

THE BALLARD SEED & PACKETING MACHINE CO.

1.

Directions for Operating Bag Filling Machine

60's

ENVELOPE BOX ADJUSTMENT

Place spotter in position (see later directions).

Place a few bags in the Envelope Box with Follower. Adjust sides of Envelope Box vertically so spotter pins touch bag about $\frac{1}{4}$ " below lip of bag. If the spotter strikes too low the glue will squeeze out from under flap and gum up brass rolls and Folding Blade; if too high the spreaders and Flap Holder will become gummed.

Adjust width of Envelope Box laterally so the sides will allow the bags to move forward freely, but not push by the stop plate. (See #1 in Photo A). Adjust height of Envelope Box by loosening knurled screws at bottom of standards. (See #5 in Photo A). The top of Envelope Box is adjusted by the cross tie over front end of Envelope Box, (See #2 in Photo A) and should be so regulated that the bags will be a little tighter at top than at bottom.

On either side of front end of Envelope Box are adjustable stop plates. (See #4 in Photo A). By the proper adjustment of these plates the delivery of bags can be regulated.

ENVELOPE BOX LATERAL MOVEMENT (See #3 in Photo A)

The entire front of Envelope Box can be moved laterally by the adjusting screw, the hexagon head of which is located near the top of the front foot which separates brass rolls.

FLAP HOLDER ADJUSTMENT

The Flap Holder should be so adjusted as to bring the lower end slightly above the lip of bag, allowing the bag to open to receive the opener and spreaders, yet holding flap of bag back. When tunnel arm is at lower end of movement, Flap Holder should lie flat against opener and should take this position with but little springing movement. Fine adjustment is had by knurled head screw at top of Flap Holder Bracket, more adjustment is obtained by loosening set screw at other end of bracket.

SETTING BAG CARRYING ARM

Turn machine by hand and note just when Bag Carrying Arm comes to a stop temporarily in downward movement, and Folding Blade approaches Rubber Roll. In this position a bag placed in Fingers of Bag Carrying Arm should be at right height for Folding Blade to make fold at proper place. (See #1 in Photo C). If this is not the case, loosen set screw, holding Bag Carrying Arm on Stud, and swing arm into correct position. This is a precise, important adjustment.

TUNNEL ARM ADJUSTMENT

Loosen screws binding shank of Tunnel Arm to Stud. (See #1 in Photo D) and swing arm to an approximately horizontal position at the lowest limit of cam movement. In this position the Tunnel should allow measure to enter it without hitting. The upward movement of the Tunnel Arm is regulated by moving block in Tunnel Arm Lever or Slide. (See #2 in Photo D).

ADJUSTMENT OF SPREADERS

Vertical adjustments can be had by means of small set screws near upper end of Spreader. The opening of Spreaders is governed by length of Spreader Plunger. Loosen nut (See #4 in Photo B) and turn plunger by means of a nut (See #3 in Photo B) until Spreaders have sufficient spread, when open, to hold bag easily until Fingers are ready to grasp it.

The Opener should strike in center of Lip Holder, and hold bag opposite the center of Envelope Box. To swing Spreaders to a central position hold Spreader Shanks together. Loosen one of the set screws, (See #6 in Photo A) and the Spreaders can then be moved to position desired. Adjustment of Spreader Shanks toward or away from the Tunnel can be had by these same screws.

OPENER ADJUSTMENT (See Photo B)

The Opener can be moved toward or away from the Envelope Box and the Bags, by loosening the clamp screw (See #2 in Photo B) which holds the Tunnel to the Tunnel Block. The Opener should be so adjusted that nose shall enter bag without straining it. It should also be equally spaced from side to side of bag. This last adjustment can be had by loosening two small screws (See #5 in Photo B) on side of Opener Block.

BAG CARRYING ARM FINGERS

Bag Carrying Arm Fingers should open sufficiently to easily grasp bag. The opening of these Fingers is regulated by knurled nut and check nut on Finger Shaft Connection, which is located just under, and parallel with the Bag Carrying Arm. (See #7 in Photo A). Grasp of Fingers is regulated by tension of coiled spring on Bag Carrying Arm. By means of the set screws on lower ends of Fingers, they may be set approximately before other adjustment is made. Only one should be loosened at a time. The length of Bag Carrying Arm is varied by loosening two screws near Head of Arm, and should be so adjusted as to bring Arm up under bag without hitting. Changing the length of Bag Carrying Arm will require a readjustment of knurled nut.

