

Conception
Theory of

4875

A remplir par l'expéditeur - Cocher la case correspondant au taux choisi (voir au dos)

R 1	R 2	R 3	R 4	R Ét
-----	-----	-----	-----	------

DESTINATAIRE : M SYBRON Italia 17. de Cos
89 Bd Auguste Blanqui
à 1750-13 PARIS

Visa de l'agent

The matter manufacturing of one of this automatically or

Date	H	PRIX	Nature de l'objet n°	Services Spéciaux	Taux Rec.	Contre remboursement
------	---	------	----------------------	-------------------	-----------	----------------------

As far back automatic system based on geographic shape detection and the working of each unit by a machine tool (numerical control system). As I failed to resolve the problem of the occlusum, the method was only partly automatic.

In 1973, SWINSON took those principles again, but he imagined a double reading, before and after the wax reconstitution of the tooth. That method again was not automatic.

The idea was taken again by BURSTON and YOUNG'S team in 1977 and 1978. In 1979, HESLINGER used SWINSON's method, but practised the scouting by photo grammetry.

The main defects of those three methods were :

- Not to automatise the method (necessity to build in wax or any other stuff) the outer side of the prosthesis.
- To need a soft because there were no guide marks on the analysed piece.

That is why, in 1980, I proposed a new method including a complete automatization, resolving the problem of the occlusum.

Dealing with a new technology is at the origin of important didactic problems. As a matter of fact, each section is directly concerned and even totally changed. The most affected are prosthesis and dentistry. Parodontology, surgery and ODF too. Our purpose is not only to realise a crown, and take a print within a few minutes, but to realise a complete, mathematical analysis of the buccal capacity and to associate them a general mathematical treatment hustling the classical steps.

On purpose to clarify this report about the Optical Print, let us divide it into two parts. The first part presents the total chain, and the second part transposes this chain to the different sectors. It should be clearly understood that each sector uses a single and only setting, with perhaps a few exceptions.

Ale Grand-Lemps le 31 Mai 1983



de Marie

Adressé à Johnson et Johnson
à ARDEN
à SYBRON Italia le 30.5.83

COMPLETE DESCRIPTION...

The whole setting includes :

- A kind of video camera analysing the three dimensional shapes of the tooth.
- A computer and its logical.
- A video screen and a keyboard to speak with the picture (to change it...).
- Two peripherals, the first one being a tool-machine with numerical control (CAO-CFAO), the second one being a printing machine.

1. The shape captor.

Its office is to collect and then to decode in 3 D the shape of one or several teeth, one articulated or a face. From a simple photography, we code the shape in X, Y, Z to a micron. This code has been studied in order not to burden the computer. This system is made of optic fibres or not, associated to a CCD matrix with the corresponding cards. No overwork, no intermediate stockage associated to a re-reading, a heavy, expensive and out of age system.

Its the main part of the whole system. It allows the suppression of any kind of print, and secures a very quick shot (one or two seconds). Very precise, less than 20 microns, it avoids laboratory works, including articulating. (We can catch the shape of a tooth in less than 1/60 of a second with a precision of 20 ...).

2. An interphasing system, able to provide valuable information to the computer. Nothing of the kind existed in our business before. It works within 1/10th of a second.

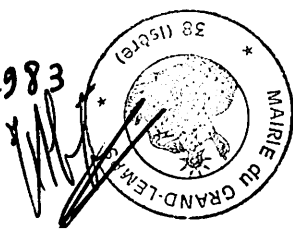
3. A system framed by a 32 bites Hard and a logical. It allows to work the values, so that from the shape of a stump we could reach to the prosthesis. For example, it allows to : dimension the future crown or bridge according to the shape of the stumps and the occlusion. The prosthesis keeps its precision of 20 microns without any possible interference.

In the same way, we can actually imagine a denture, QDF (brackets, dentures) or of periodantium sciences (splints...).

To realise automatic researchs of diagnostic (ODF, dentistry, outlining of prosthesis, kinematics searcher and of sound occlusion and pathological in periodantium sciences).

