

(No Model.)

J. H. CLARK.  
PIANOFORTE.

No. 571,645.

Patented Nov. 17, 1896.

Fig. 1.

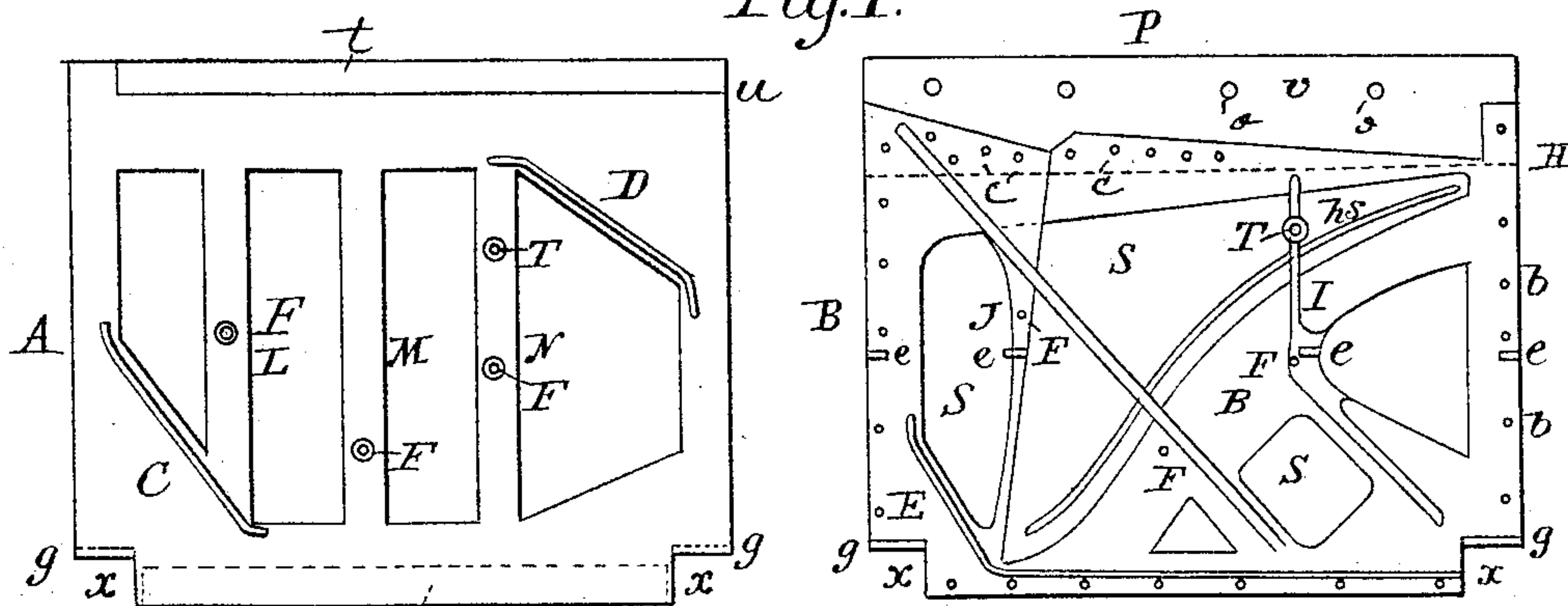


Fig. 2.

