Mills

Escalator Repair & REBUILD

Mills

THEORY OF OPERATION

Prior to attempting repair or adjustment of the escalator it is important to understand its purpose and function.

The escalator accepts the coin thereby allows the mechanism to be operated. It is designed to accept the correct denomination, reject or not accept the wrong denomination, provide a visual indication of coins recently played and then deposit the coin into the appropriate area. (The coin tube).

The mills type escalator functions by the following sequence of actions:

- Coins of the correct size or smaller can be inserted in the hole.
- The coin slides down a path by gravity past a magnet assembly which has been adjusted to allow the correct size coin to pass.
- Smaller coins are sent or "shunted" to a different path and fall out through a space provided on the far left side (facing the escalator front).
- The magnet also causes ferrous slugs to be "shunted" down the different path.
- The correct coin however, passes the magnet, continues on the correct path and lands directly in front of the finger of the coin detector lever (P figure 1).
- The coin is prevented from continuing across the escalator by the first "tooth" of the coin holding bar (E).
- A small cut in the face plate directly in front of the coin detector finger also acts to reject smaller coins. They are pushed out thru the front by the finger and slide down the slug chute cover assembly (AA).
- If when the coin detector lever is moved forward by the coin detector operating lever the finger feels a coin, and if the length of the finger is adjusted correctly, the mechanism will be allowed to operate.