To secure acomplete management of an office as it exists today (cards, book-keeping, radio stocking).

A le Grand temps le 31 Mai 1983
Le Maire



4. A terminal which is a very exact screen (about 500 x 500 points, colour), a special key board, an interactive table, stocking discs and a tracing printing table. Easy to use, this setting allows the automatic treatment of such or such programme (crows, ODF...) but also the free rectification of the informations displayed. For example, for a crown, if it is estimated that the shape does not suit to the expected one, it will be possible to change the shape proposed by the computer and the logical by the use of the interactive table and the key board.

5. A machine-tool with a numerical command. The volume of that machine is that of a cube having a side of 50 cm. It machines for example a crown in about 15 minutes. The precision is between 10 and 20 microns. The machining is almost automatic. The use of a traditional machining or not allows the suppression, from to day, of any classical metals (gold and steel specially). Its possible indeed to work any material as far it is machinable and its surface reasonably suitable. By the same occasion, we avoid wasted wax and the problem of bio compatibility. Though we do not wish to reveal some of our results, we shall proceed to a short prospect of the consequences of the "Optic Print" upon our business.

Description according the differents areas

I Prosthesis.

The lack of precision of the methods actually practised is absolute. It is due to the numerous changes of state it creates. Any study whatever it is, is expensive, unprecise and deservedly forgotten if it does not follow the technological evolution of the science. The way, we actually take prints, associated to the technic of lost wax agrees according to us to that definition.

For us, the matter is not to study the physical or chemical proprieties of such or such paste for prints, but to catch a shape for itself, that is to say a volumetric impression. The volume, of a stump for example, is mathematically determined. It becomes the inside of the future crown. The outer shape suits to the actual tests of health and aesthetic (we respect the ideal occlusium).

So, we happen to restore the external shape both adapted to the shape of the stump and to the necessities of the occlusium.

A Le Grand. Lemp le 31 Mai 1983

Le Maire



The general volume appears on the screen, which can be changed by the intermediary of an interactive table for example. Bridges and swivelling teeth are realised in the same way. Dentures need some more testing. We shall simply say that small dentures offer no particular difficulties.

II Dentistry.

The limit between the prosthesis conjoined and dentistry does not really exist according to the philosophy of the process. If the collecting is good, we can come back to the conception of the inlay with the greatest precision and a minimum of time. Some 10 minutes after having taken the print, the inlay can be inserted in its hole.


III Periodantium sciences.

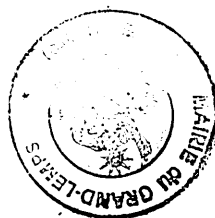
Our approach of the type of occlusium allow us to assert there will be a lot of surprises in that district, as well in the search for the best occlusium as in that of bio mechanic. We shall simply say that each practitioner will be able to select an occlusium in the best conditions, very quickly.

ODF

The fact to justify the purchase of a heavy material in informatics offers large possibilities in the area of the orthopaedy of the face. Most researchs about diagnosis remain unapproachable to a lot of dentists because of their complexity. With a very performing hard and soft system, it is possible to perform very intricate diagnosis and this very quickly and at a low price. The presence of a machine tool at the end of the circuit allows the machining of individual support with mathematical marks. This setting seems fundamental because it allows anyone to have access to something that was reserved to a few specialists only.

The general aspect of this system enables us to define a new type of exercise. The matter is not to make prosthesis only, but to use a setting in a structure without changing it however. The formation is very easy because the method is practically automatic and the financial abatement is not over three years.

