

UNITED STATES PATENT OFFICE.

CLAUDE WILLIAM ATKINSON, OF GREAT MISSENDEN, ENGLAND.

PIANO-PLAYING MECHANISM.

1,005,793.

Specification of Letters Patent.

Patented Oct. 17, 1911.

Application filed January 14, 1910. Serial No. 538,011.

To all whom it may concern:

Be it known that I, CLAUDE WILLIAM ATKINSON, a subject of the King of Great Britain and Ireland, residing at Great Misenden, in the county of Bucks, England, have invented new and useful Improvements in and Relating to Piano-Playing Mechanism and the Like, of which the following is a specification.

10 This invention relates to piano playing mechanism and has reference to the construction of a vacuum chest and the arrangement of the pneumatic operated devices therein, for working the valves.

15 The object of this invention is the provision of valve pneumatic mechanism of simple form and cheap construction.

In order that the invention may be the better understood I will now proceed to describe the same in relation to the accompanying drawing, reference being had to the letters and figures marked thereon.

20 Like letters refer to like parts in the various figures in which—

25 Figure 1 is a sectional elevation of a part of the vacuum chest, and the arrangement of the valves and valve operating mechanism therein. Fig. 2 is a part plan of the bottom plate of the vacuum chest showing the disposition of the depressions.

30 In the bottom plate *a* of the vacuum chamber *b* which is made of metal or other suitable material of uniform thickness I form a series of depressions *c* by stamping pressure one for each note and over each depression a diaphragm *d* of flexible material is disposed in order to form a purse to operate the valve stem *e*. I may cement the diaphragm *d* in position upon the plate *a*
40 or equivalently I may arrange a cover plate *f* held down by screws *g* or other equivalent means in such a way as to maintain an air tight joint between the diaphragms *d* and

the plate *a* of the vacuum chest. The cover plate *f* may be of such a length as to form 45 a series of covers for several purses to afford simplicity of fixture. A small hole *h* may be made in the cover plate *f* coincident with the axis of each depression to serve as a guide for the valve stem *e*. Tracker pipes *i* 50 are taken from the depressions *c* and connected to the tracker in the usual way. A bleed hole *k* is provided in the diaphragm or in any other suitable position in order to effect the relief of the internal pressure 55 during operation in the usual way.

The valve stem *e* carries the usual valves *l* which operate in the ordinary manner for controlling the power pneumatics.

Having now particularly described my invention what I desire to secure by Letters Patent is:— 60

In a pneumatic piano playing mechanism, a vacuum chest having a wall formed of a plate of depressible material of uniform thickness, a plurality of stamped depressions formed integrally in said plate, a valve stem, a flexible diaphragm disposed over each depression, restricted communicating means between the chambers on opposite sides of the diaphragm, an independent cover plate holding said diaphragm 70 jointly on said wall over each depression, means for fastening said cover plate in position, guiding means on said cover plate 75 for the valve stem in each valve mechanism, and connections from orifices in the tracker board to the various spaces within said depressions, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses. 80

CLAUDE WILLIAM ATKINSON.

Witnesses:

CHAS. R. BULLOUGH,
H. D. JAMESON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."