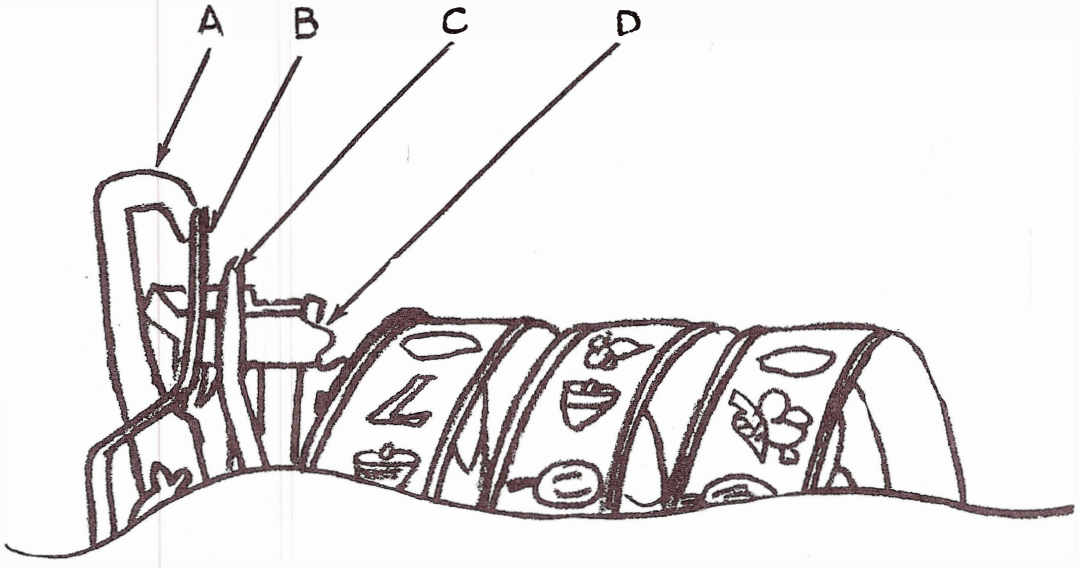

Figure 3

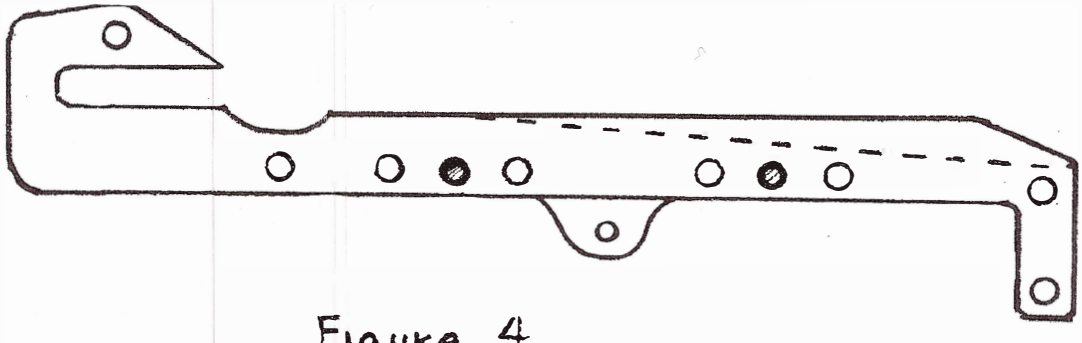

Figure 4

If the machine is not used extensively twice a year is suggested.

The escalator may be cleaned by washing with a brush using trichloraethylene or a similar solvent. It may then be brushed with a degreasing detergent and washed off with very hot water. The escalator should be dried with forced air or freon TF spray and lubricated.

LUBRICATION:

The entire rear of the escalator may be sprayed with a good machine oil such as 3 in 1 spray, or a drop of oil placed on every moving joint. Each moving part should then be moved to insure free movement. A slight application of petroleum jelly or lubriplate may be applied between the coin advance bar (D) and the body of the escalator. The coin track should be kept free of lubricant as it can cause "hanging".

ALL SLIDING OR PIVOTING PARTS MUST BE WORKING FREELY

MAGNET ADJUSTMENT:

The magnet is factory adjusted however, should it ever be necessary to replace or adjust the magnet, first move it over to the right just far enough to block the passage of a coin. Fasten it loosely in place. While the coin is still touching the Magnet, move the Magnet slowly to the left until the coin passes through with ease. Tighten the screw which holds the Magnet in place. Check your adjustment by playing a steel slug to see if it is drawn to the return track.

TROUBLESHOOTING ESCALATOR PROBLEMS

Troubleshooting the escalator is divided into two parts. The first part establishes the escalator to be operative, or inoperative, separately from the mechanism. The second part describes problems that may occur when the escalator is activated by the mechanism.

CHECKOUT OF THE ESCALATOR WITHOUT THE MECHANISM

- Remove the mechanism from the cabinet.
- While observing the escalator, deposit a coin and see if it lands just in front of the detector bar finger.