FOLDING BLADE ADJUSTMENT

The Folding Blade should meet the rubber roll with a light pressure, only enough to hold bag while brass roll is folding flap, but not enough to dig into the rubber. This adjustment is obtained by clamp screw at upper end of Folding Blade Arm. (See #2 in Photo C). The Blade should meet rubber roll just below brass roll. This adjustment is obtained by means of knurled screw near lower end of Folding Blade Arm. The fold of bag may also be regulated by this adjustment. (See #3 in Photo C).

BAG CLAMP

The Bag Clamp, under Folding Blade is to flatten, and hold bag against Rubber Roll, while brass roll is sealing bag. It is held by set screw at upper end of Arm. (See #4 in Photo C). Enough pressure should be placed by Clamp on Rubber Roll to contract the spiral springs at either side, about one-sixteenth of an inch. By the knurled head screw at back of the Clamp, the contact of Clamp with Rubber Roll can be varied up or down. (See #5 in Photo C). The Clamp should meet Rubber Roll as near Folding Blade as possible without being pushed down by Folding Blade when Brass Roll is turning flap of bag.

IMPRINTER OR STAMP BRACKET (See #6 in Photo C)

The Stamp Bracket, located at end of stud holding Folding Blade should be adjusted vertically and horizontally so as to press against the bags near their lower end. It should press on bags only sufficient to straighten bags in Envelope Box, but not push them out of vertical position.

REGULATION OF THROW OR FORWARD MOVEMENT OF BRASS ROLLS

The distance Brass Rolls roll over flap of bag is governed by hexagon head screw, located

under Envelope Box, and to the rear of the Rubber Roll. (See #4 in Photo D). Turning screw to the right gives less roll or throw. Turning to the left gives more throw. When more or less throw is desired than can be obtained by this adjustment it is necessary to change screws at each end of Bag Slide Yoke, located directly under front end of Envelope Box. (See #7 in Photo C). When screw is in lower position more throw is obtained. The proper place for pawls to leave brass roll is directly over the spots of glue under flap of bag.

SPOTTER BRACKET ADJUSTMENT

Turn Drive Wheel until end of Spotter Bracket comes opposite notch in Gum Pot Arm. (See #5 in Photo D.) This is the proper position for insertion of spotter. Place Spotter in position and then place Gum Roll in Gum Pot. Now turn wheel of machine until Spotter Pins touch Gum Roll. They should just touch Roll without being forced back into Spotter. This result can be obtained by loosening clamp screw at back end of Spotter Bracket, and moving bracket forward or back until proper position is found. (See #6 in Photo B.) The Spotter Pins, in forward movement of Spotter, should touch bags lightly but surely.

GUM POT ADJUSTMENT

The Gum Pot has an adjustment forward or back, and it may be necessary to move this in connection with the adjustment of Spotter Arm Bracket to obtain the required results. The two screws at back of Gum Pot must be loosened to move it.

SPOTTER PINS

The Pins in Spotter should be as few as will properly gum flap of bag. They should be spaced equally the end pins not coming too near the sides of bag, as gum is liable to squeeze out.

FOLDING BLADE DOGS (See #8 in Photo C)

Run the machine by hand, stopping same while bag with gum upon it is in the Bag Carrying Arm Fingers, but just before Folding Blade touches bag. Now loosen screws in Dogs of Folding Blade, and move the Dogs so that they shall come BETWEEN spots of gum on bag. It is well to have one Dog strike bag just outside of each end spot of gum at corner of bag.

RUBBER SCRAPER (See #1 in Photo B.)

Place measure on end of Measure Arm Extension, then adjust Rubber Scraper so measure will pass easily under scraper at the same time scraping all surplus from Top of measure. Scraper should be raised for coarser seeds at least half the diameter of the seed, and an eighth of an inch or more for fine seeds, according to size.

