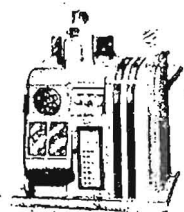


Columbia BELLS



INSTRUCTIONS

Hail Columbia Bells—again a leader, the new Twin Jackpot Bell!

This new improved model in dazzling, durable Hammerloid finish is ready now for your choicest locations.

Columbia actually makes more money than many larger machines—yet it costs you much less to own. No wonder more and more operators are changing to Columbia Twin Jackpot Bells.

OPERATOR'S PRICE

\$145⁰⁰ F O B
CHICAGO, ILL.

All orders must be accompanied by one-half deposit,
postal money order or certified check, balance C.O.D.

GROETCHEN TOOL & MFG. CORP.
126 N. UNION AVENUE, CHICAGO 6, ILLINOIS
U. S. A.

HOW TO REMOVE MECHANISM FROM CABINET

1. Remove Back door.
2. Loosen wing nuts on inside of wood cabinet walls, pull both levers outward and lift top straight off.
3. Disengage spring which operates jackpot loading channel from hook A-288 on escalator side arm.
4. Insert screw driver under flat handle pin spring A-290 and pull off handle through side of wood cabinet.
5. Unscrew large thumb screw in base of mechanism.
6. Grip main cross cam A-212 and lift out mechanism. To replace mechanism in cabinet reverse above procedure.

HOW TO LOAD MACHINE FOR PLAY

It is not necessary to remove mechanism from cabinet to load machine. Loosen knurled nut A-160C and remove coin magazine cover A-160B. Start playing machine by inserting coins into the coin receiver body A-119 until coins start transferring from coin escalator body A-112 into the coin magazine. Fill up the coin magazine by hand with 40 or 50 coins starting at transfer gate A-159. Do not skip any compartments or put more than one coin into each compartment. Replace magazine cover and tighten knurled nut.

(Do not fail to retrieve any coin which may have accidentally fallen into mechanism. A loose

coin in the mechanism will work its way into some moving part and cause a jam.)

Insert coins into jackpot loading channel A-277 and move this channel from side to side until both jackpots are evenly filled. (The capacity of the jackpots is adjustable by turning jackpot capacity adjusting screw A-243. Turn clockwise to decrease capacity and counter-clockwise to increase capacity.)

HOW TO EMPTY COINS FROM MACHINE

1. Play machine without inserting coins by holding down lever A-148 while pulling down the handle. Repeat this operation until all coins in the escalator body A-112 have transferred into the coin magazine.
2. Play machine again without coin and as handle is pulled down, hold clock fan which will prevent machine from completing its play and permit you to line up the three bars on the reels. After bars are lined up, release the clock fan and the jackpot payout will be effected. Repeat this operation three or four times until machine is empty.

PAYOUTS

Columbia pays out first the coins which have transferred last from the escalator body A-112 into the coin magazine. Whenever a winning combination lines up on the reels, the coin magazine moves a corresponding number of spaces to the left and the correct number of coins, whichever the payout calls for, are ejected into the payout chute.

When a payout goes into effect three holes,

one in each of the three star wheels are in line. The payout plunger arm A-85 will protrude through these holes. Thus the entire cross slide assembly will move far enough to the left to permit the payout dog A-72 to fall into a tooth on the underside of the coin magazine and move the magazine a corresponding number of spaces to the left, one coin being ejected from each magazine compartment. The number of spaces that the magazine moves is controlled by the payout plunger arm A-85 striking one of the six stops on the payout gauge A-B-401. Whichever stop on the payout gauge that the plunger arm is guided into is determined by what combination is lined up on the reels.

With a winning combination which calls for a three coin pay lined up, the plunger arm will be guided into the top stop on the payout gauge at which point the coin magazine will have moved three spaces to the left ejecting three coins. On a five coin payout the plunger arm will strike the second stop from the top, the coin magazine moving five spaces to the left, etc. The remaining stops are for the ten, fourteen, eighteen and jackpot payouts.

FAILURE OF MACHINE TO PAYOUT CORRECTLY

1. Check cross slide assembly for sluggishness. It is necessary for the cross slide assembly to move freely back and forth on shaft to insure the correct payout. If found to be sluggish, examine the gear teeth of the payout gear segment A-71 for particles of dirt which may become lodged in gears. Lubricate shaft with a fine oil.

