

**A NOVEL MUSICAL INSTRUMENT.**

An instrument upon which any harmonica player can perform, but in which the tones are produced by strings struck and vibrated by hammers, instead of reeds operated by air pressure, is shown in the illustration, in section and in perspective. The playing portion is arranged similarly to a harmonica, and by the inhalation and exhalation of air through the air tubes the hammers are arranged to strike the strings in a manner similar to the hammers of a piano. This improvement has been patented by Mr. Edwin P. Hicks, of McAlester, Indian Territory. The strings pass over bridge pieces of the sounding board, and have their ends wound about the usual tuning pins, while a detachable upright, having at its upper end a mouth piece similar to that of a harmonica, is secured to the base of the frame, a felt strip being interposed between the upright and the base to form an air-tight joint.

The mouth piece has key or air openings which extend down through the upright and communicate with air chambers in the base, as shown by the arrow in the sectional view, these chambers communicating with air cylinders, one for each pair of keys or hammers.

These keys consist of levers arranged alternately, an upper set being fulcrumed upon a rod supported by end blocks, while the lower levers are fulcrumed at their rear ends in a transverse bar, the operating rods, connected with the upper set of levers, having at their upper ends pistons operating in the cylinders, while the lower levers are connected with the rear ends of the upper ones by Z-shaped wires. The front ends of both levers are tipped with felt, and arranged to strike plungers loosely held for vertical movement in a plunger block fitting in a cut-out portion of the sounding board, the plungers having their hammer heads normally about a sixteenth of an inch below the strings. By blowing into the mouth piece the pistons of the different cylinders are depressed, thereby operating one series of keys to throw the plungers up against the strings, the elasticity of the strings quickly throwing the plungers back to their normal position, whereby the strings are allowed to vibrate after being struck. By drawing in the breath, and sucking up the air in the chambers, the pistons are drawn up, raising the rear ends of the upper series of keys, and causing the adjacent connected lower levers to strike the plungers, throwing them in a similar manner up against the strings. The invention provides a combined harmonica and zither or harp-like instrument designed to be of simple construction and comparatively inexpensive.

**AN IMPROVED SAFETY CATCH FOR GUNS.**

The illustration represents a simple and durable device, which can be attached to the lock of any gun, whereby the triggers will be normally locked, but when the arm is held at the shoulder, or in a firing position, the pressure of the hand upon the grip or stock of the piece will instantly release the triggers. This improvement has been patented by Mr. William E. Jenkins, of Rock Hill, S. C. As shown applied to a hammer gun, in the lower view, a lock latch is pivoted in a chamber in the

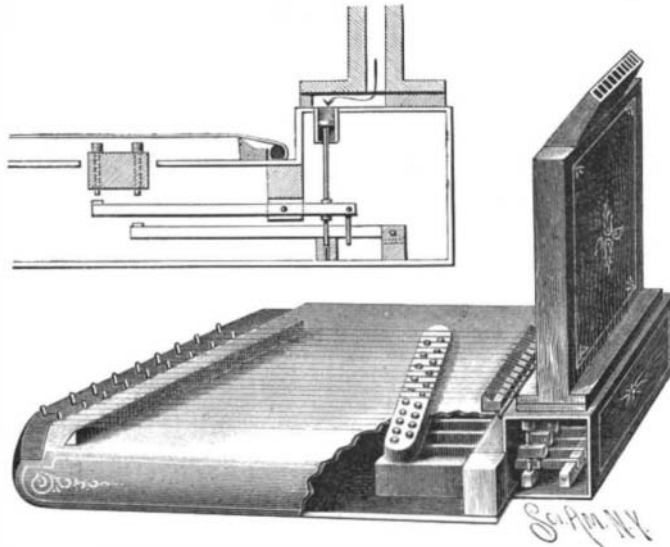
stock, and by pressing the plate inward against the tension of the spring the outer end of the rear lever is depressed, turning down at the same time the forward end of the other lever, which enters a diagonal recess in the back of the latch, which is thus forced rearward and downward and completely disengaged from the triggers. The moment pressure is removed from the trip plate the spring returns the plate to closed position and the levers to their normal or locking positions. In the application of the improvement to a hammerless gun, as shown in the top view, the trip plate covers an opening in the bottom of the

stock, and a single centrally pivoted lever is employed instead of the dual levers, both forms of the device being equally efficient for the purpose designed, and being adapted to afford immunity from the large number of accidents constantly occurring from the accidental or careless discharge of guns.