GLUE POT

Fill Glue Pot with glue sufficient to let the under surface of Glue Roll come just below surface of Glue.

ROLLING BAGS

Bags should be formed by hand when placing them in Bag Box. They should be placed with lip side toward Spotter Bar. To do this hold a bunch of bags in left hand with lip side flat against palm and strike them gently with edge of right hand vertically to form a concave indentation. Then when placed in the Box the lip side will be slightly convex which allows opener easier access for opening.

INDENTING BAGS

When bags are filled so full, or with such bulky material that they do not fold smoothly, the Bag Carrying Indenting Arm is used.

Take off the Bag Carrying Arm and in its place on Fulcrum Stud put Bag Carrying Indenting Arm, sliding Cam on Fulcrum Stud at the same time. This arm should be set in same manner as plain Bag Carrying Arm, then while Arm is in position for folding bag the Cam should be rotated upon stud until the straight side of Cam is flush with lower circumference of Cam Roll.

The set screw in the end of Cam Roll Crank may be loosened and roll set to give more or less motion to Indenting Arm. A fine adjustment is also obtained by right and left nut at lower end of Bag Carrying Indenting Arm.

Adjustment of Front Indenting Finger is also had by means of small screws. (See #6 in Photo D.)

(Only enough indentation should be used to make the bag fold smoothly).

PAN (See Photo B)

The Pan, in Drum, has a sliding side by means of which the opening in bottom of Pan can be made central over measure, and thus direct the flow from buckets of Drum into Measure. This slide sometimes needs to be removed from Pan to prevent clogging of coarse seed. On back of Pan is a rubber apron to prevent seed from spilling out of drum.

CHUTE EXTENSION

At end of Chute is a sliding sleeve which may be raised or lowered to regulate the flow of seed into the Drum. For coarse material sleeve should be raised, and for fine, lowered.

ASSEMBLING PARTS

In assembling parts of machine for operation, place Pan in Drum, then while Tunnel Arm is raised attach Measure Arm Extension, and then insert Chute in Drum. Be sure all parts are securely fastened by binders before starting machine. An Apron is usually hung on Chute to direct any waste from back of Drum to Table of machine. A metal ring is fitted to front of Drum to prevent spillage.

CAMS (See Photo E)

The principal Cams which operate the machine are located on the Main Shaft and are designated by number as shown in the photograph. Should re-timing ever become necessary the following directions must be followed and in the order given. Number 4 Cam may have to be set twice because it may lose its position when #5 Cam is set since it is attached to it.

DIRECTIONS FOR SETTING CAMS (See Photo E)

All Timing is started by:-

#1 Cam Roll is positioned on the smaller projection of #1 Cam which is attached to flywheel.

#2 Cam is then set roughly by having set screw show at rear at right angle to main shaft. Then adjust fingers of Bag Carrier Arm so they just finish closing just before Arm starts downward motion.

#3 Cam should now be set roughly by having set screw in line with that of #2 Cam.

#4 Cam set screw (in #5 Cam) should be set roughly in line with #2 and #3 Cams. Then adjust #4 Cam so that spreaders just start to close just before grippers start to close.

#8 Cam should now be set so it starts Envelope Box to right (or back) just before Spreaders have reached their full spread.

#5 Cam starts Slide to left from far right position when #8 Cam Roll is in center of forward (or left) movement. The Folding Blade should just barely hit the rubber roll just before the brass roll is pushed forward to fold the bag.

#7 Cam should position the Measure in its forward motion about one inch from the Tunnel as bottom edge of Tunnel passes ahead of it. It will then reach its farthest point of throw when Tunnel is in its farthest point and motionless.

After timing of the cams is completed the final adjustment of the Geneva Gear must be made. Turn machine by hand until Bag Box has just reached its extreme left (or forward) position. Loosen Main Shaft Bevel Gear (See #6 in Photo E) and turn it until teeth of Geneva Gear are 90 degrees from vertical on left side. Then rotate machine by hand until one brass roll has been pushed down by underside of the two Base Feet. (See #7 in Photo D). Continue rotation until Base is again at extreme left. In this position top of Base Feet should just touch the brass roll above them without moving it.