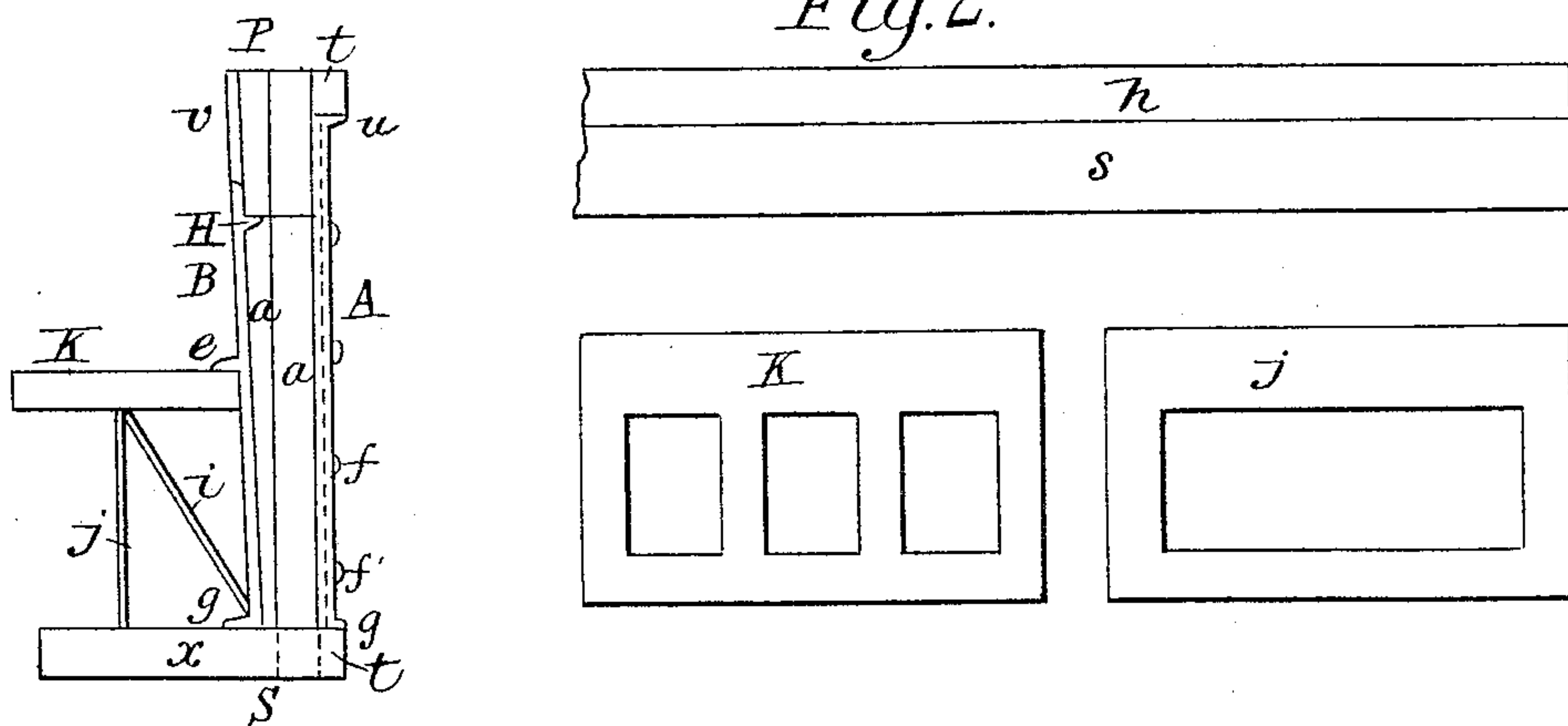
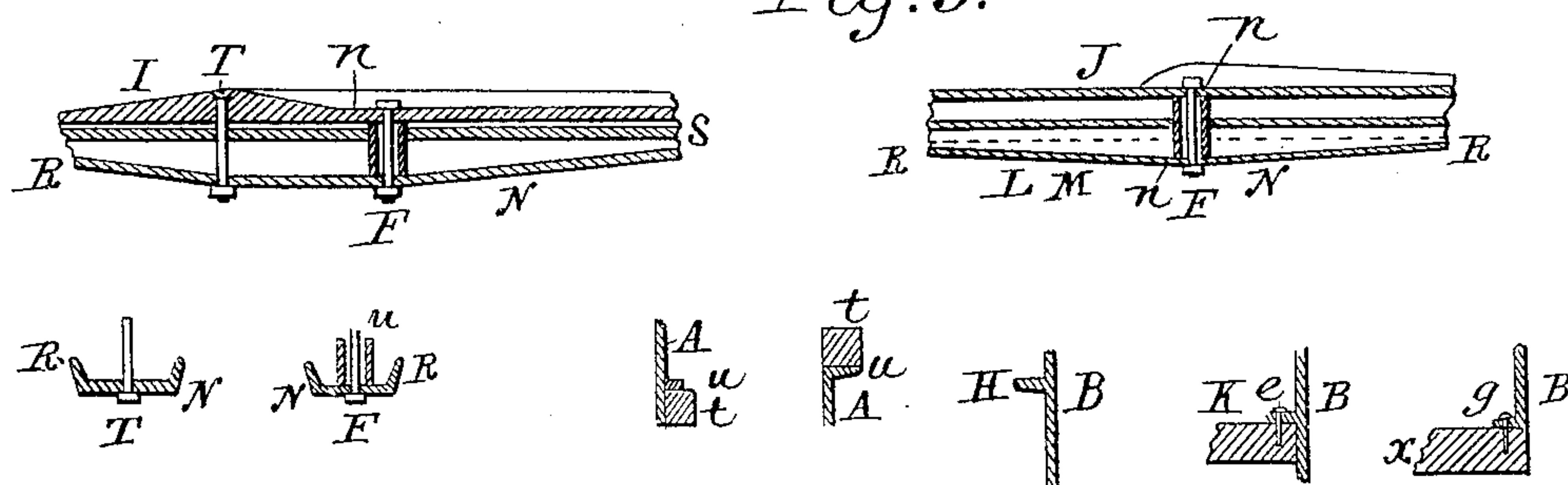


