Title: DENTAL IMPRESSION IMPLANT TRAY

Abstract: In order to efficiently create implant holes needed for implantation procedures on Dental Impression Trays, several square forms were added to the tray. The tray is produced from synthesized resin and includes a centrally—located square form used for the creation of the implant hole, which can be lightly pressurized to easily separate, remove the 2 parts, and form the implant hole at the precise location. In addition, by producing the circular shape above the wanted location of the implant hole, separation is made easier by requiring only a slight pressure on the centrally located circular hole, the implant hole is easily formed. Furthermore, because the tray is produced using synthesized resin, manufacturing is easy and can be easily molded to fit the individual preferences of the medical personnel. Thus, the tray can be used as a personal tray and also plays the role of an dental impression-purpose tray.
TITLE OF INVENTION

DENTAL IMPRESSION IMPLANT TRAY

(Technical Field)

As a dental impression tray exclusively for implants, this invention forms rectangular and circular shapes on the bottom surface of the IJ-shaped plastic tray used for the impression material to obtain impressions of the maxillary and mandibular arch (including the gums and teeth) surfaces, including numbered markings by ways of rectangular and circular shapes to indicate the location of needed implant holes such that when the plastic tray is separated and removed, the end—product is the Dental Impression Implant Tray.

Furthermore, although it was characteristically impossible for ready—made trays to form precise implant holes due to the diversity of teeth—position of each person, this invention allows for the accurate implant hole locations of teeth of any numbering during the removal of the rectangular plastic tray. The tray can also be used as an all—purpose omni—tray for purposes other than implantation.
This invention is a dental impression tray and is collectively referred to as an implant for circumstances where the dental patient receives a dental transplant due to the loss of teeth. Implantation procedures include the artificial creation of implant holes at the corresponding tray location of the target region, forming and producing a rectangular or circular shape. The invention allows for a prompt and precise dental impression of implant holds at the precise location without needing additional tools or procedures.

In the circumstances of dental patients with either dental defects or injuries, a dental molding of the oral cavity and gums is created for the treatment of the oral cavities by means of impression procedures using impression materials.

In such cases, trays are used for dental impressions using impression material, of which either ready—made or custom trays are available. Implantation procedures require the creation of implant holes by means of either a drill or abradant. The complexity of the process is the main
cause of long procedure times.

(Disclosure of Invention)

Dental transplants replacing the lost teeth of patients is collectively referred to as an implant. Implant holes, required for the implantation procedure, is created at the target location indicated by the tray and is produced as a either a rectangular or circular formation.

In order to solve the abovementioned issues, this invention includes numerous rectangular and circular shapes on the plastic tray used for dental impression of the maxillary and mandibular arches. The implant hole maker is indicated by a numbering system. Furthermore, when the impression is separated and removed, the rectangular and circular shapes indicate the precise location of implantation such that precise implant hole locations can be created using a quick and easy method.

The rectangular shapes of the implant holes, in specificity, produce 2 separate rectangular implant hold maker shapes.

The size of the implant holes produced are 8mm.
In order to create 8mm implant holes at specific locations, the invention was produced such that when the two collective squares are separated and removed into subdivided squares of length 8mm and width 2.5mm with a 1mm distance between each square, squares of height 8mm (distance 1mm+ width 2.5mm+ distance 1mm+ width 2.5mm+ distance 1mm) and width 8mm form precise implant holes no matter the location of the tray.

In addition, by producing the circular shape above the wanted location of the implant hole, separation is made easier by requiring only a slight pressure on the centrally located circular hole, the implant hole is easily formed.

In order to create 8mm implant holes, circular shapes of 5-6mm diameters are created on the inside of 8mm diameter circles with 3—4 supports. Implant holes of 8mm diameters are created by putting pressure on the centrally located circular hole and separating the circular shape.
Furthermore, because the tray is produced using synthesized resin, manufacturing is easy and can be easily molded to fit the individual preferences of the medical personnel. Thus, the tray can be used as a personal tray and also plays the role of a dental impression—purpose tray.

(Brief Description of Drawings)

Figure 1 is a 4—directional view of the maxillary arch tray.

Figure 2 is a plane view of the mandibular arch tray.

Figure 3 is a side view of Figure 1.

Figure 4 is a vertical cross—section of the tray.

Figure 5 is a vertical cross—section of the implant hole.

Figure 6 is a 4-directional view of the square needed for implant hole making.

Figure 7 is a plane view of the circular implant hole of the mandibular arch tray.

Figure 8 is a vertical cross-section of the implant hole of the circular implant hole maker.
Figure 9 is a 4-directional view of the circular form needed for making implant holes.

Figure 1-A represents the Implant Hole Maker. C, F, G, and H represent support grooves preventing up-down (C, F) and side-to-side (G, H) movements of the impression material. E is a handle created to support the handle reinforcement. D is a guide for easy finger motions for an easier mounting of the tray.