If the feet lift the roll, loosen the set screws in the Bevel Gear again and turn gear slightly backward (toward you when standing in back of machine). If brass roll is too high turn gear forward (away from you).

When correct timing is obtained go over all set screws and tighten securely.

At assembly, Eccentric Sleeve in back of Meter is installed with thinnest edge DOWN. Turn clock wise to tighten gear against stop and counter-clockwise to loosen. Main shaft drive gear will also need adjustment to compensate for this take-up of slack.

With center punch or pin inserted in holes in rim of sleeve, turn sleeve to right or left until Geneva Gear fits closely, yet easily against the Geneva Gear Stop, on back end of Rubber Roll. Then tighten up the two set screws. Now try the Rubber Roll alone in its six different positions and see that it slides on easily over the Geneva Gear. Turn the machine by hand to be sure the Rubber Roll turns easily through all six positions.

SUGGESTIONS

All bearings are replaceable bronze Oilite bushings. Add oil sparingly.

Keep machine as clean as possible. It will repay you.

Keep material in Hopper as low as possible, and still fill the measure.

Keep all check nuts and set screws tightened.

Before making any change in adjustments be sure you have located the trouble.

If glue gets on Folding Blade:--

See if the Dogs are properly spaced.

If glue gets on Brass Roll:--

See if Spotter is placing glue on bag at proper place, or see if there is too much throw or movement to the Brass Rolls.

If Brass Rolls apparently get out of time:--

See if there is a ring of hardened glue sticking to the shaft, supporting pawls (which push Brass Rolls) which crowd the Rolls out of position. Also check again position of Base Feet.

If Brass Rolls fail to roll over on flap of bag:--

See if pawls drop behind rolls. If not, too much throw may be the cause, or springs over pawls may be worn out. It may be caused by not enough pressure of Folding Blade, or of Clamp upon Rubber Roll. It is sometimes caused by the ends of steel spindles inside the Brass Rolls becoming flattened and slipping instead of rolling.

If Rubber Roll fails to turn:--

See if bevel gear is slipping, or if Geneva Gear is slipping on its shaft, or Geneva Gear Stop may be slipping in end of Rubber Roll.

important check point

If Bag Carrying Arm does not grasp bags:—

See if fingers close properly. They are sometimes held open by a seed or other material getting caught between finger and head of Bag Carrying Arm.

See if both fingers close equally against head. Put a piece of rubber tubing on each end of cross piece of Bag Carrying Arm Head.

If bags come out of Envelope Box crooked:—

See if stop plates on one side or other of Envelope Box are not projecting too far, or see if Spreaders hold bag centrally in front of Envelope Box. This can be attained by adjusting Spreader sideways.

Tension of both fingers of the Bag Carrier Arm must be the same or bags will fold crookedly. Also, be sure the bottom edge of bag is seated against the fins of both fingers, when fingers have closed.

Make sure Bag Carrier Arm swings completely free through its arc of operation. Make especially sure it does not hit the Geneva Gear Guard.

If bags tear on edge:—

It is usually caused by too much tension on Spreaders (Spreaders open too far). Stop plates project too far. Envelope Box may hold bags too tightly. Tunnel Arm may be set too low down.

