

**AN IMPROVED DENTAL PLUGGER.**

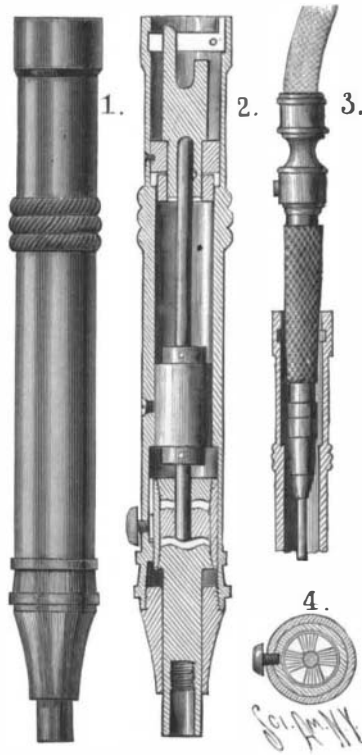
The illustration represents a dental tool which has a double action, being able to strike a number of blows with the point at one revolution of the driving shaft, and the point being brought into action either when its working surface is pressed against an object or when the point is pulled rearwardly. By its use, also, fillings of any shape may be perfectly placed and located in any desired position. The improvement has been patented by Ormond E. Wall, Honolulu, Hawaiian Islands. Figs. 1 and 2 are side and sectional views of the tool, Fig. 3 showing a portion of the plugger barrel, with a hand piece in position in its end. In the forward end of the barrel is screwed a plug, bored to receive the loosely sliding point chuck, having at its outer end a socket for the plugger point, while within the barrel, adjacent to the plug, is a sliding cylinder, longitudinally grooved to receive a projection preventing it from revolving on the pressing of an exterior button. The point socket has at its inner end a head screwed into the outer end of this cylinder, and in the opposite end of the cylinder is a plug, the inner face of which, and of the chuck head, have ratchet or undulating surfaces, as shown in the transverse view, Fig. 4, an intermediate revolving piston also having two similar undulating surfaces. The piston is secured to the end of a drive shaft turning loosely in a guide block, the shaft being rotated in various ways, and being shown in Fig. 2 adapted to receive a slip joint. An ordinary drill hand piece may, however, be employed, as shown in Fig. 3. In operation, the plugger point is screwed to the chuck, the ratchet teeth of which are, by pressing on the point, brought in contact with the ratchet teeth on the outer face of the rotating piston, the four ratchet teeth causing four blows to be struck at each revolution of the piston. For the back action, the cylinder is moved forward by pulling on the plugger point, when the teeth of its inner ratchet engage with the inner ratchet of the rotating piston, producing a similar series of back-acting blows. By pressing on the button to prevent the revolution of the cylinder, the operator is enabled to pick up gold, carry it to the cavity and place it in position, without the plugger making any blows and without stopping the machine.

**BERLIN INDUSTRIAL EXPOSITION OF 1896.**

The Berlin Industrial Exposition was opened on May 1, by Emperor William. This exposition is of enormous proportions and will be a great credit to the empire. Forty buildings have been erected for the purposes of the exposition in Treptow Park in the north of Berlin. The grounds used for exhibition purposes are larger than those of the Paris Exposition of 1889. The river

Spree, which is so narrow in the heart of the city, widens out at Treptow Park, really forming a small lake. This gives a chance for some fine effects of landscape gardening. The position of most of the buildings will be seen by referring to the engraving.

The main building covers a space of 53,000 square meters, and is intended to shelter the displays of most of the groups exhibiting in the exposition. Two tall



WALL'S DENTAL PLUGGER.

and slender towers and a grand aluminum cupola give this building a very striking and graceful appearance. A vast, crescent-shaped colonnade in front of this structure serves as a covered promenade ground, and contains, besides an elegant café, a number of institutions for the convenience of the visiting public, such as post and telegraph office, telephones, reading rooms and bureaus for the press, money brokers, information, etc.

The building for Chemistry, Mechanics, Optics and Photography (2) contains the exhibits of these groups, and also a lecture room for lectures on popular scientific subjects. The great Fisheries building, consist-

ing of two adjoining wings connected by a central structure, will harbor in its walls the groups of Food Products and Beverages (3) and the Fishery and Sport Exhibition (4).

The municipality of Berlin exhibits in a separate pavilion (5) the system of technical, industrial and mechanical schools now established in the capital of Germany. The building for Water and Gas (6) shows models and plans of conduits and gas fixtures of all sorts. The Alpine Panorama (7), with an inclined plane railway, presents a drastic and imposing picture of the Zillertal and its glaciers. Visitors will enjoy such a magnificent view from the Restaurant (8), situated on the banks of the Spree, that it will become deservedly a favorite resort. In the marine exhibition (9) large models of all sorts of shipping, men-of-war and merchantmen, will be displayed and maneuvers carried out in exact imitation of real naval exercises. The Giant Telescope referred to in our last issue (10) will prove a great attraction for scientists and the public in general. Old Berlin, with the Theater Old Berlin (11), a most artistic reconstruction of the old city, carries the visitor back centuries ago to that time when the present vast metropolis was but the capital of the Electorate of Brandenburg. The German Colonial Exhibit (12) will strive to give a faithful picture of the German Colonies, not only by exhibiting their natural products and manufactures, but also by displaying groups of the natives and by showing the mode of life they lead at home. The Grand Main Restaurant (13), situated as it is in the center of the grounds and on the choicest spot of the same, will doubtless prove a favorite resort for all visitors.

The progress made in educational matters up to date, as well as all improvements in sanitary and benevolent institutions, can be studied in the building (14) erected especially for those groups.

A most original and interesting spectacle of Oriental life will be presented to the visitor in "Cairo in Berlin" (15), a gorgeous but faithful imitation of the capital of Egypt with its streets and buildings. The Horticultural Exhibition (16) will be a beautiful and magnificent display of nature's most graceful products.

Gondolas and many pleasure boats of every style will enliven in an interesting and attractive manner the Grand Lake (17), constructed on a former popular playground, and this magnificent artificial basin of water, with the extensive avenues of fine old plantains that line its banks, will form a picture of beauty that visitors will never forget, while in strong contrast with this artificial body of water, still vying with it in beauty, is the old Carp Pond (18), with its green banks, its swans and waterfowl. It was the idyl of Treptow Park and will prove to be the idyl of the Exposition.



1. The Main Building. 2. Lecture Hall and Building for Scientific Industries. 3. Group for Food Products. 4. German National Exposition of Fisheries and Sports. 5. Pavilion of the Municipality of Berlin. 6. Pavilion for Water and Gas. 7. Alpine Panorama of the Zillertal. 8. Grand Restaurant on the River Spree. 9. Marine Spectacle. 10. Giant Telescope. 11. Theater Old Berlin and Old Berlin. 12. German Colonial Exhibition. 13. Main Restaurant. 14. Educational and Benevolent Institutions Exhibit. 15. Cairo. 16. Horticultural Exhibition. 17. The Grand Lake. 18. The Carp Pond.

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