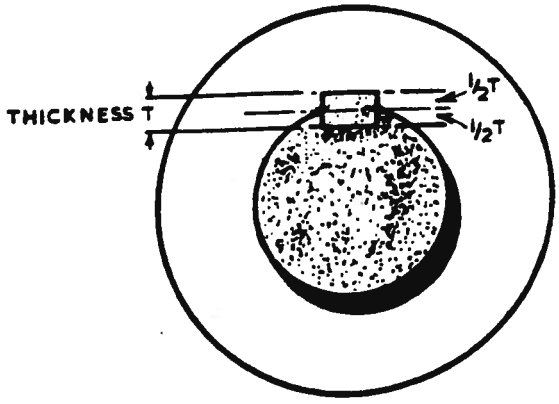
SECTION 8

KEYS, FEATHERS AND SPLINES

A KEY SECURING A SHAFT AND WHEEL
Fig 1.4b

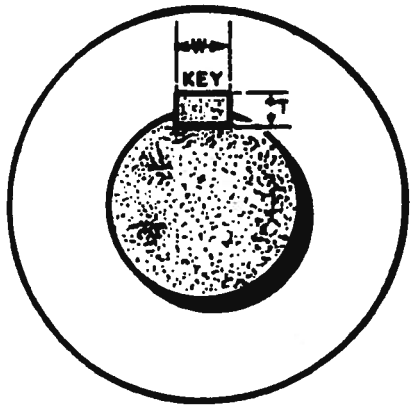


Increasing the length of the keys produces an increase in the bearing surface and hence permissible driving torque.

Type of Keys and Applications

6. **Sunk Key**

A SUNK KEY
Fig 1.4c



This is a very common type of key of rectangular section and engages in a keyway in the shaft and wheel.

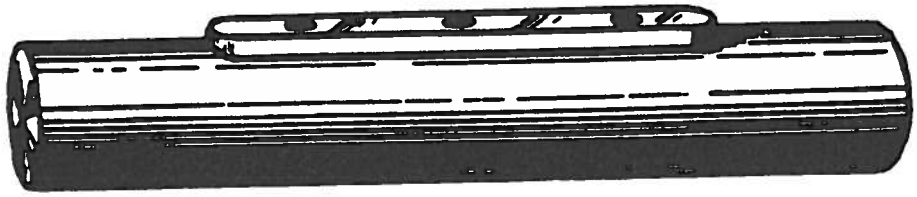
SOFT METAL DRIFTS ONLY SHOULD BE USED TO REMOVE KEYS

9. Feather

A FEATHER
Fig 1.4f

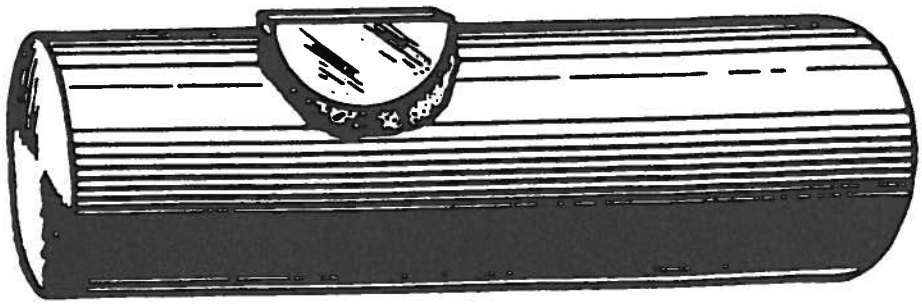
This is a sunk key which is parallel and with radiused corners to allow wheels to be slid onto shafts with the key in position. This key is often screwed on to a shaft by countersunk screws.

A SCREWED FEATHER
Fig 1.4g



10. Woodruff Keys

A WOODRUFF KEY
Fig 1.4h



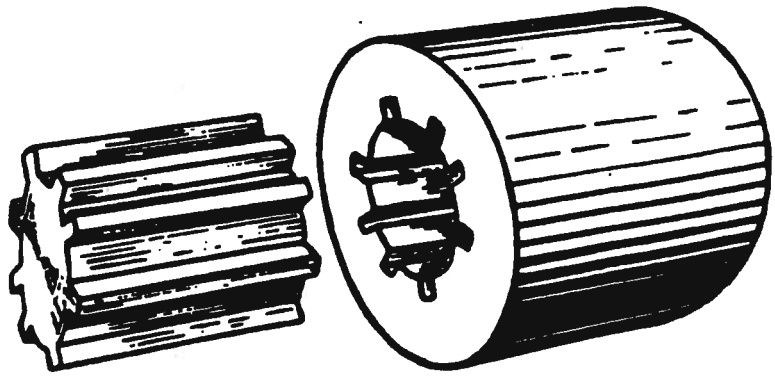
LEWIS, TANGENT AND KENNEDY KEYS ARE FITTED IN PAIRS

14. If keys can be cut on a shaft instead of fitted into the keyways these latter objections would be overcome.

MAKE SURE THAT THE CORRECT CORROSION PREVENTIVE IS USED, IT IS QUITE LIKELY THAT YOU WILL HAVE TO REMOVE THE KEY LATER

15. A spline shaft is a shaft with a number of keys cut on it which fit into a spline hub.

A SPLINE SHAFT AND HUB
Fig 1.4j



Not only can heavy torques be transmitted through the spline shaft and hub but the shaft can be positioned laterally in the hub. A spline shaft and hub can be used to transmit motion between shaft and wheel or between shafts.

16. Before fitting; keys, splines or feathers should be examined, and if burred or distorted, renewed. A corrosion preventive must always be used and consideration must be given to the working temperatures of parent companies.

17. It is vitally important that keys are a good fit in mating shafts and hubs. Keys which are slack lead to backlash and resultant wear, and keys which are too tight can cause damage to key seatings during fitting.

Some of the questions you must be able to answer:

1. Describe six types of keys and their uses.

2. What is a spline?

3. What is a feather?

4. What precautions must be taken before refitting keys, splines and feathers?

5. Why is it necessary to ensure keys are a good fit in mating hubs and shafts?

THERE IS NO SUBSTITUTE FOR THE CORRECT KEY FOR THE JOB