If bags tear on flap:—

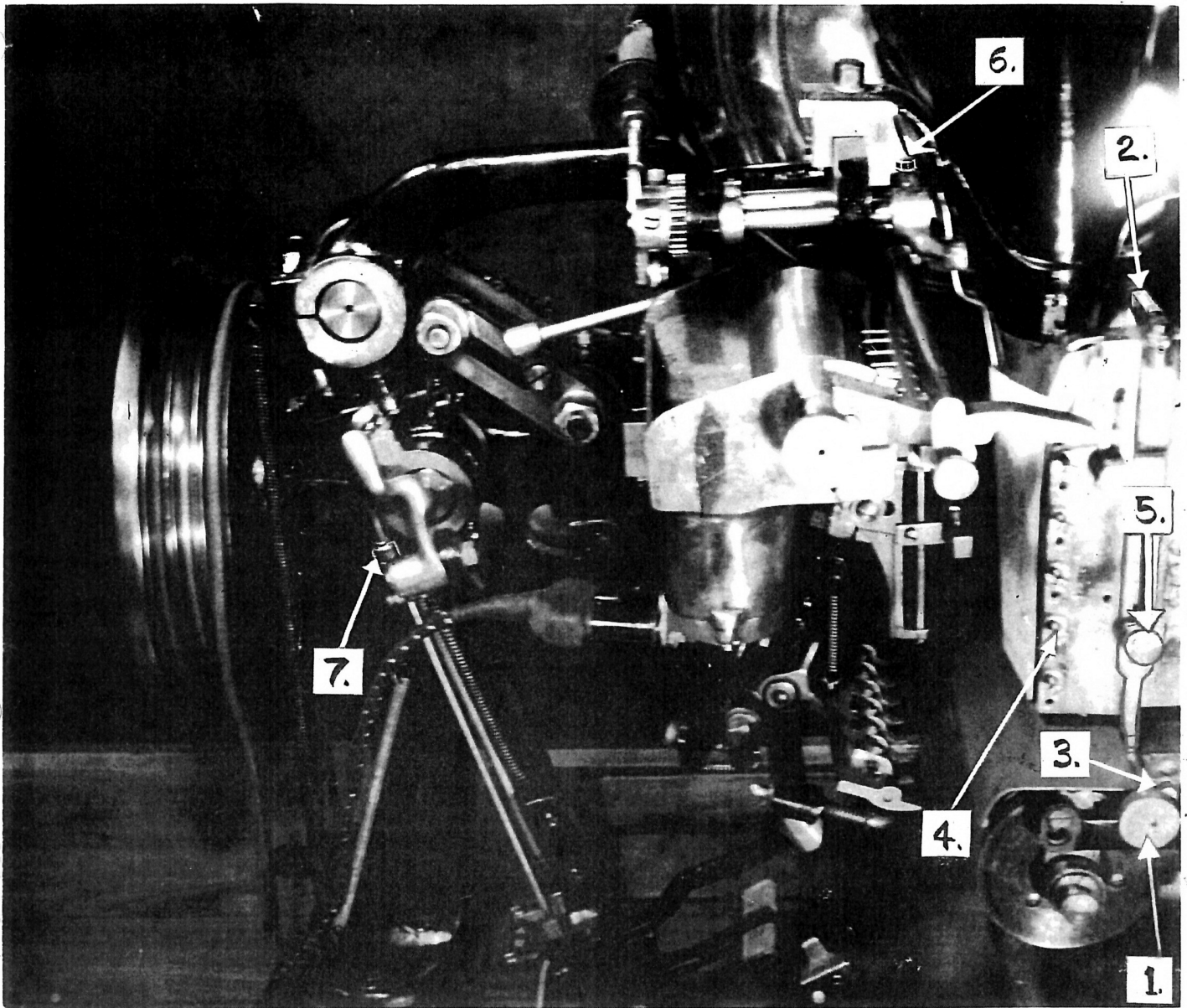
Flap Holder needs bending to lie closer to Opener.

Flap Holder may not come in middle of bag opening.

