

# Electronic Key-Controlled Palatal Expander

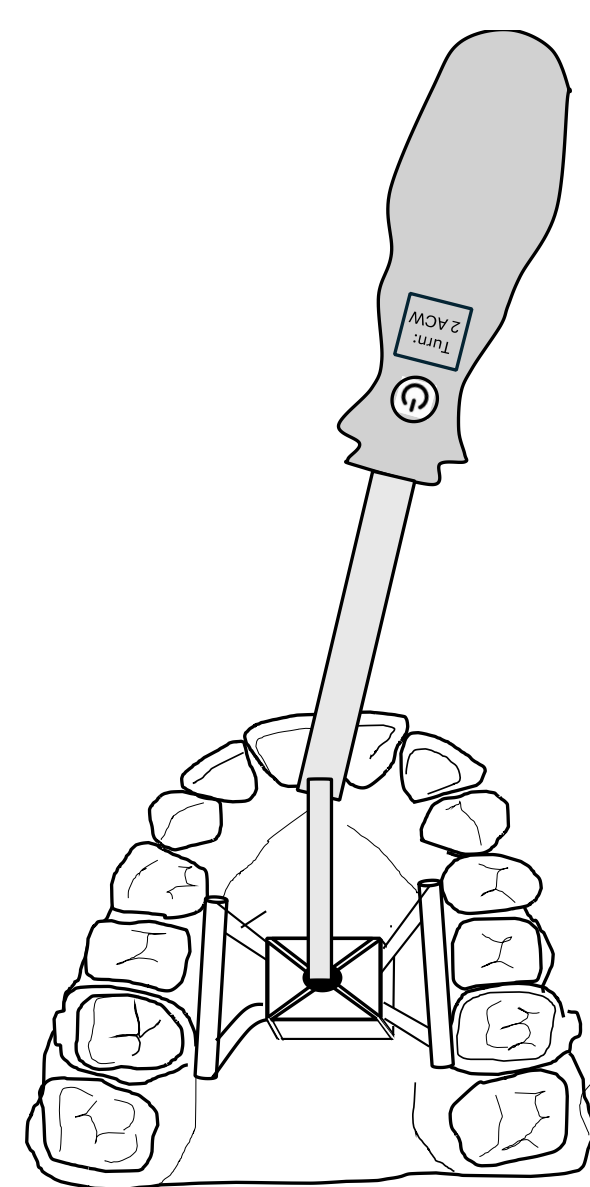
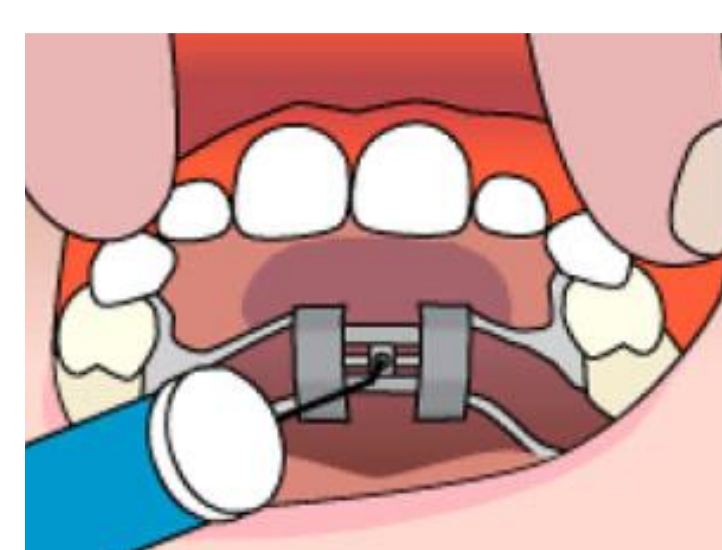
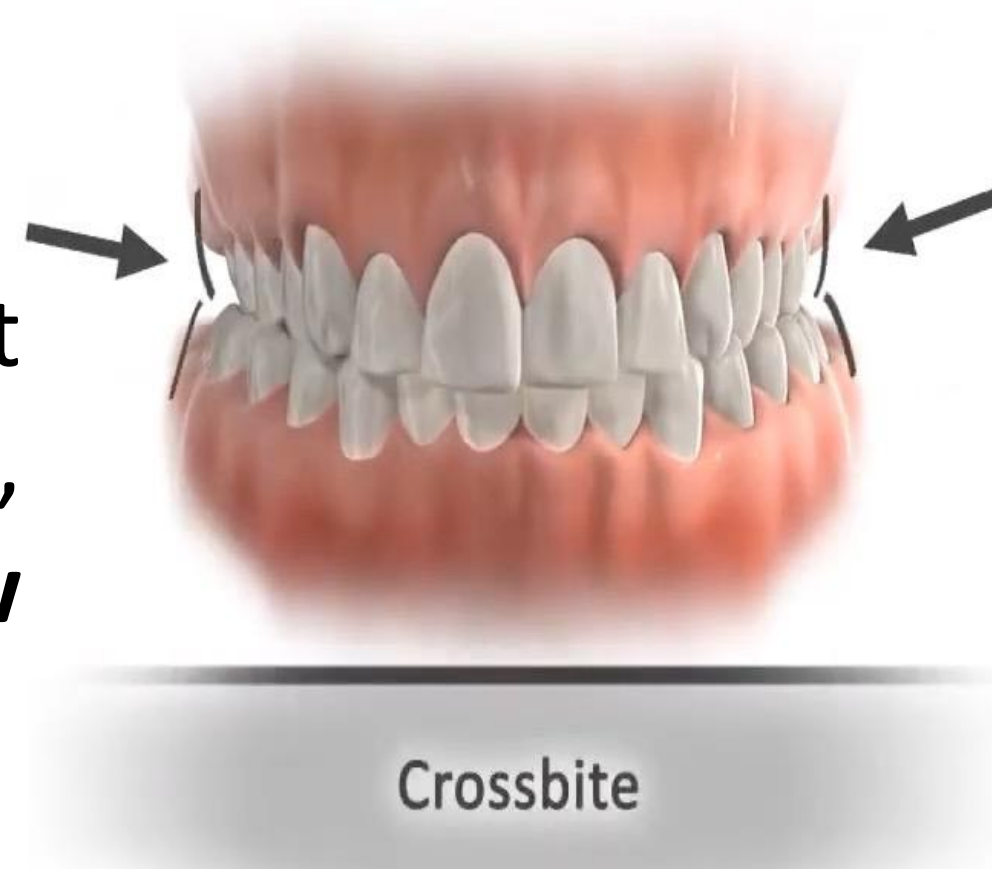
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## ABSTRACT