2. Check payout plunger arm A-85. Run in the various payouts and watch the plunger arm protrude through the holes in the star wheels. If the plunger arm binds in the holes on any payout, it indicates that

the arm is bent and requires straightening.

3. Check star wheel guide A-90. Same procedure as in checking payout plunger arm.

4. Check for empty magazine compartments or coins doubling up in magazine compartment. (This may indicate that the forward motion of coin magazine is out of adjustment.)

5. Check reels for alignment. It is advisable to see that the reels are securely fastened to the corresponding stars to prevent shifting which would create an obstruction for the payout plunger arm A-85 and the star wheel guide A-90.

ADJUSTMENT FOR CONTROLLING THE FORWARD MOVEMENT OF COIN MAGAZINE

It is necessary that coins should transfer from escalator body A-112 into the coin magazine without obstruction. Coins will first drop from escalator onto a temporary shelf A-131 in the transfer chute. Then coin magazine will move one space to the right (looking from front of machine) and the coin will continue to drop from the withdrawing shelf A-131 into an empty compartment of the magazine directly below. Failure to have an empty compartment for the coin to drop into will cause the coins to double up which could result in an incorrect payout or jam the machine on the following play and indicates that the forward motion of the coin magazine is in need of adjustment. This adjustment is made as follows:

1. Loosen trip arm bracket bolt A-88-A.
2. Loosen two screws which hold A-99-A vertical arm adjusting plate.

3. Move A-99-A plate up to increase amount of forward motion.
4. Move A-99-A plate down to decrease amount of forward motion.
5. After moving A-99-A plate as desired, tighten screws and bolt A-88-A.
6. Check magazine for bent partition walls and if any are discovered, straighten them so as to have evenly spaced compartments.

HOW TO RELEASE MACHINE IF A JAM OCCURS AS
HANDLE IS BEING PULLED

1. Remove mechanism from cabinet and hook handle on mechanism.
2. Pull handle as if playing machine, putting a slight pressure on handle. This action will partially release the main ratchet dog A-55 from its hold in teeth of main cam A-60.
3. Hold this position long enough to push ratchet dog forward and completely clear of cam teeth using finger or screw driver and while holding ratchet dog forward, release your hold on handle and machine will recede to its normal position at which point you may release your hold on the ratchet dog.

PARTS TO CHECK IF MACHINE JAMS AS HANDLE
IS BEING PULLED

1. Check lift dog A-92. If this lift dog sticks after a play, the payout dog lift arm A-91 will fail to operate on the following play and will cause a

jam if a payout occurred on the previous play. Oil lift dog occasionally to prevent it from sticking.

2. Check the reel stop lift dog A-261. The reel stop lift dog is attached to the lower left side of the reel stop lever lift A-269 (when looking from rear of machine). If this dog gets sluggish and fails to snap back in place after a play, the reel stop levers A-20 will fail to raise on the next play, resulting in a jam. Oil dog occasionally to prevent sticking.
3. Check coin head for bent or defective coin which may have been inserted into coin receiver body A-119 and is causing a jam inside the coin escalator gate A-137.
4. Check mechanism in general for any loose coin which may have fallen and become lodged in some part, causing a jam.

FAILURE OF THE MACHINE TO COMPLETE ITS PLAY AFTER
THE NO. 1 AND NO. 2 REELS HAVE STOPPED, LEAVING
THE NO. 3 REEL SPINNING FREE

(A) HOW TO RELEASE MACHINE

1. When the machine jams in this position the trip arm, which rides on the trip arm bracket A-88, is in contact with the stud on the A-204 cam, push the trip arm forward and it will snap off of the stud and machine will recede to its normal position.
2. Remove magazine cover A-610-B and the transfer chute cover A-159 which is held in place by A-158 spring. Clean out any coins which may have doubled up in this transfer chute and replace covers.

3. Start to play machine pulling handle down slowly until you hear a loud click at which point the handle will be about from 1/2 to 3/4 of the way down. Hold machine in this position and pull out on the coin magazine lock arm A-102 which will release the coin magazine. Turn coin magazine to the left until a dozen or so coins have been ejected. Loosen your hold on the A-102 lock arm and pull handle all the way down setting the machine in play.