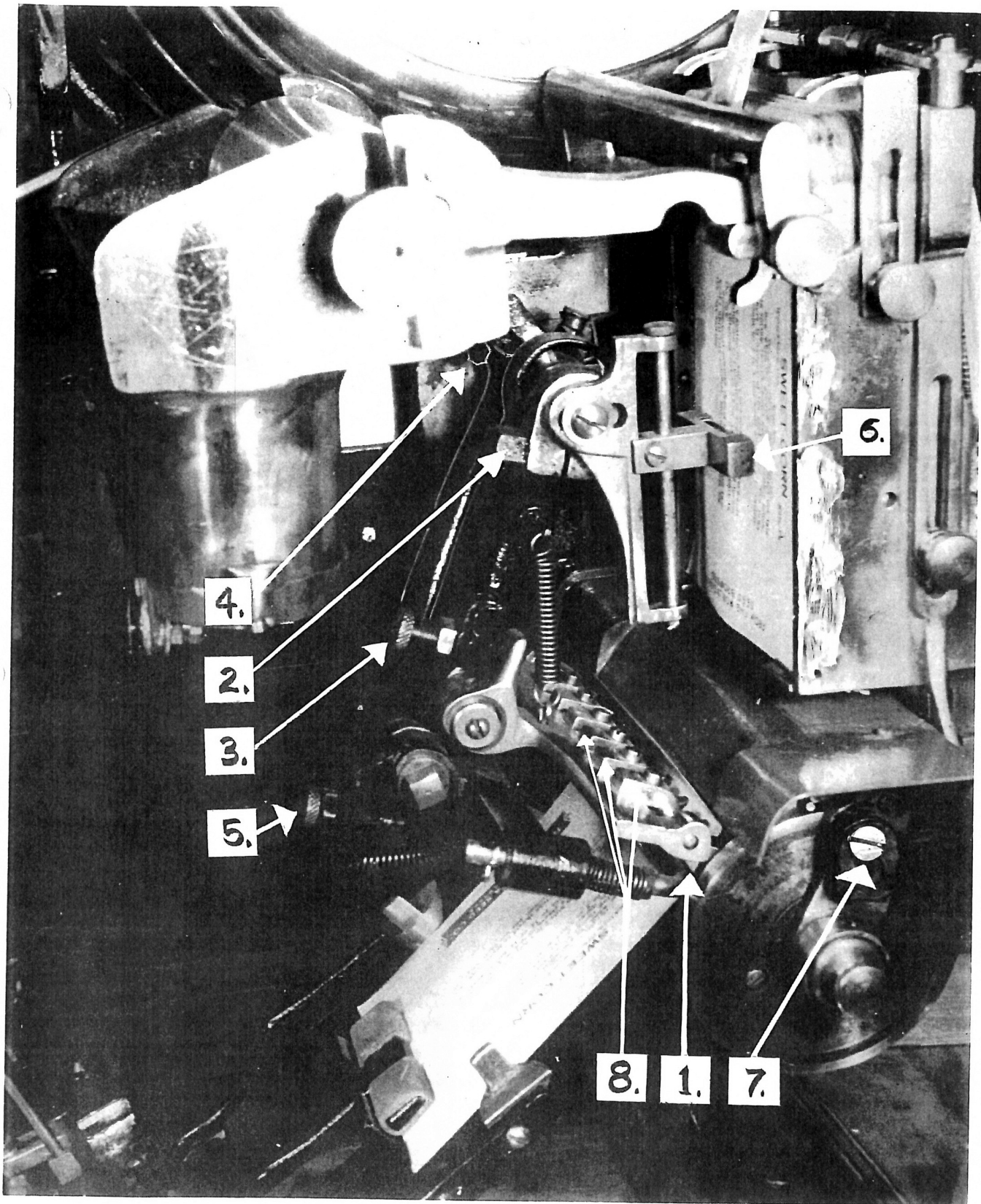
Turn Glue Roll by hand before starting in order to get roll covered with Glue.

