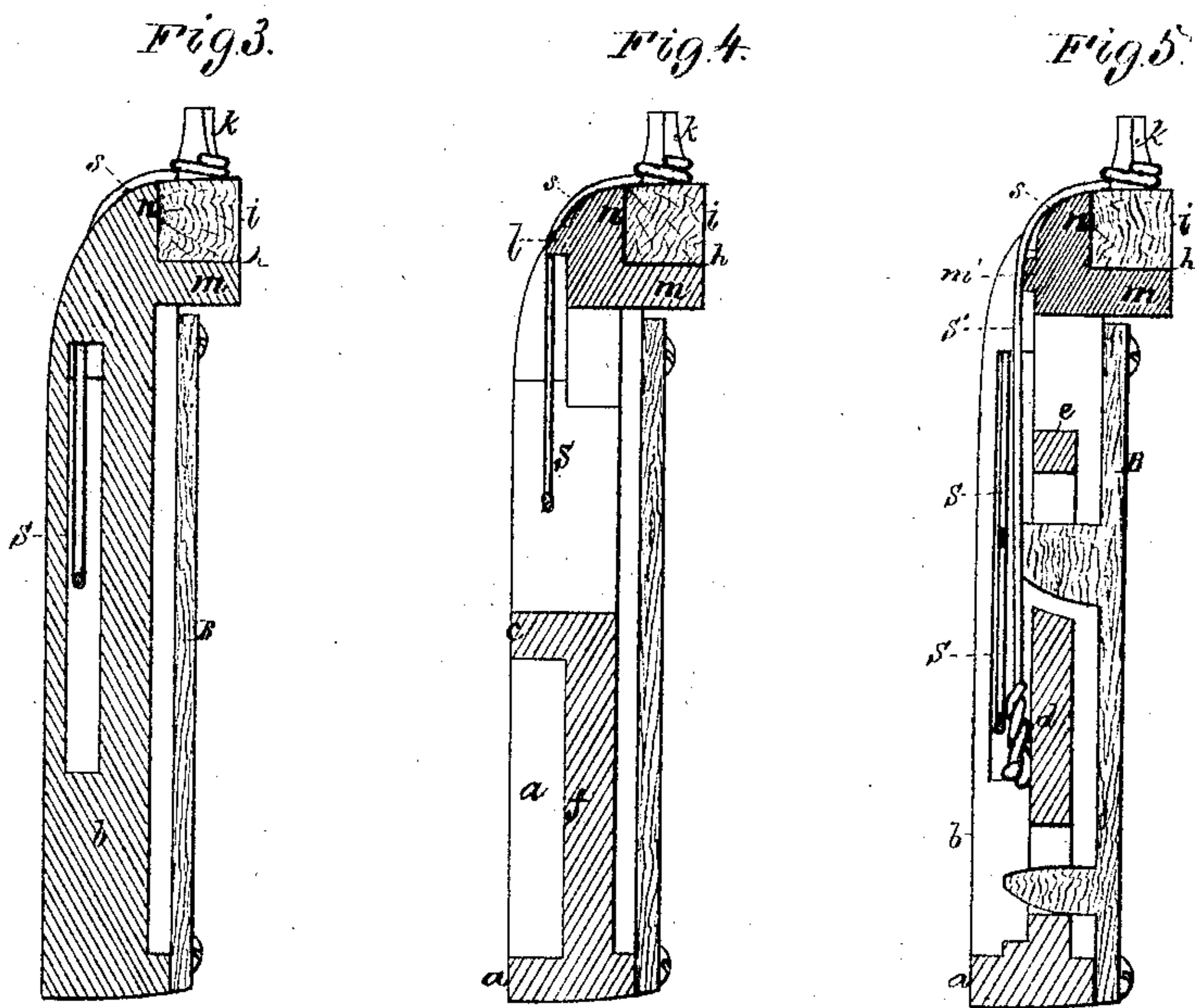
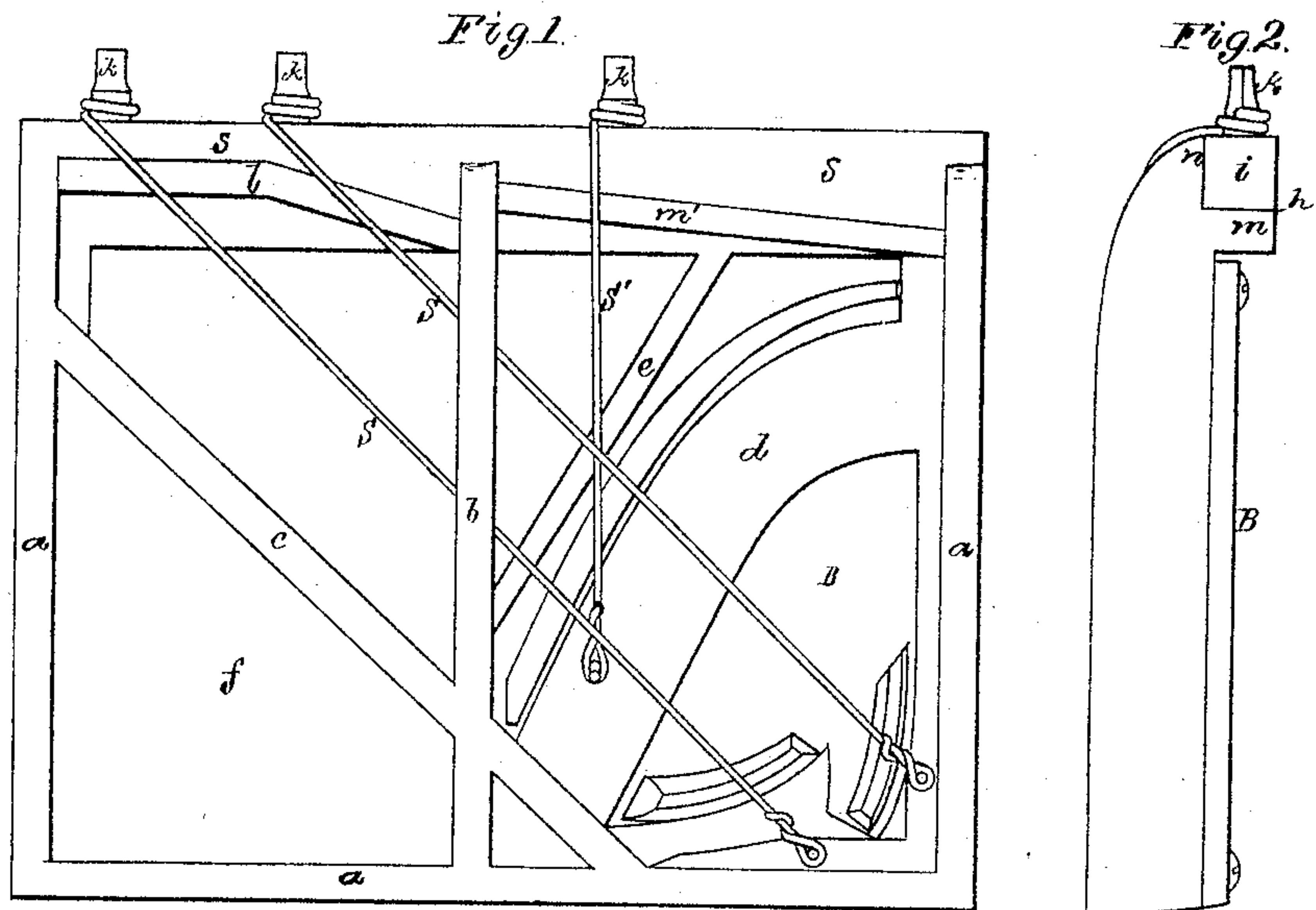