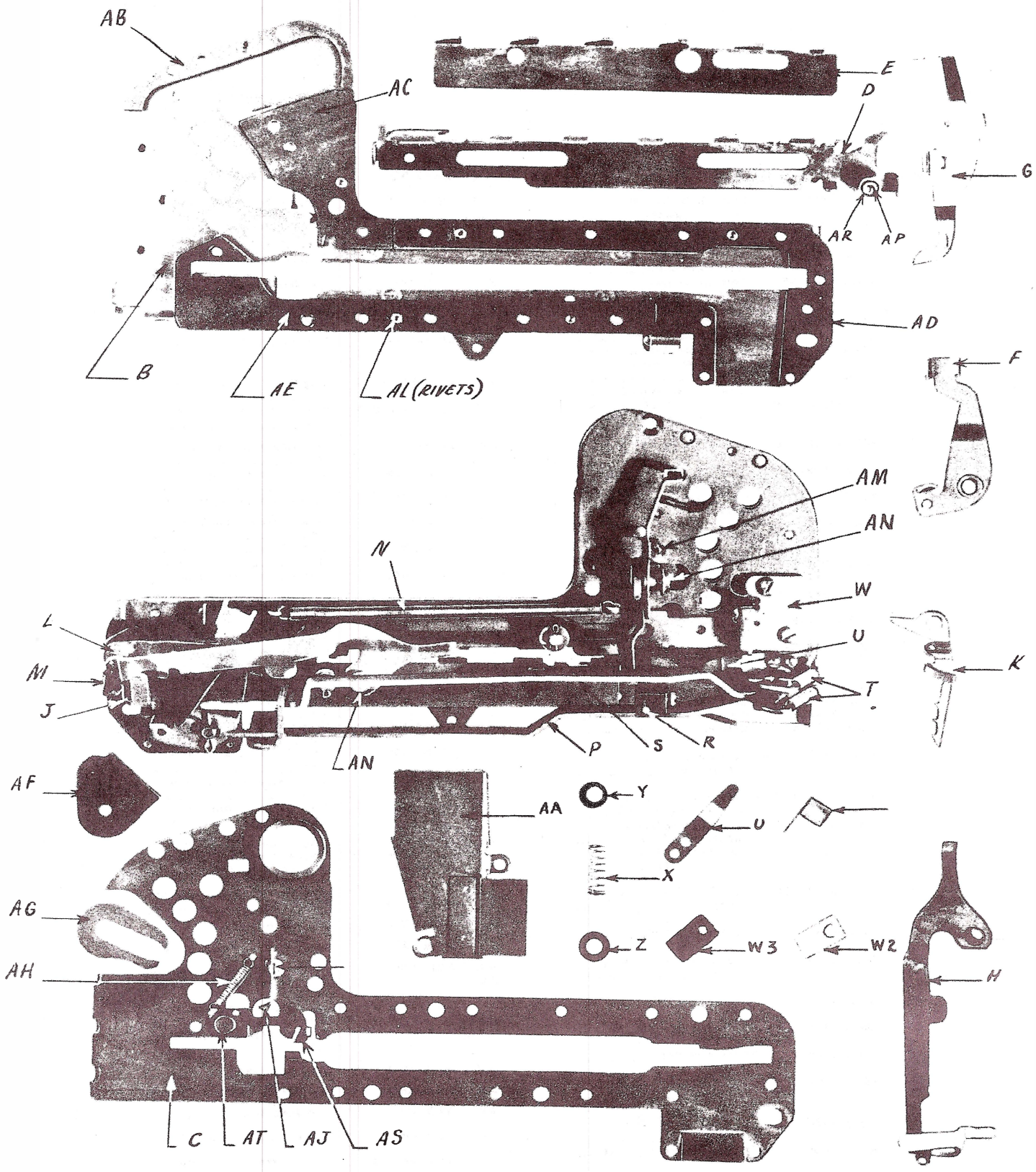
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Figure 1

Establish this operation in your mind. Observe each function as it occurs and establish the function of each part. By now, you should understand the escalator.

Most problems occur when the escalator is interfaced with the mechanism. The following paragraphs establish problems that may occur when the escalator is worked with the mechanism.

TROUBLESHOOTING THE ESCALATOR COMBINED WITH THE MECHANISM

- Visually inspect the mechanism after insertion of the mechanism into the cabinet. Assure that:
  - The coin advance bar operating lever (A figure 3) is "Hooked" over the lip of the coin advance bar lever (F, Figure 1).
  - The coin detector lever, (P Figure 1) is not being pushed forward by the coin detector operating lever (C,Figure 3).
  - The coin detector operating lever (C Figure 3) is not rubbing against the coin detector lever (P,figure 1) end guide.
  - The check detector operating arm (B, Figure 3) is not pushing against the check detector lever (S, Figure 1)
- The next step requires activation of the mechanism however, a technique to stop the timing cycle will be applied to slow down the cycle. This will facilitate observation of the sequence of events.
  - Place a screwdriver handle, or similar item next to the clock fan to stop its rotation.
  - Insert a coin in the escalator
  - From the rear, observe that the coin lands directly in front of the coin detector finger.

. Did the coin advance bar locking lever lock the coin advance bar into the left position?

. If the answers to the above questions was yes, continue on to the following steps. If the answer was no, go back and review the sequence of operation to determine where the problem may lay.

. Remove the screwdriver handle from the clock fan and use a finger to reduce the speed of the clock. As the mechanism cycle continues, observe the following:

  . The coin advance bar operating lever strikes the pertruding bar of the coin bar release lever (H. Fig 1) and moves it up.