By this operation you are releasing any coin which may have failed to roll down the A-287 coin chute and jammed in the back of the coin magazine under the A-115 escalator base casting.

(B) CAUSES AND PARTS TO CHECK

1. Coins doubling up in transfer chute A-159.
2. Check forward motion of coin magazine.
3. Look for bent magazine partition walls and bent or sticking coins.
4. A loose coin lodged in some moving part.
5. Dirt being lodged in the clock gears.

HOW TO REMOVE REEL ASSEMBLY FROM MECHANISM

To remove Reels proceed as follows:

1. Remove coin spout cover and bracket A-B-406 which is fastened to left side wall by two screws.
2. Hold clock fan and play machine. Fasten clock fan

to prevent machine from completing its play. It is necessary to keep machine in this position so the star reels will be free from the payout plunger arm A-85 and the reel stop levers A-20, in order to remove reels without obstructions.

3. Loosen reel shaft bearing nut A-9 and screw out the bearing.
4. Move reel toward side where you have removed bearing and the opposite side of reel shaft will slip out of opposite bearing.

To replace reels, reverse the above procedure.

HOW TO REMOVE MAIN CAM A-60

1. Unhook handle return spring A-307.
2. Remove lock plate which locks the handle shaft on opposite side of machine from the main cam. (The lock plate is fastened by one screw.)
3. Pull handle shaft assembly completely out of machine which will release the main cam.

HOW TO REMOVE COIN ESCALATOR BODY A-112

1. Unhook safety spring which connects A-177 coin chute lock arm to the safety trip A-196 on left side of mechanism.
2. Remove pin that holds arms A-176 and A-177 and remove arms.

3. Remove coin guard leaf A-111 and anti tilt unit A-382.
4. Remove coin escalator cover A-118 (fastened by 1 nut and 2 screws).
5. Remove A-119 coin receiver body (fastened by two screws) and pull off escalator body.

To replace escalator body, reverse above procedure. When replacing A-176 coin lock arm, make sure that the rounded corner of the coin gauge pin A-284 is to the right (looking from front of machine). Failure to take this precaution may result in the machine giving free plays.

CARE OF THE COIN ESCALATOR HEAD

After a considerable amount of play there will be dirt and lint from the coins packed in the coin head which will require an occasional cleaning. It is necessary to keep this coin head reasonably clean to insure the correct acceptance of coins and to have a more efficient working machine.

To disassemble coin head for cleaning see instructions on how to remove coin escalator body A-112.

CARE OF CLOCK

The indication of a worn clock is too sudden a stop of the reels and mechanism in general. This is most noticeable on the reel assembly as they will make only a few turns before the A-20 stop levers

strike. If such a condition goes unattended, the mechanism will eventually recede so fast that numerous mechanical difficulties will develop.

It is advisable to remove the clock occasionally to clean and check the gears for worn teeth.

To remove clock, extract cotter pin which secures clock drive arm to clock and remove three screws which fasten clock to base of mechanism.

JACKPOT

1. The jackpot plunger which protrudes through the front casting just to the right of the jackpot is a safety feature which enables the player or location to dump the jackpot, providing the player hits a jackpot and for some reason the jackpot lock plate A-238 became sluggish and failed to open mechanically. It is impossible to trip jackpot with the plunger unless there is one effected on the mechanism.

