

## What's wrong with the Harmonica? by Brendan Power

Last issue I wrote about the rich and fascinating history of harmonica patents from the 1830s to the present day. It's probably true to say that every patent dealt with what the inventor saw as a gap in the market left unfilled by existing models, or a perceived deficiency in harmonicas current at the time – usually both.

That could range from the trivial, from giving the world the first banana-shaped harmonica (how could we have lived without it?), to incredibly complex and quite radical re-inventions of the instrument altogether, such as DP Horsley's *Adjustable Chromatic Chord Harmonica* (the example I gave in the last issue).

One of the essential criteria for getting a patent is to show that the present invention does or creates something NEW. That can be, and most often is, a small improvement to existing designs. It's very hard to create something totally from scratch, as Christian Buschmann, Sir Charles Wheatstone and other pioneers of the 1820s did with the first recognisable modern harmonicas.

All current mouth and bellows blown free-reed instruments are essentially just developments of their early breakthroughs, the result of many incremental improvements over nearly two centuries, all documented in a

plethora of patents.

But that certainly doesn't mean we've arrived at perfection – not by a long chalk! If you consider the harmonica objectively, all types of it, it's obvious it still has many deficiencies and limitations. And I'm not talking about the lack of a starfish-shaped harmonica, although there may well be one! I'm talking about serious, critical things the harmonica simply can't do, or is rubbish at.

What's wrong with the harmonica? An awful lot! Consider these issues with current instruments:

### All Harmonicas

- **Low acoustic volume** compared to most other instruments. Try competing in an Irish or Bluegrass session without blowing out reeds!

- **Hard to make fast, smooth wide-interval leaps.** I liken harp playing to playing a piano blindfold with one finger. As with the piano, the harmonica is a lateral instrument, spaced over a horizontal interface with low notes to the left and high to the right.

Making a smooth jump from extreme low to high notes and back again in a high speed phrase with perfect legato phrasing is simply impossible – but pianists and violinists can do it with ease. That's a serious generic deficiency of the harmonica right there. Perhaps there is a way to overcome it?

### Diatonic Single Reed Harps

- **Imperfect Chromaticism.** Nowadays we can get the missing chromatic notes with bending or overblows, but even the best players have difficulties with intonation and articulation. Keeping the small size, great tone and expressiveness of the traditional 10-hole harp plus having all chromatic notes built in would be a dream.

- **Limited Bending.** Traditional harps bend only to notes in between the main notes. The XB-40 bent maybe too far for many players to control accurately. Could you get a combination of the two degrees of bending, plus all chromatic notes built in? Wow, what a harmonica that would be!

### Double-Reed Tremolo and Octave Harmonicas

- **No Bending.** Tremolo and Octave harmonicas have an appealing sound of their own, but those double-reed notes can't be bent. Could they be?

- **Limited Chromaticism.** The Suzuki SCT-128 is a laudable attempt at making a tremolo chromatic, but could a better one be made? What about an Octave chromatic? That would be nice!

### Chromatic Slider Harmonicas

- **Limited Bending.** Because they are fully valved, chromatics only have isolated-reed bending available, not the far more

expressive interactive-reed bending of the 10-hole harp. A slider chromatic with that bluesy type of bending on all notes would be an awesome music machine.

- **No Whole-tone Slider Trills.** Anyone who listens to classical, folk/world music, jazz, rock or virtually any other musical idiom will know that whole-tone decorations and trills are essential parts of most musical genres. The chromatic only gives semitone trills. That's a limitation that needs to be overcome, any serious chromatic player would agree.

### Bass and Chord Harmonicas

- **Too Large and Cumbersome.** These are the biggest and heaviest harmonicas of all, but do they have to be built and played like that? Watching players get around these things is almost comical, with massive jumps from end to end. Should you have to be a contortionist just to play nice bass and chord parts on mouth-blown free reed instruments? Surely not! There must be a better way to build and play these cool harmonicas.

These are just some of the things wrong with current harmonicas. But problems create opportunities. They're what inspire me to design and patent new harmonica designs to overcome exactly these issues. The first of them should be released by the time you read this article.

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