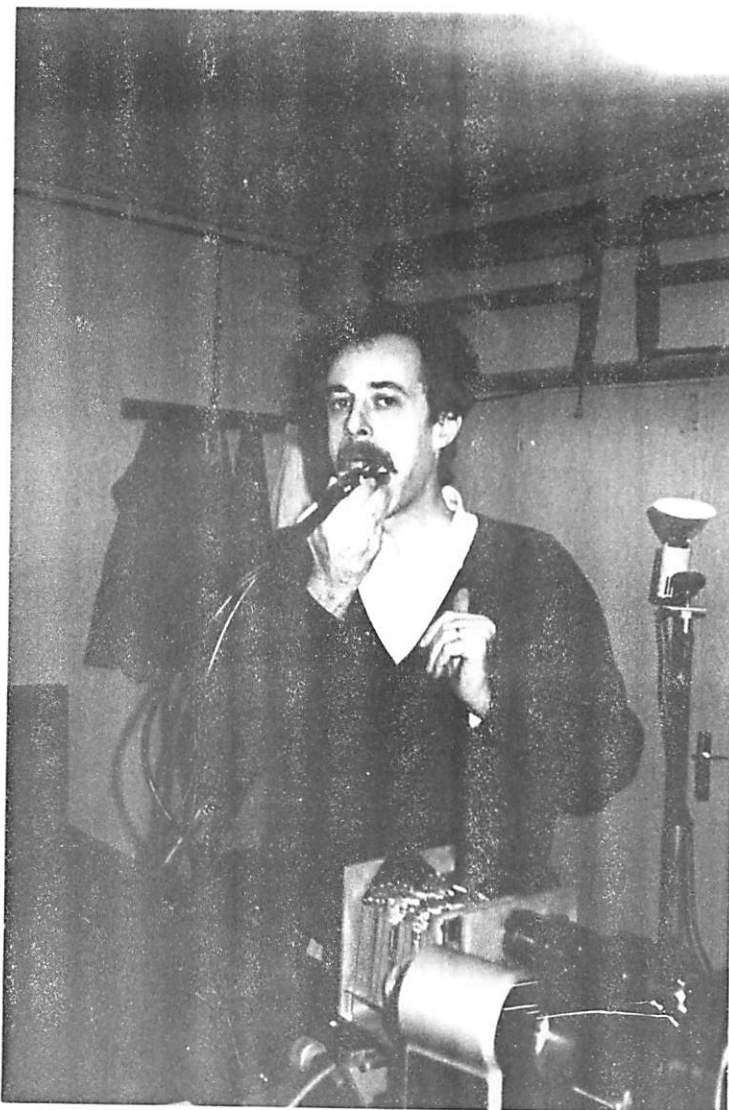
A Le Grand. Semp le 31 Mai 1983
Le Maire




The adding of several drives to that equipment with allow it to evolve easily.

Besides, such a system grants the fractitioner a possibility to be the own master of this prothesis conception as before. He will save time more over he will save money too.

An entirely new prothesis conception is likely to appear because of the presence of M.O. to C.N. Denture will probably fall into disuse.