Fig. 3.



Witnesses

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# UNITED STATES PATENT OFFICE.

JOSEPH H. CLARK, OF DEERING, MAINE.

## PIANOFORTE.

SPECIFICATION forming part of Letters Patent No. 571,645, dated November 17, 1896.

Application filed November 13, 1895. Serial No. 568,800. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH H. CLARK, a citizen of the United States, residing at Deering, in the county of Cumberland and State of Maine, have invented a new and useful Pianoforte, of which the following is a specification.

My invention relates to improvements in pianofortes in which a complete metallic frame is made independent of the case, firm in its construction, with ribbed arches to resist the strain when applied and flanges to hold the casework.

The objects of my invention are, first, to strengthen all of the weak points of the framework; second, to make the work compact and reduced in size, and, third, to avoid changes caused by the atmosphere on the frame in the use of wood. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a front view of the two metallic plates, which, with their connections and the wrest-plank, constitute a frame of great strength; Fig. 2, a side view of the double metallic frame, glue-bars, and sounding-board bridge and edge view of the sounding-board and veneer of the wrest-plank, a top view of the key-bottom, and a front view of the panel-frame; and Fig. 3 shows sectional views of the different parts, including the arched work of the plates and ribbed work of the same.

Similar letters refer to similar parts throughout the several views.

The plate A is made of one piece of cast-iron provided with the ribbed corners C D, which corners hold against one of the weakest points in the piano, which point gives away to the lateral strain from the right to the left hand of the frame.

The arches R R R of the plate A are ribbed on the inside of the two edges of the bars L M N of the said back plate A to give the greatest amount of strength in the least space, (see Fig. 3,) and for each one of the bars L M N the ribbed arch R is made, but for the bar N the ribbed arch R is extended for the use of the regulating-bolt T and tube *n* and the bolt F. The bolts F F F and metallic tubes *n n n*, through which the said bolts F F F pass to hold the parts at a given point, are to pre-

vent the plate B from any movement toward the sounding-board S.

