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INSTRUCTIONS

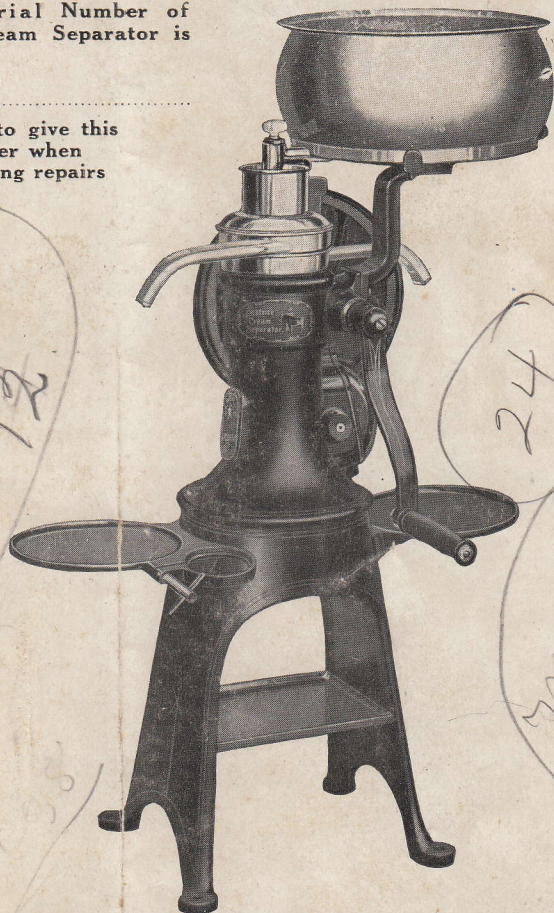
For Setting Up and Operating Beatrice Cream Separator

Numbers 43A, 48A and 53A

The Serial Number of
your Cream Separator is

No.

Be sure to give this
number when
ordering repairs



KEEP THIS BOOK

Beatrice Creamery Company

General Office, Chicago, Illinois

M209D
M90D
7773448



BEATRICE CREAM SEPARATOR
READY FOR SKIMMING

BE SURE TO READ THE FOLLOWING INSTRUCTIONS CAREFULLY BEFORE ATTEMPTING TO SET UP OR OPERATE THE SEPARATOR. BY FOLLOWING THESE INSTRUCTIONS YOU CAN SECURE THE BEST RESULTS AND GREATLY PROLONG THE LIFE OF YOUR MACHINE.

THE following is a list of the separate parts you will find packed in the box with each separator. Please check this list over carefully. Should any part be missing report at once, being sure to return stub of inspection tag.

ASX	Front shelf and vise
ASY	Rear shelf
ATH	Tool Shelf
ZL	Bracket and spider (AGN)
AGA	Crank complete, (UH, DM, AFW and AFV)
BTG	Aerating device and bail, (BTH)
VX	Supply can
BDR	Cover and spout for cream
BDS	Cover and spout for skim-milk
SW	Feed cup and cover, regulating
BDE	Float
UR	Large brush for cleaning bowl shell
APN	Medium brush for cleaning spouts
UT	Small brush for cleaning faucet, etc.
VM	Drip cup
AFV	Cap washer for crank
	Faucet plug
VD	Lag screws (4)
AFW	Screw for crank washer
ME	Ratchet pin
MF	Ratchet pin spring
ASZ	Rubber rings (2) (packed around feed cup)
VG	Squirt oil can (copper)
ATK	Extra bowl vise
ATV	Washing device—marked AAU
VH	Screw driver, regular
CRL	Screw driver for skim-milk screws
XW	S wrench
AFS	Spanner wrench
VN	Adjusting wrench for bottom bearing
	Can Separator oil (one quart)
	Bowl complete

SELECT A SUITABLE LOCATION FOR SEPARATOR

In setting up a separator, the selection of a suitable place should be given due consideration. The quality of the cream and the time spent in separation are both affected by this location. Placed in the house it requires that the milk be carried there, and skim-milk back again. Placed in the barn it means that the bowl parts be carried back and forwards to be washed. Of the two places the house is to be preferred, as the separator is then under the eye of careful housewife and will usually be kept in good condition. When placed in the barn the separator is exposed to excrement of fowl, dust and dried manure particles. Often the washing is neglected and the bowl, becoming rusty, soon becomes useless. Such a condition is, of course, contrary to good practice in the handling of a food product. The best place is a special room built of cement with cement floors and

walls impervious to the entrance of sand and dirt. This room should be provided with plenty of light and if possible located near the well. Such a building could be erected by farm labor at small expense. The result would be a minimum amount of labor, a long-lived machine and a better quality of cream.

Be sure that the separator is placed on a solid floor. If the floor is shaky the separator will vibrate, causing a loss of fat and wear on the separator. Never place a separator in a dark, damp, dirty place. It is too valuable to be disabled through carelessness. Proper care enables the user to greatly increase the life of the machine. The following points should be noted:

- (1) Set level on a firm foundation.
- (2) Admit plenty of sunlight.
- (3) Do not locate in a damp place.

SETTING UP THE SEPARATOR

Most separators sold are packed knocked down. This causes the farmer considerable trouble in assembling the machine. The Beatrice Cream Separator is packed already set up, just as far as possible.