- Jaw constriction and crossbite affect approximately **53% of orthodontic patients**, leading to issues such as **facial asymmetry, jaw pain, and dental misalignment** if left untreated.
- Traditional solutions, like the **Hyrax palatal expander**, often lack **precision, cause discomfort, and high dependency on manual activation**.
- This invention introduces the **Electronic Key-Controlled Palatal Expander**, a **precise, patient-friendly, and smart orthodontic device**, supplemented with a **mobile app** for tracking and remote evaluations.
- By **enhancing comfort, reducing treatment errors, and improving accessibility**, this innovation advances orthodontic care worldwide.



## DESCRIPTION

The **Electronic Key-Controlled Palatal Expander** is an innovative orthodontic device consists of:

- Fixed Component (A):** cemented to the upper jaw.
- Electronic Key (B):** pre-programmed for controlled activation. (These components are illustrated in figures labeled A and B)
- Mobile App:** tracks progress, sends reminders, and enables remote monitoring.

## KEY BENEFITS

- Precision & Comfort:** eliminates manual errors and discomfort.
- Asymmetric Expansion:** customizable for complex cases.
- Fewer Clinical Visits:** reduces dependency on in-person adjustments.

Designed for **children, adults, and individuals with special needs**, this device enhances **orthodontic treatment efficiency, safety, and accessibility worldwide**.

## PROBLEM

The traditional Hyrax palatal expander depends on manual activation by the patient's family, which can result in **imprecision, increased discomfort, and potential injury**. Frequent manual adjustments also **raise the risk of errors**, leading to treatment delays and higher costs.