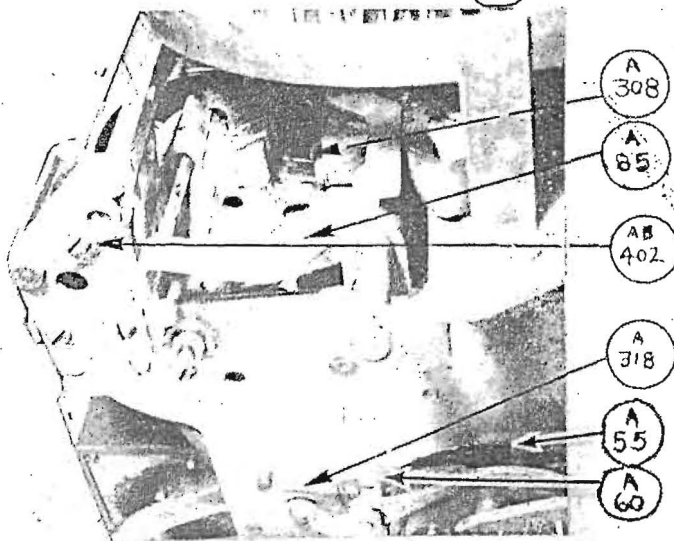
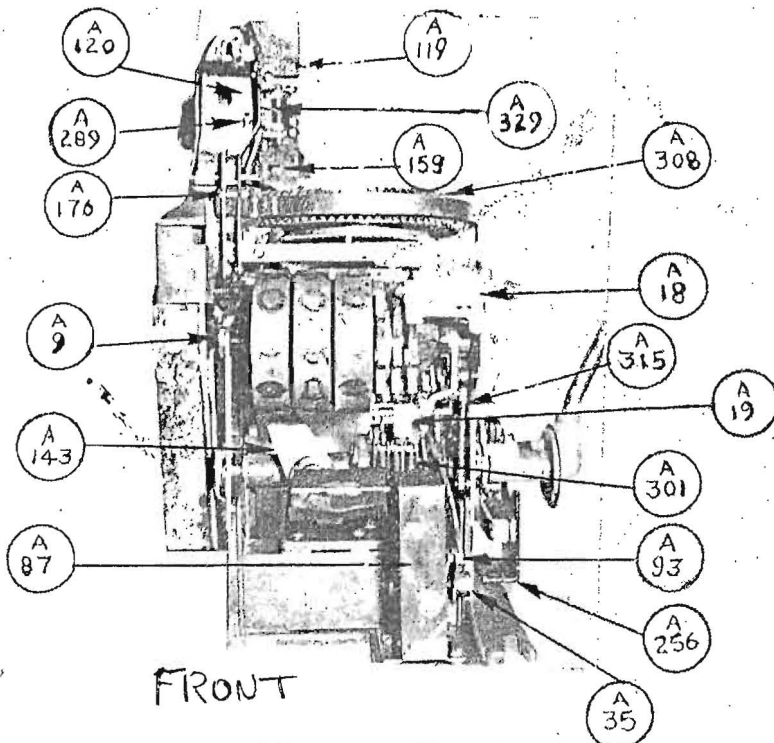
2. Jackpot ratchet lock A-278 enables the service man to lock the jackpot before removing the mechanism. This will prevent the jackpot from dropping the coins.

After inserting mechanism in cabinet push this jackpot ratchet lock down. Failure to do so will result in the jackpot not opening.

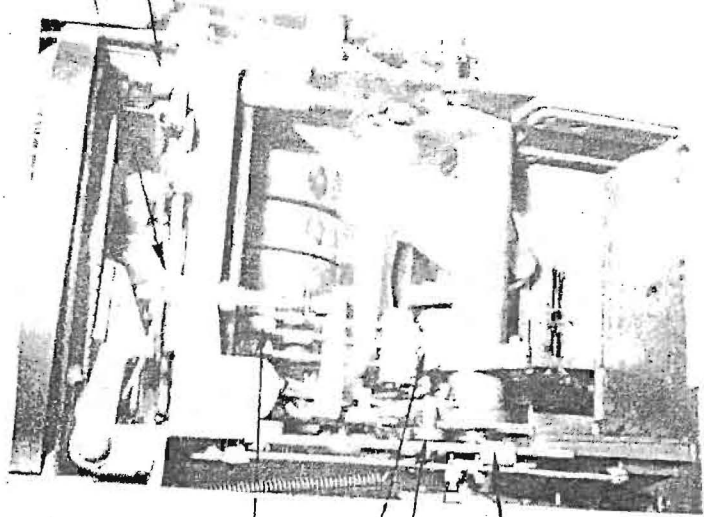
3. Failure of either jackpot door A-232 to close is caused by coins being wedged in back of the door.