C. E. ROGERS.
Pianofortes.

No. 147,285.

Patented Feb. 10, 1874.



Witnesses.

S. V. Piper.

L. N. Möller.

Charles E. Rogers.

by his attorney.

R. H. Ledy.

UNITED STATES PATENT OFFICE.

CHARLES E. ROGERS, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO
BENJAMIN F. BAKER, OF SAME PLACE.

IMPROVEMENT IN PIANO-FORTES.

Specification forming part of Letters Patent No. **147,285**, dated February 10, 1874; application filed
January 24, 1874.

To all whom it may concern:

Be it known that I, CHARLES E. ROGERS, of Boston, of the county of Suffolk and State of Massachusetts, have made a new and useful invention having reference to the String-Frames of Upright Piano-Fortes; and do hereby declare the same to be fully described in the following specification and represented in the accompanying drawings, of which—

Figure 1 is a front elevation, Fig. 2 an end view, and Figs. 3, 4, and 5 vertical and transverse sections, of my improved string-frame and the parts connected therewith, and to be hereinafter explained.

The said string-frame is of cast-iron, it being composed of a rectangular frame, *a*, a middle slotted upright brace, *b*, oblique braces *c d e*, and a strengthening-plate, *J*, all being arranged as shown. The said frame has or is to have a sounding-board, *B*, and two series of strings, *S S S'*, applied to it, as shown. At its back, and to extend over the upper edge of the sounding-board, the frame is constructed with a shelf, *m*, to form a rabbet or angular space, *h*, to receive a wooden bar, *i*, into which the straining-pins *k k k* of the strings are arranged, as shown. The upper part *s* of the frame, between the string-bridges *l m'*, arranged as shown, and the bar *i*, is rounded to or about to the curve of the quadrant of a circle, in order that each of the strings may be supported upon a curved surface or bearing between its bridge and straining-pin. One set of the strings has its hitch-pin fixed on the brace *d*, the other set having its hitch-pins disposed in the frame in the manner as shown. The strings of the latter set are arranged obliquely in the frame and carried through the brace *b*, slotted, as shown, to receive them. The straining-pin bar *i* is to be fastened to the frame by screws go-

ing up through the shelf *m*, which, with the abutment or part *n*, forms the rabbet to receive the said bar. By the arrangement and combination of the straining-pin bar with the iron frame in the manner shown, the straining-pins become disposed vertically, so as to be in convenient positions for being turned by a tuner with a key. Furthermore, the said pins do not go through any metal or part of the frame, and, consequently, being in wood only, they are free from the liability to make a noise, as they are apt to when going through metal before being screwed or inserted in the wood and the piano is being played. The wooden bar also forms an elastic support for the strings, all of which is advantageous.

The peculiar construction of the metallic string-frame renders it very strong and not liable to cripple under strain of the strings.

The whole frame is to be cast in one piece of metal. Should, however, it be preferable to cast in one piece all of it with the exception of the shortest of the oblique braces, viz., that marked *e*, such may be done, and such brace *e* may be in a separate piece, to be fixed in place by screws or other proper devices.

I claim—

1. The frame *a*, the slotted upright brace *b*, the oblique braces *c d e*, the strengthening-plate *f*, and the back shelf *m*, constructed and arranged substantially as described and shown, the whole composing a piano-forte string-frame.

2. The string-frame constructed as described, the straining-pin bar *i*, the straining-pins, and their strings, all combined and arranged as set forth.

C. E. ROGERS.

Witnesses:

R. H. EDDY,
J. R. SNOW.