The one bolt T, made with a beveled head for strength and used without any stay-tube to hold and regulate the center of the plate B by its connection with the plate A and the strain that is made by keeping the parts straight, gives an endwise pressure upon the tubes *n* and the bolt T, which draws the work together to make it firm, and the tubes *n*, that hold the frame at a given point, will together prevent any twisting of the piano. The bolt T holds the frame as a key to the double arch and makes it true and solid by acting against the tubes *n*, and strength will be gained by turning up the nut of the bolt T one-eighth to three-sixteenths of an inch more or less before the strings are put onto the frame.

The flanges *f f*, &c., are to secure the back edges of the case with wood screws. The pieces *t t* at the top and bottom of the plate A are made of wood to fasten an instrument to in a box for shipping. The flanges *g g* are to hold the shoe-pieces *x x* with wood screws. The plate A should be supplied at the top on the back with the rib *u*, seven-eighths by three-eighths of an inch, and at the bottom and the two sides the rib *u* should be one-half by three-eighths of an inch and connect with the flanges *g g*.

The plate B is made of one piece of cast-iron and provided with the ribs H and E. The rib H is for the wrest-plank or pin-block P to rest upon and to strengthen the upper right-hand corner of the plate B, the said rib H to extend to the right-hand edge on the back side of the said plate B. The rib E is to add strength to the lower left-hand corner of the plate B and support the corner *c* of the plate A. The flanges *g g* are to support the shoe-pieces *x x* on the front side of the plate B. The flanges *e e e e* are to hold the back side of the key-bottom *k* with wood screws to the front side of the plate B. The panel-frame *j* and braces *i i* are to support the front of the key-bottom *k*. The bolts *b b*, &c., (seen in Fig. 1) on the bottom and two sides of the plate B and with the head-bolts *o o o o* are to secure the plates A B in a solid frame.

The letters *c c*, &c., are wood screws to hold the bottom of the block P to the rib H in the



frame. The letters *a a* are the glue-bars of the sounding-board *S*. The upper part of the sounding-board bridge *h s* may be made in part of spruce wood *s*, to reduce the weight of the treble or upper part of the bridge and  
 5 faced with hard wood *h* to hold the pins for the strings. The face cross-band *v* of the pin-block *P* may be made of perfectly kiln-dried hard wood of one thickness, from three-eighths  
 10 to three-fourths of an inch, put on in pieces and fitted with the grain of the wood to be in a direct line with the string, so that the wrest-pin may rest against the ends of the grains of the wood when used.

15 The plates *A B*, provided with the ribbed corners *C D E*, (the ribs of the said corners *C D E* should be three-eighths by three-fourths of an inch,) the ribbed arched bars *L M N* and the bars *J I*, the wrest-plank or pin-block  
 20 *P*, the rib *H*, and the glue-bars *a a*, the key-bottom *k*, the panel-frame *j*, and the braces *i i*, the bolts *F F F*, the bolts *b b*, &c., and the regulating-bolt *T*, the head-bolts *o o o o* with wood screws *c c*, &c., and the shoe-pieces  
 25 *x x* and their respective wood screws constitute the frame of the piano. The corners *C D E* and the regulating-bolt *T* are the very important points in the strength of the piano-

forte, and especially the regulating-bolt *T* and its immediate connections, which should  
 30 be carefully prepared for strength. The said corners *C D* may be made without ribs by enlarging for strength.

I am aware that prior to my invention metallic plates have been used in pianofortes.  
 35 I therefore do not claim such a combination broadly; but

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

1. The metallic frame *A*, provided with the  
 40 ribbed corners *C, D*, the ribbed arched bars *L, M, N*, to hold against the regulating-bolt *T*, substantially as described.

2. The ribbed corner *E*, of the plate *B*, and the connection and combination of the said  
 45 plate *B*, with the ribbed arches *R, R, R*, of the plate *A*, and the beveled head-bolt *T*, and the rib *H*, of the plate *B*, substantially as and for the purpose specified.

Signed at Portland, Maine, this 13th day of  
 50 July, 1895.

JOSEPH H. CLARK.

Witnesses:

ELGIN C. MERRILL,  
 E. B. GARDNER.