## SOLUTION

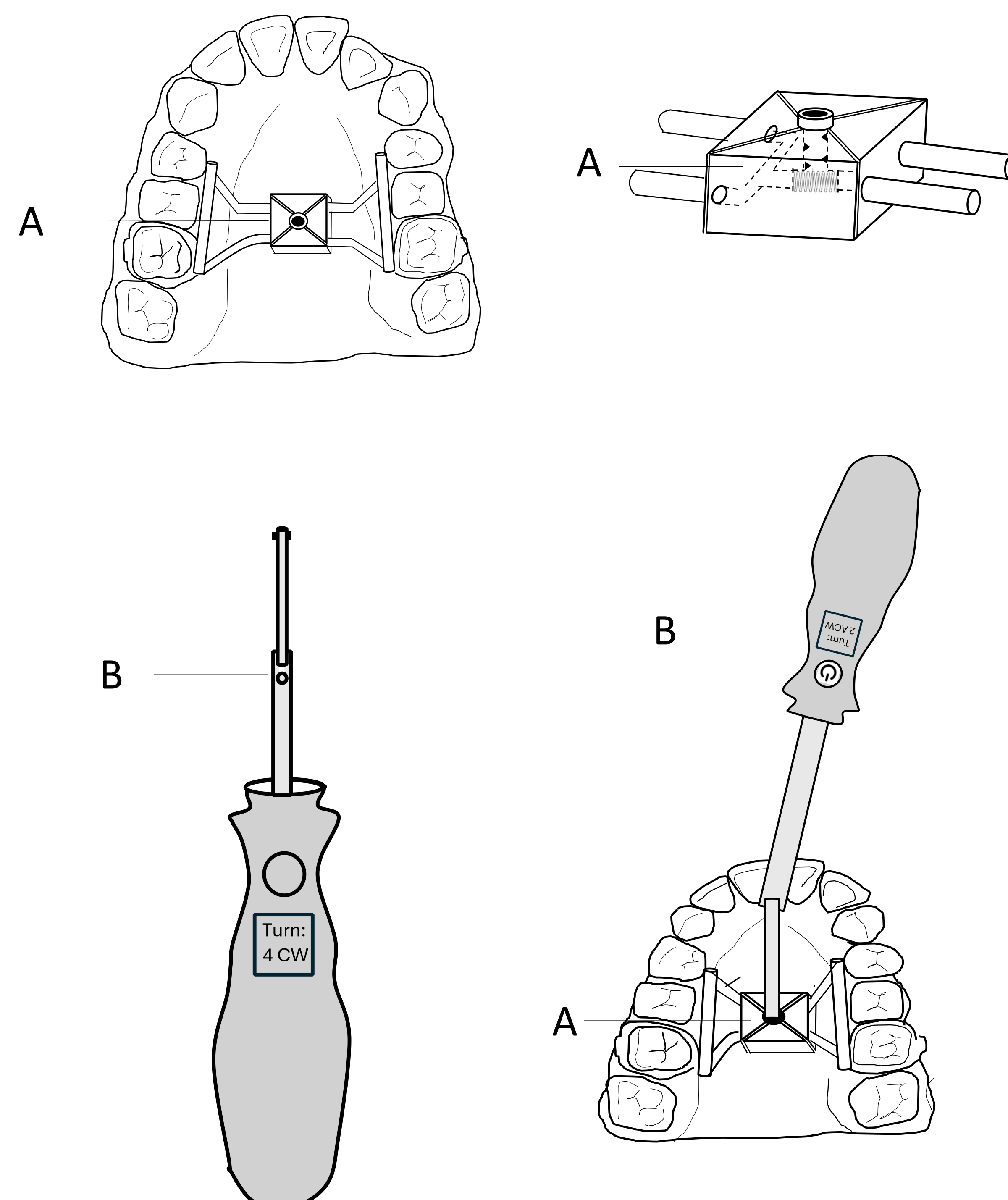
The **Electronic Key-Controlled Palatal Expander**:

- Allows **precise, controlled expansion** of the upper jaw.
- Eliminates the need for **manual skill** from the patient's family.
- Enables **both symmetric and asymmetric expansion** tailored to each patient's needs.
- This improvement in control significantly **reduces risks**, enhances accuracy, and boosts both comfort and treatment efficiency.

## CONTACT US



## APPLICATION





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