  . The hook next pushes up on the pertruding bar of the coin advance bar locking lever releasing the coin advance bar.

  . The coin advance bar slides or snaps back to the right hand position.

  . With the hook completely returned to its upper position (upon completion of the mechanism cycle) the coin detector bar and check detector lever are fully against their back stop.

If all the above actions occur, the escalator is working properly. However, if the action does not seem proper, repeat the cycle as outlined above and observe the following:

.As the coin advance bar operating lever rises, observe if there is resistance caused by rubbing against the inside handle lever if so, this must be resolved.

.The operating parts on the side of the mechanism should be lubricated. If lubrication has just been accomplished and the machine has been out of use for a prolonged period of time, the lubrication must be "worked in" by repeated use.

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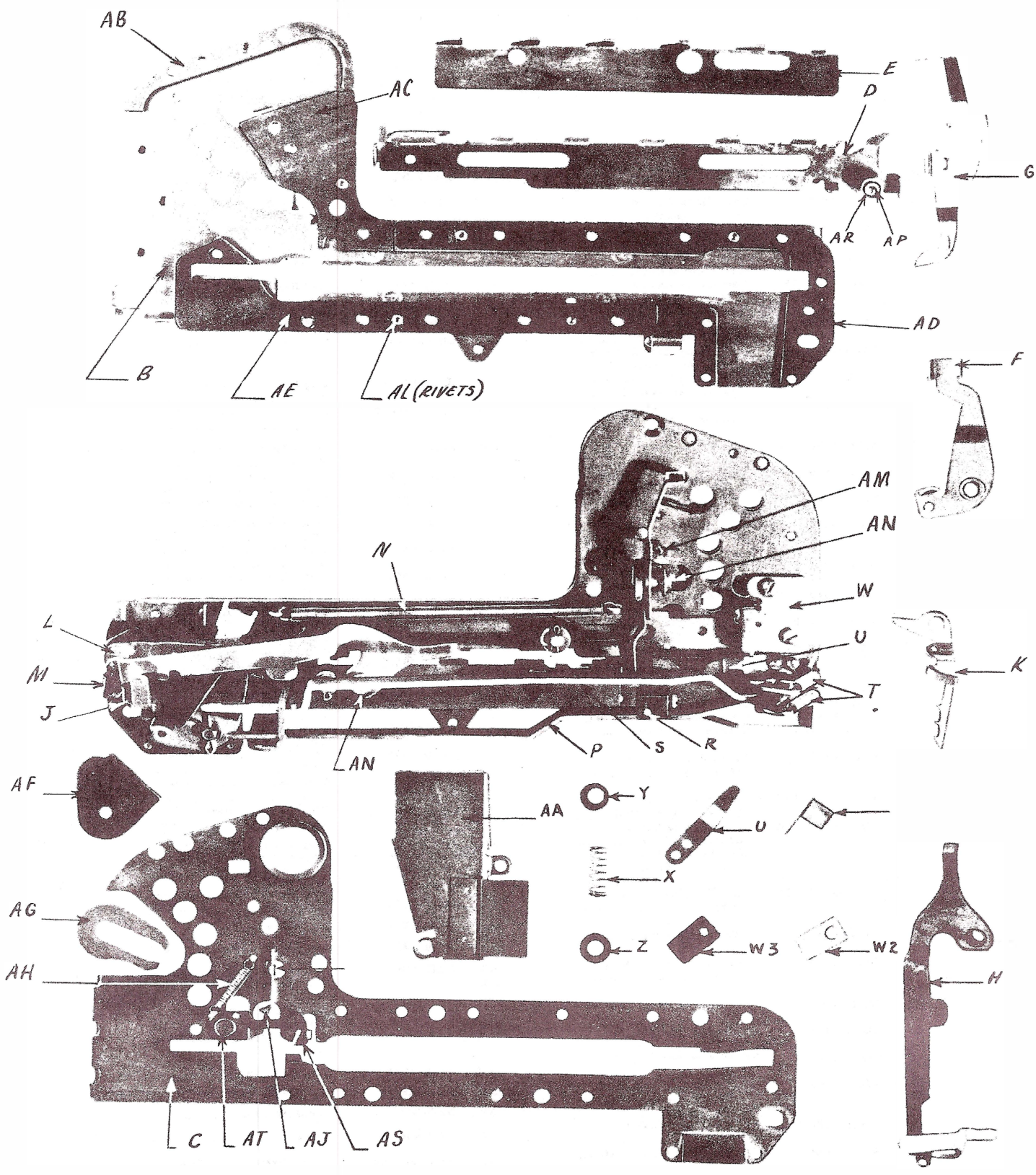
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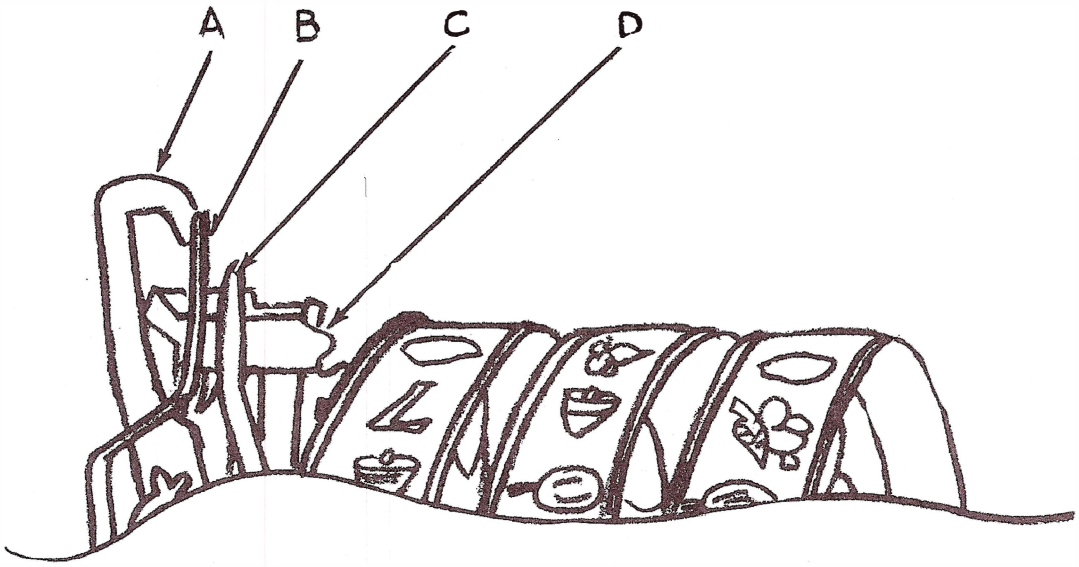
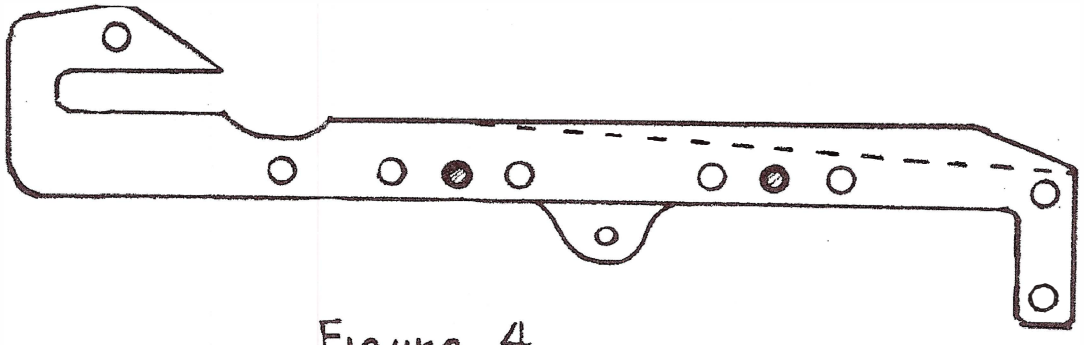


Figure 3



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