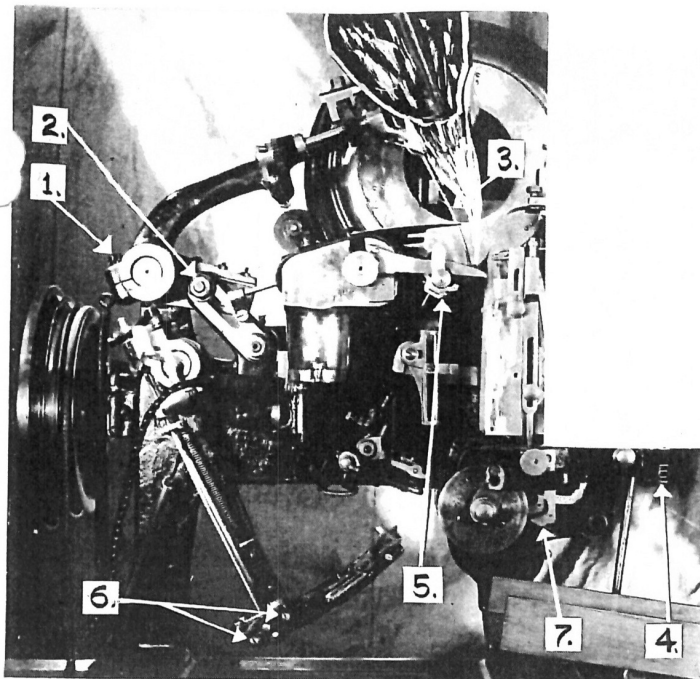
On stopping machine at close of work:—

Take out Glue Roll and Spotter and place in water. Once in three or four weeks take off Brass Rolls, clean and oil by passing oily waste through them. Do not let oil get on rubber rolls.

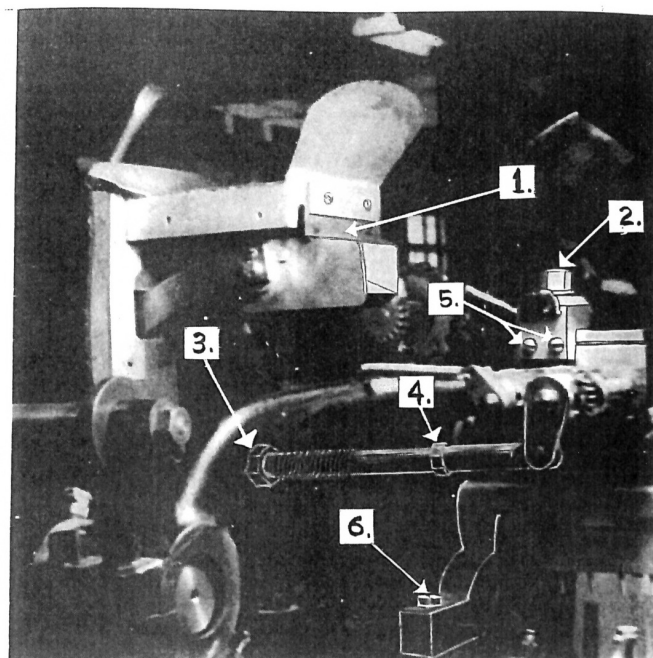


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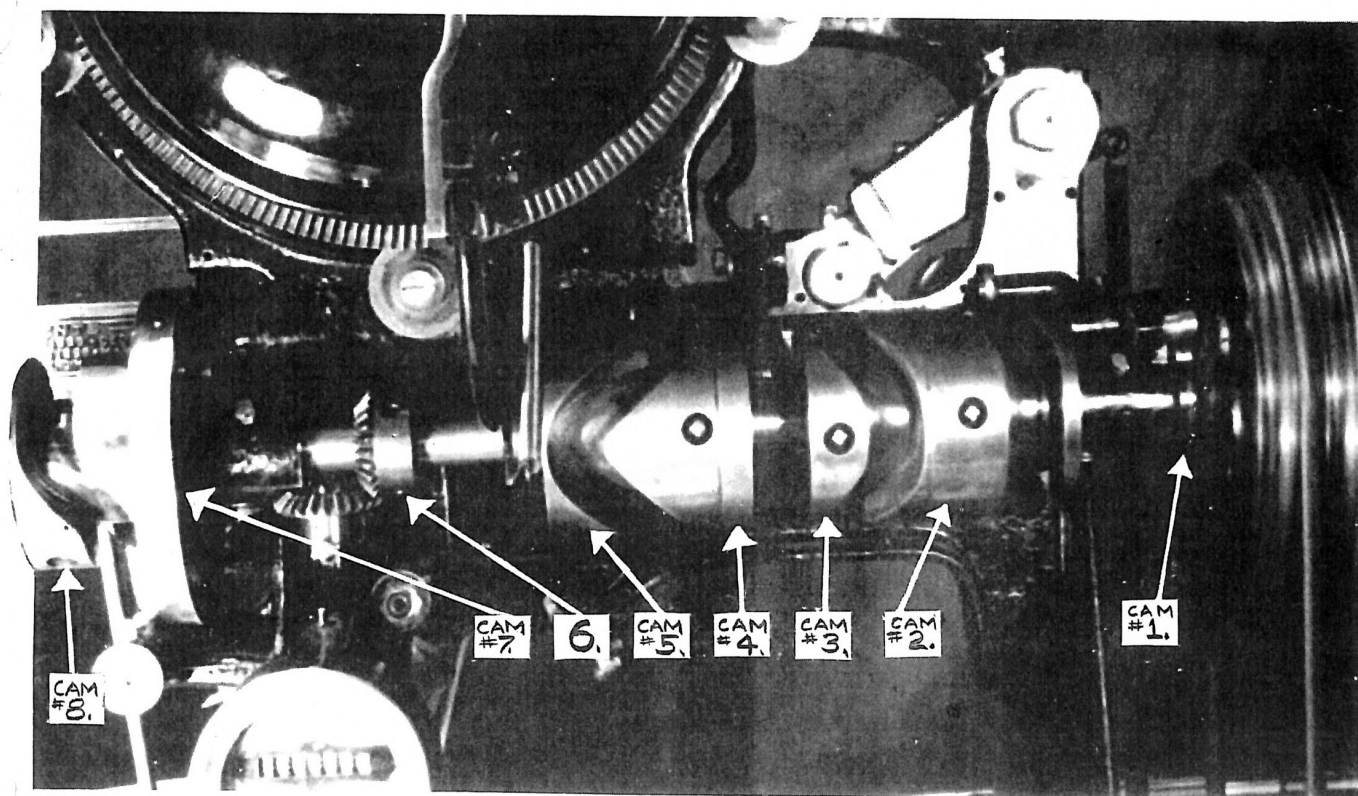




