J. J. KLEIN.

TRACKER BAR.

APPLICATION FILED OCT. 24, 1908.

925,777.

Patented June 22, 1909.

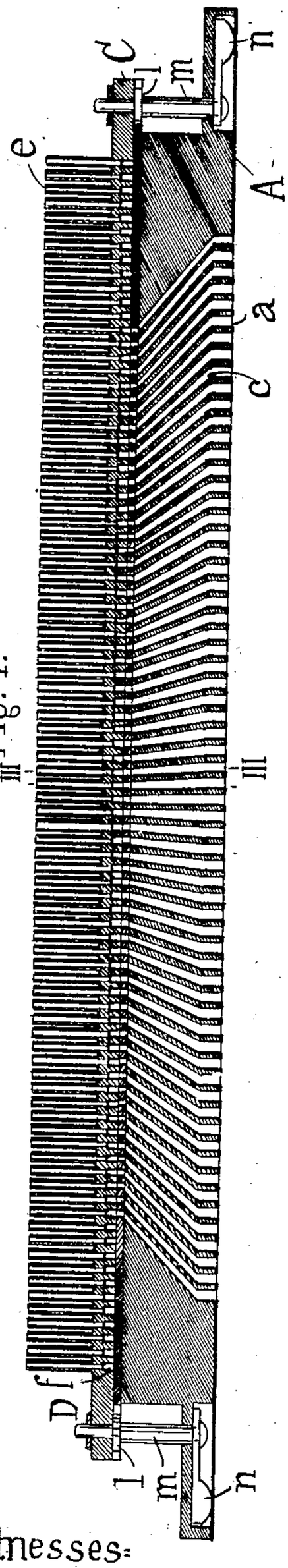

Fig. 1.

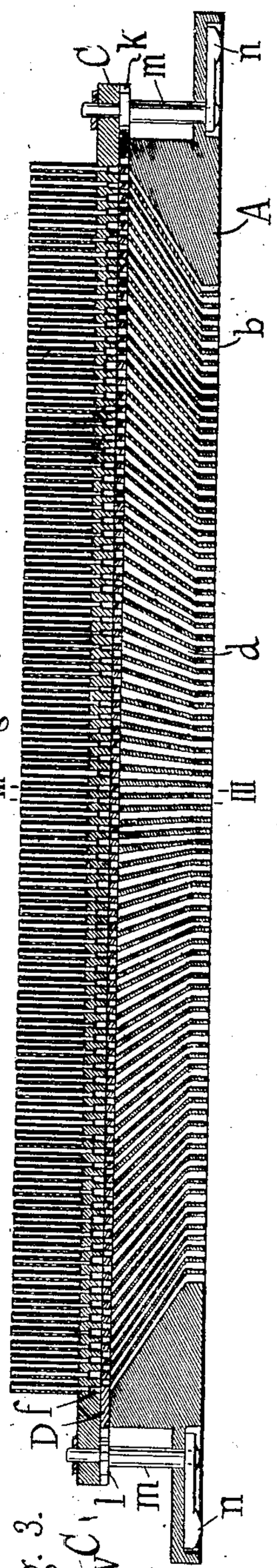

Fig. 2.

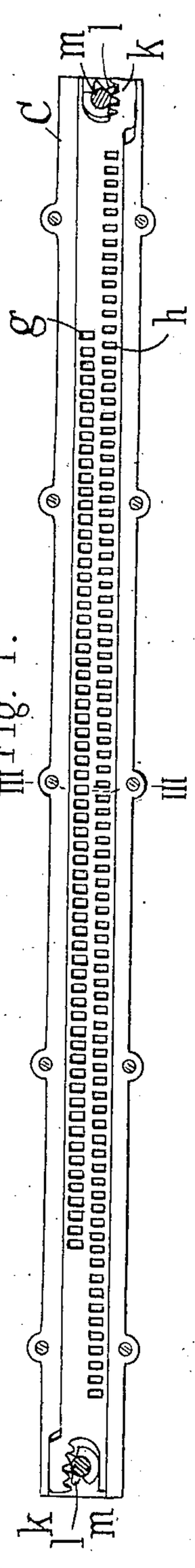

Fig. 4.

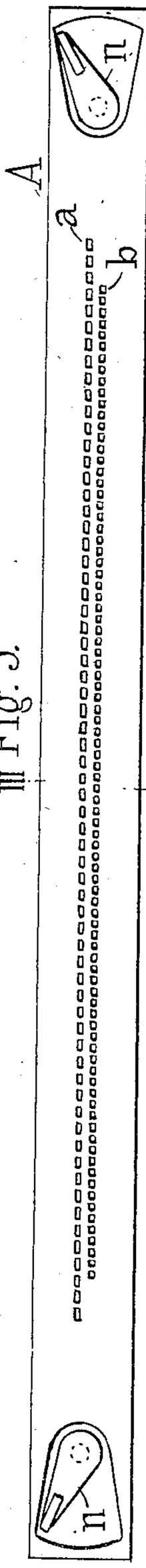

Fig. 5.

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UNITED STATES PATENT OFFICE.

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TRACKER-BAR.

No. 925,777. Specification of Letters Patent. Patented June 22, 1909.

Application filed October 24, 1908. Serial No. 459,324.

To all whom it may concern:

Be it known that I, JAMES J. KLEIN, a citizen of the United States of America, and a resident of the borough of the Bronx, in the city of New York, county of New York, and State of New York, have invented certain new and useful Improvements in Tracker-Bars, of which the following is a specification.

This invention relates to pneumatically operated automatic players for pianos or other musical instruments, and has for its object to render the playing device adjustable, whereby it may be operated from sheets of roll music having differently spaced lines of perforations and designed to play different numbers of notes.