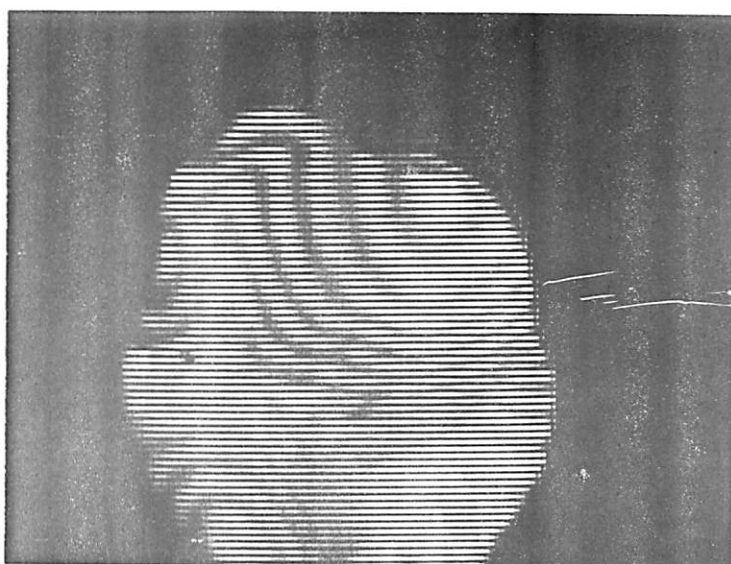
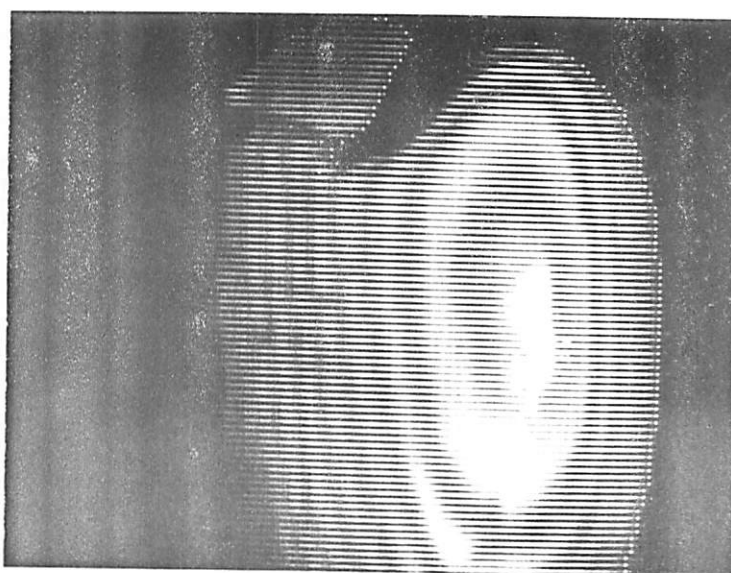
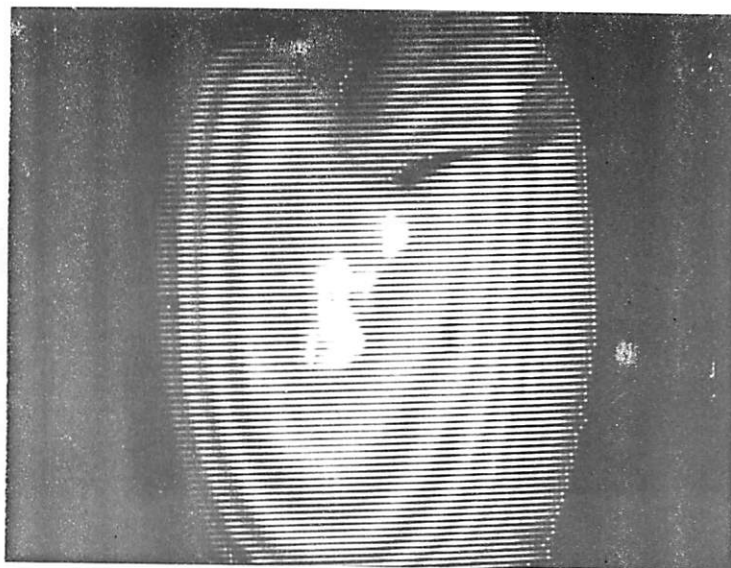