Figure 2, as a plane view of the mandibular tray, illustrates the supports a1, a2, a4, and a5 of the square form (a) that break when pressurized at the central hole (a3). When the 2 square forms (a) are separated, a single implant hole (b) is formed. Through the use of this product invention, implant holes for molar teeth and others can be created in proper locations with higher precision.

Figure 2—J was invented such that it could be used as either a support groove for the implant material or to simplify the formation process of circular implant holes during implantation of the lateral teeth.

Figure 3 is a side view of Figure 2.
Figure 4 is a cross-sectional view of SECTION "A"."A" of Figure 2 and represents the cross-section of the square form. The square form (a) of the tray floor of Figure 4 is produced such that it separates from the implant hole (b) shown in Figure δ when put under pressure.

Figure δ is a cross-sectional view of the implant hole of SECTION "B"."B" of Figure 2.

Figure β is a magnified 4—directional view of the square form Implant Hole Maker (a). A3 is made with holes such that easy pressure on both sides can be made. Al, a2, a4, and a5 is produced with a slight slope on the outside flooring of the tray to allow easy separation.

(Best Mode for Carrying out the Invention)

In order to efficiently create implant holes needed for implantation procedures on Dental Impression Trays, several square forms were added to the tray. The tray is produced from synthesized
resin and includes a centrally-located square form used for the creation of the implant hole, which can be lightly pressurized to easily separate and form the implant hole.

In order to create 8mm implant holes at specific locations, the invention was produced such that when the two collective squares are separated and removed into subdivided squares of length 8mm and width 2.5mm with a 1mm distance between each square, squares of height 8mm (distance 1mm + width 2.5mm + distance 1mm + width 2.5mm + distance 1mm) and width 8mm form precise implant holes no matter the location of the tray.

In addition, by producing the circular shape above the wanted location of the implant hole, separation is made easier by requiring only a slight pressure on the centrally located circular hole, the implant hole is easily formed.

In order to create 8mm implant holes, circular shapes of 5—6mm diameters are created on the inside of 8mm diameter circles with 3-4 supports. Implant holes of 8mm diameters are created by putting...
pressure on the centrally located circular hole and separating the circular shape.

Furthermore, because the tray is produced using synthesized resin, manufacturing is easy and can be easily molded to fit the individual preferences of the medical personnel. Thus, the tray can be used as a personal tray and also plays the role of an dental impression-purpose tray.

(Industrial Applicability)

The Dental Impression Implant Tray described above is produced using synthesized resin of affordable pricing, such as polycarbonate, polystyrene, acetal resin, fluor resin, polyamide, poly—phenylene oxide, and polysulfone. Thus, in comparison with metal trays, the synthesized resin tray is more durable, lighter, and easy to manufacture for either personal use or as an all—purpose dental tray, and can also be used in dental sterilizers (autoclaves).

Furthermore, in terms of dental treatments needed in order to adjust to the evolution of implantation methods and changes of implant
hole sizes, the invention can be used as a multi-purpose, all-purpose tray.
CLAIMS

[CLAIM 1]

The following characteristics are included of the dental impression tray:

The maxillary and mandibular arch trays make up 1 set.

Dental impression trays are made from synthetic resins.

The tray is made such that easy separation is allowed by including square and circular forms and grooves, and numbered square and circular forms (implant hole maker) for easy and efficient implant hole making.

[CLAIM 2]

A dental impression tray of claim 1 wherein the present invention is characterized by

Implant Hole sizes depending on the size and square form interval of the square forms.

[CLAIM 3]

A dental impression tray of claim 1 wherein the present invention is characterized by
Implant Hole formation through the separation of the 2 square forms from the tray when making square implant holes.

[CLAIM 4]

A dental impression tray of claim 1 wherein the present invention is characterized by

Implant Holes with distinct numbering for each square form during the formation of square implant holes.

[CLAIM 5]

A dental impression tray of claim 1 wherein the present invention is characterized by

several circular shapes and 8mm diameter tray circles used on the tray for the easy and efficient creation of circular implant holes.

[CLAIM 6]

A dental impression tray of claim 1 wherein the present invention is characterized by

preventing the breakaway and left—right shifting of the impression.
material during separation from the teeth after dental impression by including several vertical/horizontal support grooves on the inside and outside of the tray.

[CLAIM 7]
A dental impression tray of claim 1 wherein the present invention is characterized by

a centrally—located handle as a support for reinforcement.

[CLAIM 8]
A dental impression tray of claim 1 wherein the present invention is characterized by

including a finger guide on both the inside and outside of the maxillary and mandibular arch tray for comfortable placing of the thumb and fingers when holding the tray.

[CLAIM 9]
A dental impression tray of claim 1 wherein the present invention is
characterized by

maxillary and mandibular arch trays made of synthesized resin

such as polycarbonate, polystyrene, acetal resin, fluor resin, polyamide,

poly—phenylene oxide, and polysulfone.