IMPORTANT DON'TS

1. Don't forget to oil machine occasionally with a fine oil to prevent freely moving parts from getting sluggish.
2. Don't smear a quantity of grease in clock gears and pinions which will catch dirt and cause machine to stick. Use fine oil.
3. Don't forget that this machine is not a 60 ton tank and that dropping machine can put some part out of adjustment causing the machine to work ineffectively.
4. Don't let any monkey-jack that comes along tamper with your machine as he will probably do more harm than good.
5. Don't forget to replace cotter pins and tighten screws after removing to service some part.
6. Don't forget to retrieve any loose coin which may have accidentally fallen into the mechanism to prevent it from causing a jam.

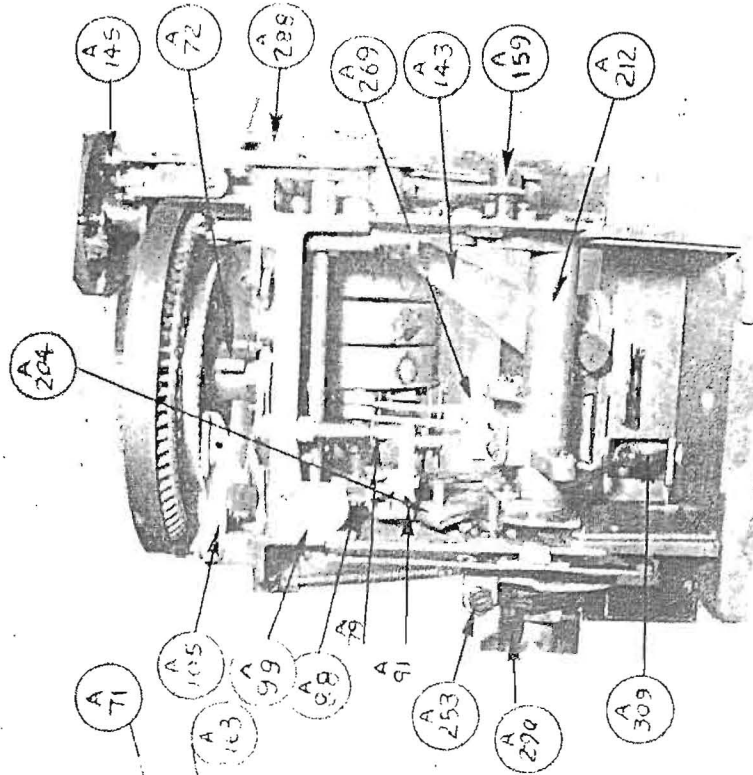


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RIGHT SIDE



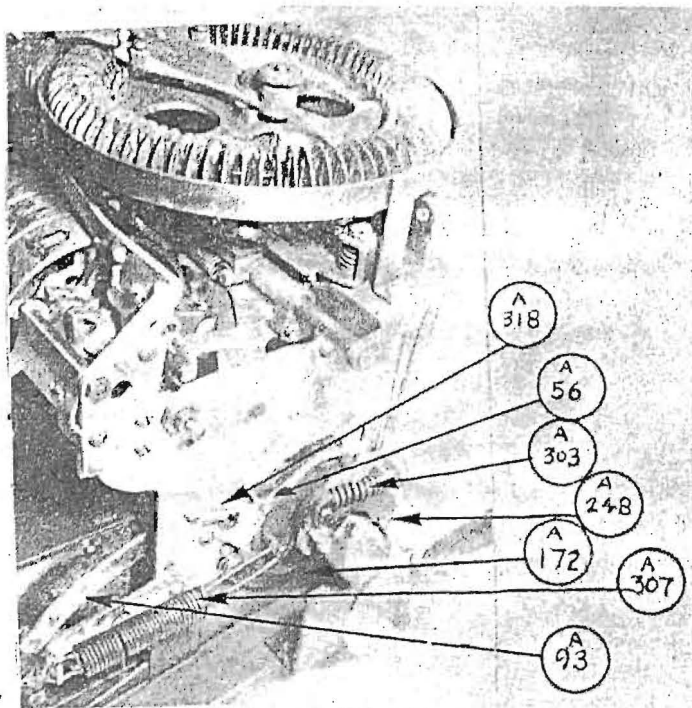
- A 20
- A 270
- A 23
- A 148

BACK

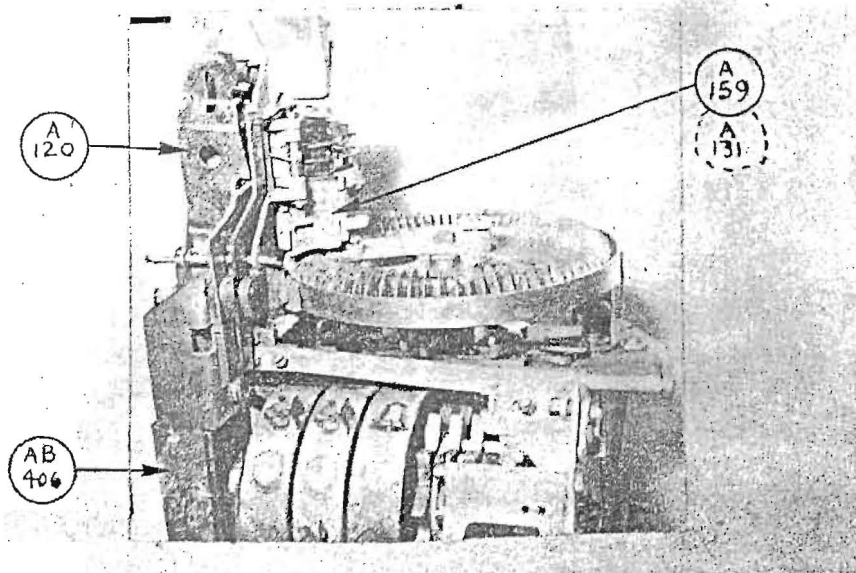


- A 145
- A 72
- A 289
- A 269
- A 143
- A 159
- A 212
- A 204
- A 105
- A 99
- A 98
- A 91
- A 253
- A 290
- A 309
- A 103
- A 71

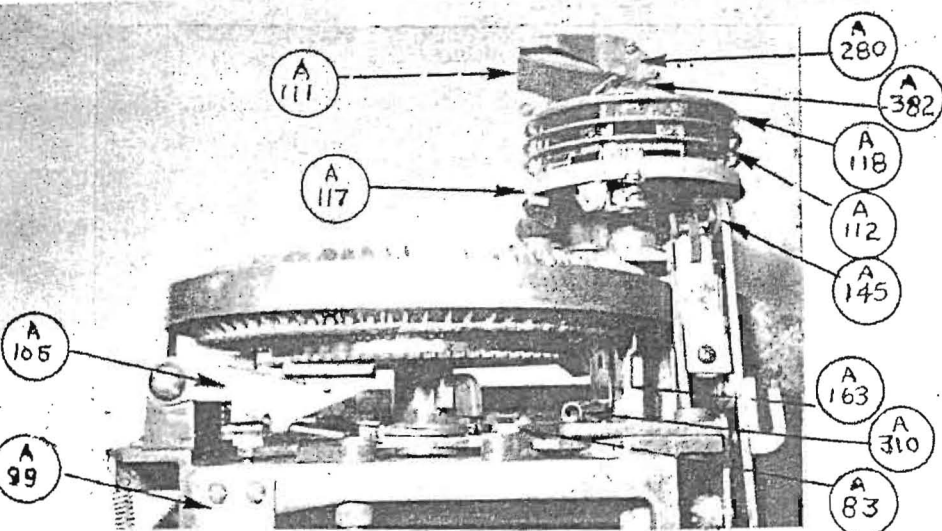
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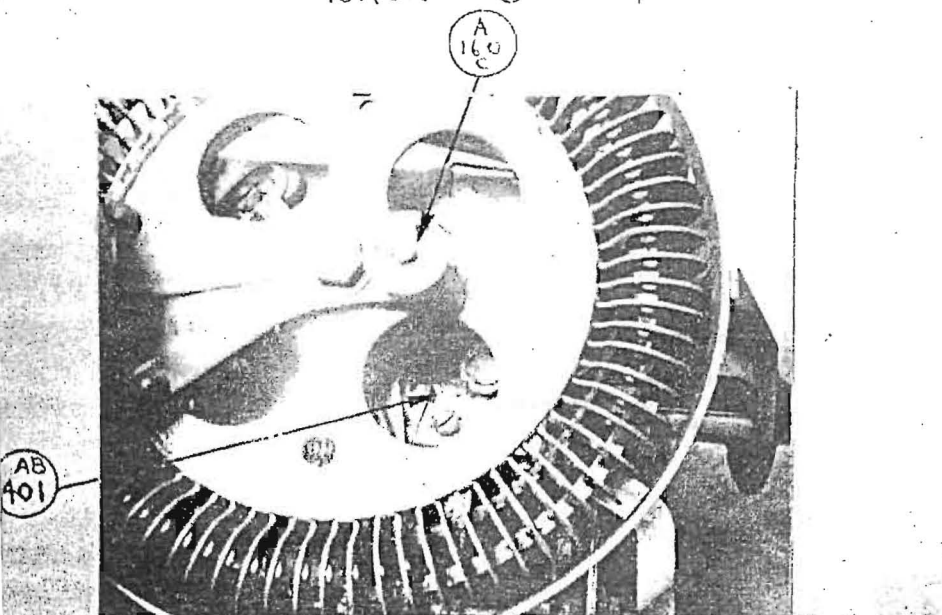
RIGHT SIDE