A le Grand. Temp le 31 Mai 1983

Le Maire



FRANÇOIS BURET
DOCTEUR DENTISTE

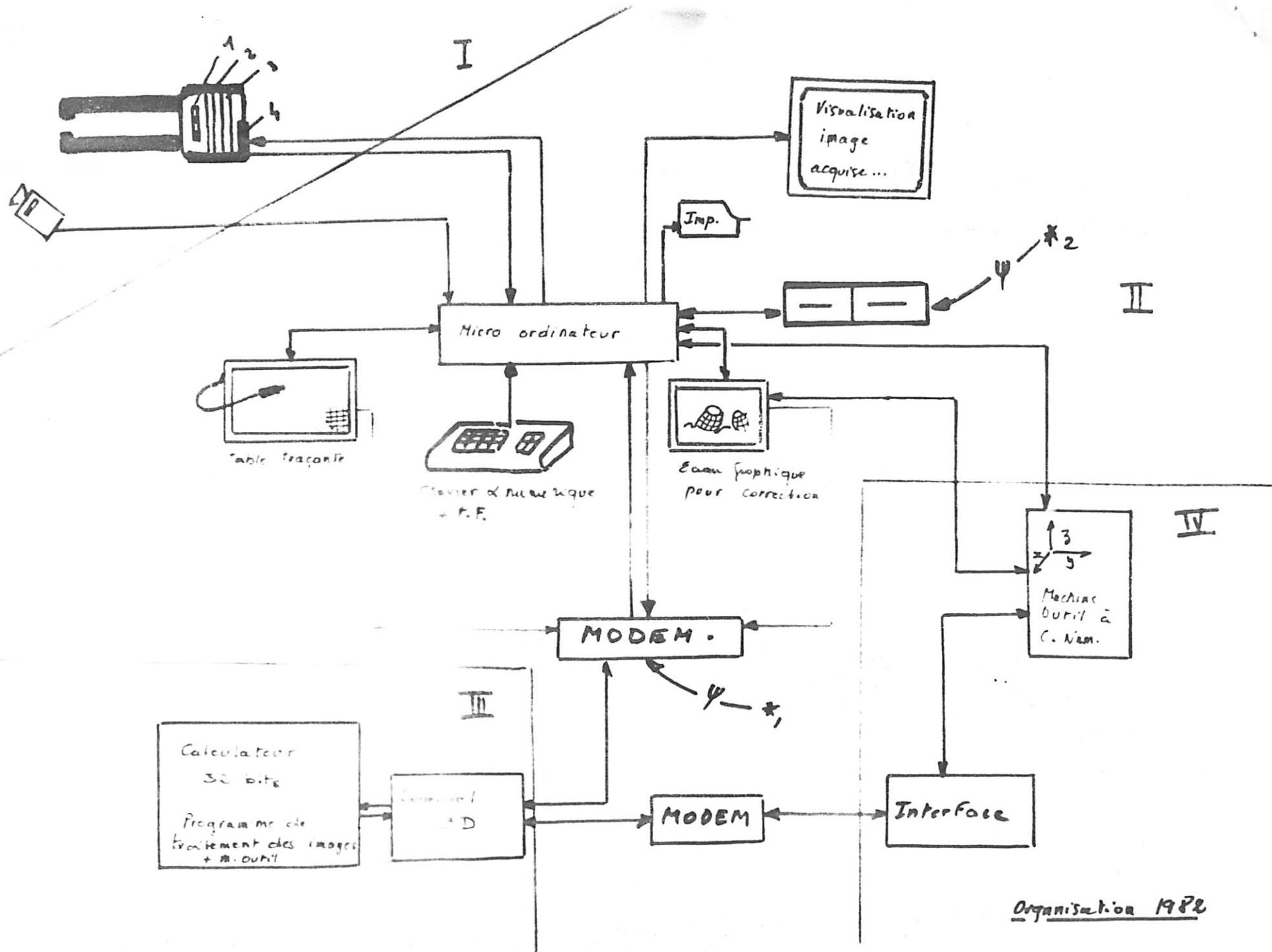


A le Grand. Lemp le 31 Mai 1983
Le Maire



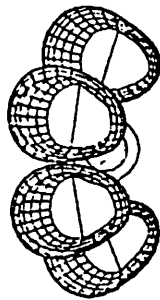
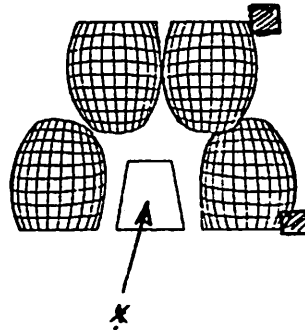
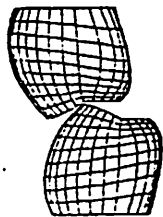
FRANÇOIS CLAY
DOCTEUR MÉTAY