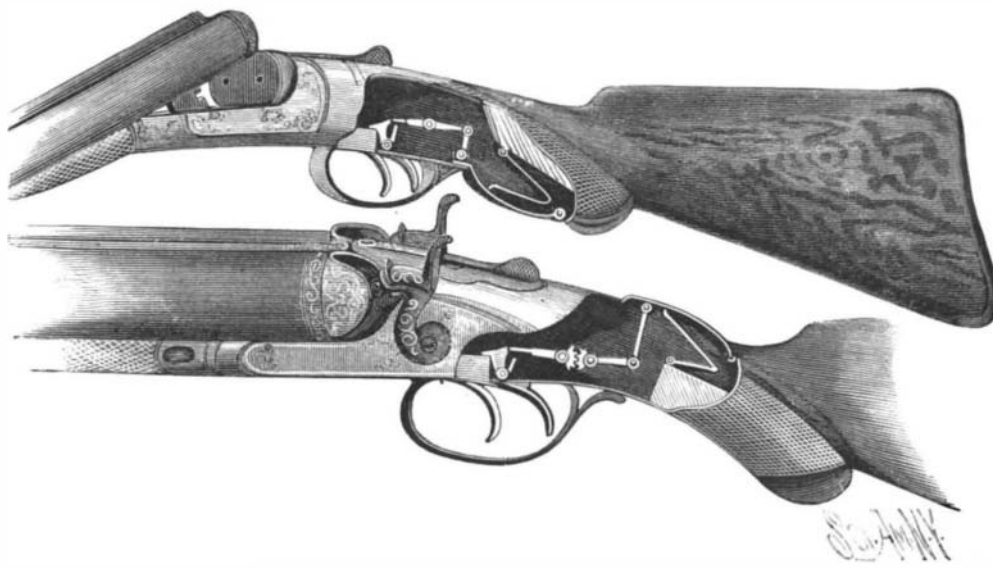
Further information relative to this invention may be obtained of the Jenkins Safety Catch Gun Co., Rock Hill, S. C.

**The Berlin Elevated Railroad.**

This belongs to and is run by the government, and are most of the railways in Germany. It carried be-

**HICKS' PNEUMATIC ZITHER.**

tween five and six million passengers last year, and pays well on the investment. At certain hours of the morning and evening, when it is more availed of by the laboring classes, rates of fare are very low; at other times rather higher than on the New York elevated railways. This railway, which belts the entire city, must be seen to be appreciated by those familiar with the New York elevated system and its disfigurement of the streets. The Berlin street railway is constructed with as much care and solidity as are any of the great trunk railways of the United States. Its passenger stations are more commodious and give better protection to passengers than the majority of railway stations in the principal cities of America. Instead of disfiguring the streets, it is an ornament to them. When it runs on a level with the upper stories of a house, passengers have no chance to look into the windows of sleeping rooms, for it is so managed that the tracks pass by the side walls where there are no windows. After the route had been surveyed and determined upon, the government bought every piece of property that could be in the least degree damaged. The houses were torn down so as to give clear space; the whole bed of the sidewalk, and in some instances of the street, was occupied. In order not to interfere with business, wherever necessary new outlets were opened where old ones were closed. A solid superstructure of masonry, with ex-

**THE JENKINS SAFETY CATCH FOR HAMMER AND HAMMERLESS GUNS.**

terior walls presenting as finished an appearance as that of well-built houses, and ornamented at the top with arches and railings, was constructed. On this was laid the tracks, laid as I have said with as much care and of as durable material as will be found anywhere. Going through the most populous districts, it, neither by smoke, sound, nor appearance, causes annoyance of any character. For miles, ensconced under the massive roadway, are to be found restaurants and shops, where people eat, drink, sell, and buy without the least consciousness of the rumble and the roar above their heads.