IS FRONT SIDE



BACK SIDE



PARTS LIST

A-9	Reel Shaft Bearing Nut.	A-160-B	Coin Magazine Cover.
A-19	Reel Spinner Finger, 10-20 Stop.	A-160-C	Knurled Nut.
A-20	Reel Stop Arm.	A-163	Coin Kick.
A-23	Reel Spinner Arm Push Rod.	A-173	Coin Shutter on Escalator ^h Side Arm.
A-35	Clock Arm.	A-176	Coin Lock Arm.
A-56	Safety Arm.	A-177	Coin Chute Lock Arm.
A-56-B	Main Ratchet Dog Bracket.	A-191	Jack-pot Lock Bar.
A-60	Main Cam.	A-194	Jack-pot Dog Lift.
A-71	Pay-out Gear Segment.	A-196	Safety Trip.
A-72	Coin Pay-out Dog.	A-204	Cam on Part A-212.
A-79	Dog Lift Stem.	A-212	Main Cross Cam Casting.
A-83	Pay-out Dog Gauge.	A-248	Handle Safety Dog.
A-85	Pay-out Plunger.	A-255	Handle Safety Dog Screw.
A-87	Clock Cover.	A-256	Handle Stop Angle Bracket
A-88	Trip Arm Bracket.	A-263	Ball End Toggle.
A-88-A	Trip Arm Bracket Bolt.	A-267	Toggle Link Holder.
A-91	Pay-out Dog Lift Arm.	A-269	Reel Stop Lever Lift.
A-92	Lift Dog.	A-270-B	Reel Stop Cam Plate.
A-93	Drive Arm for Clock Shaft.	A-280	Coin Gauge.
A-99	Coin Magazine Vertical Arm Plate.	A-284	Coin Gauge Pin.
A-99-A	Magazine Vertical Arm Adjusting Plate.	A-287	Coin Chute.
A-102	Coin Magazine Lock Arm.	A-288	Angle Hook on Side Arm.
A-105	Coin Magazine Brake.	A-290	Handle Pin Spring.
A-111	Coin Guard Leaf.	A-301	Reel Stop Spring.
A-112	Coin Escalator Body.	A-303	Handle Safety Spring.
A-117	Coin Escalator Coin Race.	A-307	Handle Return Spring.
A-118	Coin Escalator Cover.	A-308	Cross Slide Spring.
A-119	Coin Receiver Body.	A-309	Main Cam Spring.
A-120	Coin Receiver Guard.	A-310	Cross Bar Spring.
A-125	Coin Escalator Dog.	A-315	Reel Spinner Spring.
A-131	Gooseneck Coin Gate.	A-318	Main Ratchet Dog Spring.
A-132	Side Arm. Bottom of Main Cam.	A-320	Coin Unlock Spring.
A-137	Coin Escalator Gate.	A-329	Coin Gate Spring.
A-143	Cross Slide Arm.	A-382	Anti Tilt Unit.
A-145	Escalator Side Arm.	A-B-401	Pay-out Gauge.
A-148	Cross Shaft Connecting Rod.	A-B-406	Coin Spout Cover.
A-158	Magazine Chute Cover.Spring.	A-B-410	Angle Cover.
A-159	Magazine Chute Cover.	T-O-200	Extension Spring.

