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ANOTHER TELEPHONE DECISION.

The latest phase of the telephone litigation was developed at Pittsburg, Pa., July 8, in the U. S. Court, before Judge McKinnon, in the suit of the Bell Telephone Co. against the Western Telephone Co., for infringement and injunction. The court permitted the counsel for the Bell Co. to occupy almost an entire day with their argument, but refused to hear any reply on behalf of the defense, although they were prepared to prove that their invention was substantially the same as that used by Reis, many years prior to Bell's alleged invention. At first the court was inclined to hear of this matter, as the issue hinges entirely upon the question whether or not the Reis transmitter will transmit speech regardless of the kind of receiver used; but finally it refused to hear evidence, allowing that to go over to the final hearing. The court, however, held that the questions at issue had been decided recently by Judges Gray and Wallace, and that it would not, in the matter of a preliminary injunction, venture to decide contrary to the opinions of those eminent jurists.

The practical effect of this decision is that the use of the Reis telephone is an infringement of the Bell patent—a position which we have expected the lower courts would sooner or later take, since in no other way can the gigantic Bell monopoly be upheld. The moment justice is done, and the use of Reis' invention allowed, the patent of Bell will be reduced to its proper rank—that of a subordinate improvement. None of the Bell telephone litigations have reached decision by the Supreme Court. If the latter tribunal deals with the Bell patent in the same manner that it has with other wide reaching monopolies, the claims of the Bell people will, in due time, be greatly modified.

HOUSE KNOWLEDGE FOR BOYS.

The Governor of Massachusetts, in an address before the Worcester Technical School, June 25, said some words that are worthy of noting. He said: "I thank my mother that she taught me both to sew and to knit. Although my domestic life has always been felicitous, I have, at times, found this knowledge very convenient. A man who knows how to do these things, at all times honorable and sometimes absolutely necessary to preserve one's integrity, is ten times more patient when calamity befalls than one who has not these accomplishments."

A commendation of "girls' work" from such an authority emboldens the writer to add a word in favor of teaching boys how to do work that may be a relief to a nervous, sick, worried, and overworked mother or wife, and be of important and instant use in emergencies. A hungry man who cannot prepare his food, a dirty man who cannot clean his clothes, a dilapidated man who is compelled to use a shingle nail for a sewed-on button, is a helpless and pitiable object. There are occasions in almost every man's life when to know how to cook, to sew, to "keep the house," to wash, starch, and iron, would be valuable knowledge. Such knowledge is no more unmasculine and effeminate than that of the professional baker.

"During the great civil war, the forethought of my mother in teaching me the mysteries of household work was a 'sweet boon,' as the late Artemus Ward would say. The scant products of foraging when on the march could be turned to appetizing food by means of the knowledge acquired in boyhood, and a handy use of needle and thread was a valuable accomplishment."

Circumstances of peculiar privation compelled the writer, as head of a helpless family, to undertake the entire work. The instruction of boyhood enabled him to cook, wash, starch, iron, wait on the sick, and do the necessary menial labor of the house in a measurably cleanly and quiet manner. This knowledge is in no way derogatory to the assumptive superiority of the male portion of humanity; a boy who knows how to sweep, to "tidy up," to make a bed, to wash dishes, to set a table, to cook, to sew, to knit, to mend, to wait on the sick, to do chamber work, is none the less a boy; and he may be a more considerate husband, and will certainly be a more independent bachelor, than without this practical knowledge. Let the boys be taught housework; it is better than playing "seven-up" in a saloon.

THE NORMAL CONCERT PITCH.

At a large meeting of musicians held in London on June 21, a resolution was passed in favor of the adoption of a normal pitch of 518 double vibrations for the treble.

For a number of years it was noticed that the concert pitch not only was becoming higher, but that it was far from uniform in the different European capitals. This was naturally a source of great inconvenience and annoyance to both singers and composers, and a movement was started in France fully twenty-five years ago to secure a tuning fork of uniform pitch, which should be a standard for the entire musical world. The standard tuning fork deposited at that time in the Conservatory of Music at Paris gave 437.5 double vibrations, corresponding to A or ta in the treble stave. Consequently C or do of the treble would result

from 522 double vibrations. In England, the Society of Arts recommended that this note should be represented by 528 double vibrations, a number having the advantage of being divisible down to 33, which is a quality of some importance, since each descending octave has but half the vibrations of its superior stave.