A Le Grand-Étang le 31 Mai 1983

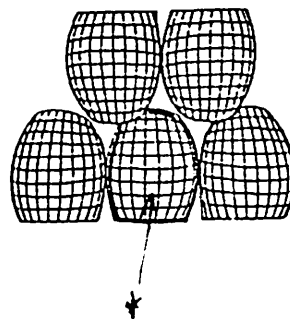
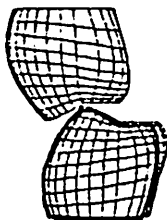
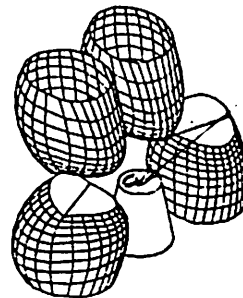


Organisation 1982

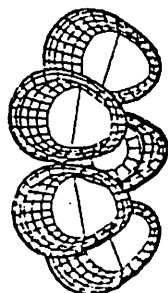




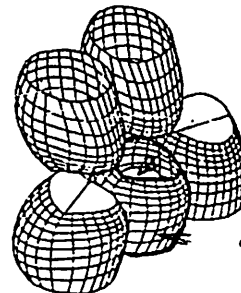
t:1



ajustage occlusion.



t:2.

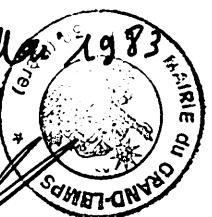


t:12

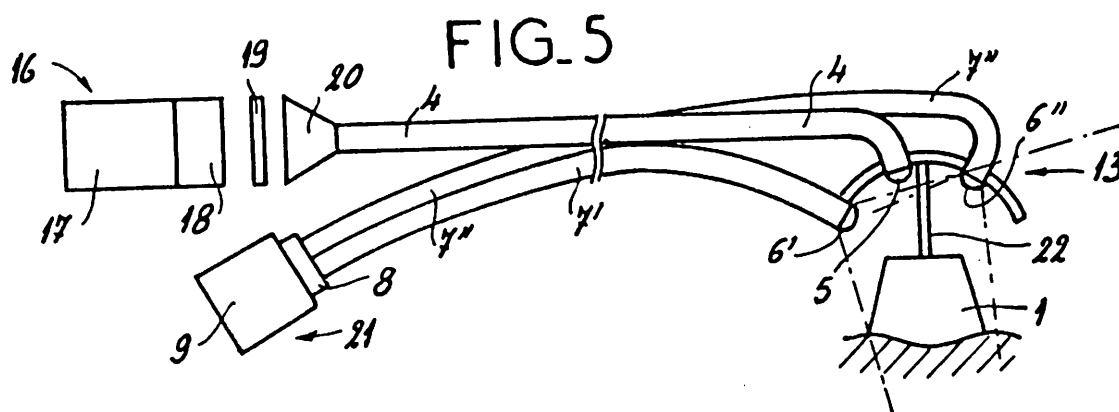
CR

A Le Grand-Samp le 31 Mars 1983
Le Maire

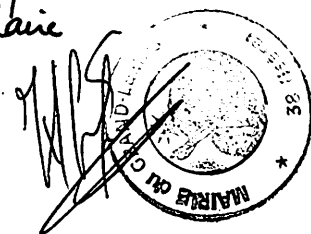
FRANÇOIS
DOSTEUX



Technological development most often brings about a radical alteration in the ways of thinking and producing. An industrial company, the foundations of which are based upon a traditional pattern will probably not survive. If such a company faces the danger, it can either prevent the change through different methods, or amalgamate. As far as the new approach reveals to be quite revolutionary and supported by scientific evolution, the first attitude will just be temporary, and very quickly, companies having chosen the second solution will have the best. In any professional transformation, intellectual uprightness and industrial honesty are the sinews of success.



A Le Grand. Lamp le 31 Mai 1983
Le Maire



FRANÇOIS CURET
DOCTEUR DENTISTE