

tongue, plucked the string, as was done by the plectrum in the cithara of the Greeks; thus a more sustained sound was produced, until the return of the key brought a little piece of cloth on to the string and the sound was damped.

These two types of a keyed dulcimer ran side by side for hundreds of years, and not a little beautiful and interesting music was written for the instruments. They supplied the wants of the creators of music of the day, yet to a great extent they lacked what we deem the soul of music, viz., expression. Clever makers of the harpsichord employed ingenious devices for varying the tone quality, but in all these instruments dynamic expression—*i.e.*, the power of producing either a loud or a soft note as the performer desired—was impossible. We know that the clavichord and the virginal were in use in 1400, the two types continuing to be made until the beginning of the last century. Recognising their imperfections, it seems strange that they could have survived the invention of the pianoforte proper for more than a hundred years.

The mechanical principle of this instrument is easy to understand. It is that of a free balanced hammer; in effect mechanism assists in doing just what the wrists of the dulcimer players performed. These men could just touch the strings, or hit them a severe blow, then immediately raise the hammer-stick and allow the string to sound freely until its vibrations came to an end. Thus *piano forte* (soft-loud), which we obtain now through the hammer with its escapement mechanism, exactly expresses what was achieved thousands of years ago by the dulcimer players. There have been doubts as to who first planned out this hammer with its graduated blow and immediate