The new standard of 518 double vibrations for the treble C or do, if the cablegram has reported it correctly, permits but one division, giving 259 double vibrations for the middle C of the scale. The succeeding lower octaves must therefore all be represented by fractional vibrations.

SINGLE LIPPED DRILLS.

There is known to some machinists a peculiar drill known as the "cannon" drill, the "half-round" drill, and the "half lip" drill, according to the prevailing nomenclature of locality. But all these drills depend for their centering and line on some guide outside themselves; they must be guided by center and side like a boring tool that works in an already formed and possibly irregular hole.

Another drill is really a cutting tool composed of a guiding center, which is the drill proper, and two wings of rotating cutting edges. This is known as the "pin" drill, the "teat" drill, and the "flange" drill; in fact, it is an untwisted auger adapted to metals instead of wood. If pressure alone induced the auger to penetrate the wood, without the aid of the threaded screw point, and the wood chips did not clog, the pin drill would be a good wood auger. The auger, by means of its threaded point, is pulled into the wood, but the drill must be forced to its work. With this difference the auger and the drill are very similar.

The writer has in possession and use an "expandable bit" which will bore a hole from five-eighths of an inch diameter—its normal size—to one of two inches diameter—its extreme limit. The expansion is made by means of a sliding blade that may be secured at any point desired. This is a single blade (not two on either side the center), and it is surprising how fast this single cutter works, cutting a clean hole, the bit itself being merely a central shaft around which the one wing of a cutter swings. The tool is suggestive, and it was thought that if a self-progressing tool like an auger could keep its center with one blade, why could not a forced tool like a drill also keep its place with one cutting blade—in short, why is it necessary to make drills with double lips? It is quite evident that where two lips are to be ground exactly alike to form a center, there must be very exact work to preserve the changing center to conform with the double circumference—or radii. If the center was fixed, a single cutting wing could be easily adapted to size.

A favorable chance gave opportunity to test the possibility of a single lipped drill. In passing through a shop it was noticed that a workman broke one of the blades of a "lip" drill or "teat" drill. He was about to have it reformed, when he was allowed to grind away the fragments remaining from the broken portion, and use the drill with a single lip or wing. It worked admirably; cut as rapidly as when there were two lips, and as a proof of its superiority over the two lipped drill the terminal burr came out clean, instead of having an inner circumferential ridge. It is noticed that the burr or the last clean cut of the "teat" drill is a disk, the last of the drill's work. This disk is rarely a smooth one, but if examined it will be found to have two circumferences, one inside the other, that show that the two cutting edges do not act uniformly; in short, that it is difficult to grind a drill to center. Perhaps a single lip drill would be an improvement on our double lip drills in many cases. It certainly would be when there could be used a projecting and guiding center such as is necessary to "teat" drills.

The "Novelties" Exhibition of the Franklin Institute.

The pronounced success achieved by the Electrical Exhibition held under the auspices of the Franklin Institute, Philadelphia, last year has probably been a principal inducement moving that society to hold this year what is styled a "novelties" exhibition, in the well situated and capacious buildings and grounds that were utilized for last year's display. The exhibition will be open from September 15 to October 31, and exhibitors will be charged \$2 for ten square feet of space, with 10 cents more for each additional square foot. Applications must be made before September 13, and those already received give promise that the exhibition will be one of unusual interest. All applications for space should be made on blanks that give full particulars, and will be furnished on addressing the Committee on Exhibitions, Franklin Institute, Philadelphia.

Nickel Crucibles.

Crucibles of nickel have lately been adopted in some chemical laboratories, in the place of the silver ones generally used for melting caustic alkalis. They have the advantage, not only of being cheaper, but of being capable of resisting a higher temperature than the latter, and the result is said to be favorable.