d



b



e

TIMING INSTRUCTIONS

by Bill Holder owner 80's - 90's

All timing is started by:

#1 Cam roll is positioned on the smaller projection of the #1 Cam which is attached to the flywheel.

#2 Cam is then set roughly by having the set screw show at the rear at right angle to the main shaft. Then adjust it so that the fingers of the Bag Carrier Arm just finish closing just before the arm starts it's downward motion.

#3 Cam should now be set roughly by having the set screw in line with that of #2 Cam.

#4 Cam set screw (in #5 Cam) should be set roughly set in line with #2 and #3 set screws. Then adjust the #4 Cam so that the spreaders just start to close before the grippers start to close.

#3 Cam is finally set so that the Tunnel Arm finishes it's downward movement just before the Spreaders start to open.

#8 Cam should now be set so it starts the Bag Box to the right (or back) just before the Spreaders reach their full spread.

#5 Cam is set so that the slide is in the furthest right position just after the Bag Box starts to the left from the right. The Slide should then start to the left from the far right position when #8 Cam is in the center of the forward (or left) movement.

The Folding Blades should just barely hit the Rubber Roll just before the Brass Roll is pushed forward to fold the bag.

#7 Cam should position the Measure in it's forward motion about 1" from the Tunnel as the bottom edge of the Tunnel passes ahead of it. It will then reach it's furthest point of the throw when the Tunnel is in it's furthest point and motionless.

After the timing is completed the final adjustment of the Geneva Gear must be made. Loosen all 3 set screws on the Main Shaft Bevel Gear. Turn the machine by hand until the Bag Box has just reached it's extreme left (or forward) position. Turn the Bevel Gear until the teeth of the Geneva Gear are in the 9 o'clock position. Mark the set screw that is exposed on the Bevel Gear and tighten this screw. Rotate the machine by hand until one Brass Roll has been pushed down by the underside of the Base Feet. Continue rotation until the Base is again in extreme left position. In this position the top of the Base Feet should just touch the bottom of the Brass Roll without moving it. If the Brass Roll is too high, above the Base Feet loosen the Bevel Gear set-screw and turn gear "down". If the Brass Roll needs to go down move gear set screw down. If the Base Feet hit the Brass Roll, the roll needs to go up, move the gear set screw "up".

WHEN THE CORRECT TIMING IS OBTAINED GO OVER ALL THE SET SCREWS AND TIGHTEN SECURELY.

If feet lift roll -
turn gear 'back'

If roll is too high -
turn gear 'forward'