**Sugar in Florida.**

The only sugar mill in Florida is situated eight miles from Kissimmee, at a place called St. Cloud. It is situated on a beautiful lake in latitude 28°, and is in what is known as the Disston purchase. The lake has been drained so as to be lowered about ten feet, and the mill and plantation is situated in what was once a swamp. The place has about one thousand acres of muck land, on which the cane grows. It is by far the prettiest place I saw in Florida, and is said to be extremely healthy. There is about five miles of narrow gauge railroad laid down permanently, and several miles of iron railroad in sections that are movable. They also use four mule carts with eight inch tread, so that they won't cut into the muck. The muck or soil is the decayed roots and trash of the bottom of the lake, in some places five feet deep, at others only a few inches. Under all is white land: Pine land is from one to two miles apart; between it is the plantation. The muck land yields from twenty to forty tons of cane to the acre, averaging about thirty. The cane tassels in some spots, but not all over. The company pays \$4.50 per ton for cane and makes it produce 180 pounds of sugar. Profits are large.

They now have about seventy stations and twenty-five laborers; but in grinding season have double that number. They prefer negroes. They work thirty-five mules, buy all their feed except a very little. The company has its own store and its own railroad. The canal is about forty feet wide and the water very swift through it down to the next lake; also have a draining machine to throw out the rain water. This year they are planting 600 acres more in cane, and say it will raton in five years, which I doubt. The muck or soil gets on fire sometimes and burns up the stubble. The tops are hauled out, as they are afraid to set them on fire, as they do in Louisiana. The land is ditched every 100 feet in wet weather. They put bog shoes on the mules. Italians are not very good laborers; the company prefer negroes. Wages are \$1 per day, and the laborers feed themselves. They say Italians are so economical that they will not furnish themselves good food. I expect it is so, as they move very slowly and appear to be very stupid.

There is one manager and two overseers on the place, besides a blacksmith and cooper, etc. The mules are a good size, but are not fat. I saw no oxen or hogs. The cane rows are eight feet apart and cane is very thick. They do not dig the stubble. The cultivation is very easy. As there is no grass scarcely, the company has sold no small tracts of land yet. They are preparing to plant several thousand acres in rice. Take it all in all, it is a splendid place and will be extremely profitable if the soil or muck proves to be durable; they use no fertilizers yet. The piney woods of Florida are agriculturally worthless.—*Home and Farmer.*

**A New Solvent of Camphor.**

From the frequency with which the indications for the subcutaneous injections are met with, it is evident that a good and reliable solvent for this substance is a great desideratum. Ethereal solutions rapidly evaporate. Alcoholic solutions also evaporate, and the camphor becomes precipitated, so that injections of such solutions produce severe pain or even abscess. Solutions of camphor in oil are difficult to employ, while besides possessing the disadvantage of the liability of becoming rancid.

In the *Zeitschrift fur Therapie* for September 1, 1891, Dr. Karl Rosner recommends in the highest terms a solution of camphor in liquid paraffine, which, when slightly warmed, forms a perfectly clear and limpid solution. He states that he has kept this solution for more than five years without its properties becoming changed.

**A Digest of Cycles.**

In the United States Patent Office classification of inventions cycles are to be found under such sub-classes as velocipedes, tires, wheels, hand cars, traction wheels, sled propellers, sled brakes, wheelbarrows, signals, lamps, cyclometers, etc. Mr. J. H. Allen, an examiner in the Patent Office, has compiled a digest of these, including many other sub-classes, such as attachments, mode of propulsion, etc.

The drawings and claims will be given. The publication is to be in two volumes, viz., plates, claims; containing from 1,000 to 1,500 pages. Subscription price, \$50. To inventors, manufacturers, and attorneys the digest will be found invaluable for making preliminary as well as expert examinations, and will save many times its cost.