In the accompanying sheet of drawings, which forms a part of this application, the several figures illustrate that portion of a piano player which embodies my invention.

Figure 1 is a longitudinal section through the tracker-bar, tubes and tube-head on the line I—I of Fig. 3, showing the series of sixty-five channels which are used with music having the more widely spaced lines of perforations. Fig. 2 is a longitudinal section through the same parts on the line II—II of Fig. 3, showing a series of eighty-eight channels which are used with music having more closely spaced lines of perforations. Fig. 3 is a cross-section through the same parts on the lines III—III of Figs. 1, 2, 4 and 5. Fig. 4 is a longitudinal section on the line IV—IV of Fig. 3, showing the tube-head and slide. Fig. 5 shows the face of the tracker-bar.

Piano players have been heretofore manufactured with a compass of either 65 or 88 notes, and the perforated roll music for either compass of player has not been suited to the other by reason of a different spacing of the openings in the bar over which the music tracks, as well as by reason of the difference in compass. In order to render an automatic player adaptable to either kind of music, a tracker-bar A is provided with two series of openings ranged in two lines along its face, the upper series *a* having 65 holes and being more widely spaced, while the lower series *b* has 88 holes, but is so much more closely spaced that it occupies a less distance on the bar. The upper series is adapted to register with sixty-five note music and the lower series is adapted to register with eighty-eight note music. Rearwardly extending from the upper row of 65 face openings, is a series of 65 channels *c* converging to a lesser spacing at the rear. On account of converging they are narrower at the rear but are made deeper so that the cross-section will not be lessened. Rearwardly extending from the lower row of 88 face openings, and divided off from the upper series by a central wall, is a series of 88 channels *d* diverging to a spacing or pitch at the rear, which is the same as the spacing of the other series, and the rear ends of channels for corresponding notes in the two series are brought opposite. The series of 88 channels has eleven at the left end of the tracker-bar for the bass, and twelve at the right end for the treble, for which there are no corresponding channels in the other series. The channels are closed by covers B B, a suitable packing, as of cloth with shellac, being interposed.

A tube-head C carries 88 tubes *e*, each of which communicates with the middle of a short transverse channel *f* in the tube-head, the spacing being the same as that of the rear end of both of the series of channels in the tracker-bar. The short channels constitute the openings of the tube-head. A slide D fits a longitudinal channel above the transverse channels in the tube-head, and has two series of perforations *g h* with equal spacing the same as the spacing of the tube-head channels and the rear ends of the tracker-bar channels. They correspond in number to the tracker-bar channels. They alternate in position and are so placed that either series may be brought opposite the ends of the corresponding series of channels and all the channels of the series brought into communication with the corresponding openings of the tube-head, and the slide at the same time brought to cover those portions of the openings which lie along the line of the other series of openings in the slide. The slide is interposed between the tube-head and the tracker-bar, and the tube-head and tracker-bar are drawn toward each other by screws *i i*, springs *j j* being interposed under the screw-heads so that the pressure may be limited to that necessary to keep the joints air-tight, and not interfere with the free operation of the slide. The slide has a short rack *k* at either end which is engaged by a pinion *l* on a shaft *m*, the shaft

having a lever *n* attached thereto and setting in a recess in the face of the tracker-bar. This mechanism is provided at each end so that both hands can be used and the slide operated with less strain on the mechanism. The connections are such that the line of holes which will be connected will be on the side toward which the lever ends are thrown.

What I claim as new and desire to secure by Letters Patent of the United States is:

1. A tracker-bar provided with two series of air-channels terminating in the face of the tracker-bar in two differently spaced series of holes, and terminating at the rear of the tracker-bar in two series of openings of the same spacing, and in combination a tube-head with a series of openings therein, a slide interposed between the rear of the tracker-bar and tube-head having two series of perforations one of which is adapted to register when in one position with one series of channels and the openings of the tube-head and the other of which is adapted to register when in the other position with the other series of channels and the openings in the tube-head, and means for shifting the slide from one position to the other, substantially as described.

2. A tracker-bar provided with two series of air-channels unequal in number terminating in the face of the tracker-bar in two differently spaced series of holes, and terminating at the rear of the tracker-bar in two series of openings of the same spacing, and in combination a tube-head with a series of openings therein equal in number to the greater series of air-channels, a slide interposed between the rear of the tracker-bar and tube-head having two series of perforations one of which is adapted to register when in one position with one series of channels and the openings of the tube-head and the other of which is adapted to register when in the other position with the other series of channels and the openings in the tube-head, and when connecting the series of channels of lesser number cutting off the excess openings of the tube-head, substantially as described.

3. A tracker-bar provided with two series of air-channels terminating in the face of the tracker-bar in two differently spaced series of holes, and terminating at the rear of the tracker-bar in two series of openings of the same spacing, and in combination a tube-head with a series of openings therein, a slide interposed between the rear of the tracker-bar and tube-head having two series of perforations one of which is adapted to register when in one position with one series of channels and the openings of the tube-head and the other of which is adapted to register when in the other position with the other series of channels and the openings in the tube-head, a pinion engaging the slide to shift the same, a pinion-shaft, and a lever at the face of the tracker-bar connected with the pinion-shaft, the connections being such that movement of the lever handle to the side of either series of tracker-bar openings effects the combination of that series of openings with the openings in the tube-head, substantially as described.

Signed by me at New York, N. Y., this 22d day of October, 1908.

JAMES J. KLEIN.

Witnesses:
SAMUEL W. BALCH,
HUGH H. SENIOR.