Take the frame from the box and set it up on a good foundation, as previously described. Then put the tool shelf (ATH) in place between the legs of the frame. This can be done by holding the shelf in a diagonal position until you get it between the legs and then pressing it down flat so it will rest on the four little projections on the frame that support it. As this shelf is made to fit tightly it should be placed in position before screwing the legs to the floor. Before placing the bowl and tinware in position put a screw through the hole in each of the feet of the separator and screw same down sufficiently to hold the machine in position, then place a level across the round finished top of the frame or bowl casing in several directions. If it does not set level, then place a sufficient amount of leather, shingle or other material at hand, under the feet until the machine is perfectly level, then tighten the screws so that they will hold the machine firmly in position, making sure that it remains level after tightening down.

It is difficult to set a separator so that it will remain level indefinitely. It is a good plan to apply the level frequently and be sure that the separator is at all times in proper position.

Next, put on the crank (AGA) as follows:

Place the ratchet pin spring (MF) in small hole in the crank hub. Then place ratchet pin (ME) on top of spring. Slip the crank onto crank shaft (AFZ), then place crank washer (AFV) on end of shaft, fastening with crank washer screw (AFW).

Put on the bracket shelves, placing the one with the bowl vise (ASX) on the front of the machine and the other one (ASY) on the rear.

GETTING THE BOWL READY FOR SKIMMING

Next, place the bowl in the bowl vise. Use care in tightening the vise so as to avoid danger of bowl slipping out when force is applied.

Take the spanner wrench (AFS) and unscrew the bowl nut (ATB) by turning same in the direction of the arrow marked "to open." Remove the parts of the bowl and thoroughly wash them separately. It is absolutely necessary to do this before attempting to use the separator, as all tinned parts are covered with grease when the machine leaves the factory, this grease being put on to protect all these parts from rusting. In shipping, at time a little dirt and dust will collect about the bearings and other parts which should be carefully wiped off before operating the machine, as otherwise it is liable to cause trouble.

After the bowl has been thoroughly cleaned, press the rubber ring in the groove in the bowl bottom and then place the discs (BRY and CXB) on the disc holder (EPK), making sure that they are placed in consecutive order with No. 1 at the bottom.

Place the disc holder, with the discs on in proper order, over the top of the feed shaft attached to the bowl bottom (EPF) so that the lug on the disc holder will fit into the slot in the bowl bottom.

Place the dividing cone or top disc (AFT) on top of the other discs, then place the bowl shell (EPC) on top of all, so that the lug on the side of the bowl shell will register with the notch in the bowl bottom.

Then put on the bowl nut (ATB) and screw down until the bowl comes to rest on the bowl bottom. This will compress the rubber ring in the bottom of the bowl and make a tight joint, preventing leakage.

The bowl parts when received are properly arranged. When taken apart for removal of the grease, the position of each should be observed and no trouble should result in replacing them.

OILING

After setting up the separator, all bearings should be flushed with kerosene to remove dirt. Apply kerosene liberally, using a squirt oil can, to the four oil holes, one of which is on each end of the crank shaft, and pinion shaft. Turn the name plate (ATW) aside and fill the lower bushing (ETE). Turn the crank rapidly for a half minute or so. Now oil at same points with separator oil, using a light oil of good lubricating quality.

The above method is that of flushing the separator at any time the bearings become dirty. This treatment every week or ten days will insure easy running.

Before each skimming, place a few drops of oil in each oil hole, also saturate the felt pad (SD) in the upper bearing (SE). Squirt a liberal supply of oil into the oil cup, which lubricates the worm on lower end of bowl spindle. The separator should be oiled at these points preceding each skimming. Keep in mind that careful and frequent oiling will prolong the life of the separator and promote easy running.

Keep the felt pad (SD) clean, so the oil may freely filter through it. Should it become hardened remove and wash in kerosene.

After oiling, place the bowl on the spindle. Do this gently. Before releasing the bowl from the grip of the hand, give it a half turn to make sure that it properly engages the notch in the end of the spindle. Be careful not to drop bowl onto the spindle.

PLACING TINWARE

Place the skim-milk pan (BDS) on the frame so that the long curved spout will project back under the supply can as shown in the picture on inside front cover. This spout can also be turned to a front position if so desired.

Put on the cream pan (BDR) with spout projecting in front or rear as desired, so that the cream will flow into the cream receiving pail which sets upon the front shelf (ASX) or rear shelf (ASY).

Put on the feed cup and cover (SW) with the float (BDE) in the cup.

Be sure that all the tinware is pressed down so that it fits snugly.

At this point observe by turning the crank slowly and just starting the bowl if the bowl is scraping on the tinware or rubbing on the upper bearing. If scraping on the tinware a rattling noise will be heard. Either the tinware has not been properly pressed down or the bowl is set too high. If rubbing on the upper bearing, the crank will be difficult to turn, for the bowl is set too low. If either condition is observed, refer to page 15 for instructions on adjusting the height of bowl. Each Beatrice Cream Separator is adjusted at the factory, but shipping may result in change of adjustment.

Place the float in the feed cup. Then put the supply can in position in the spider with the faucet extending into the feed cup over the float, taking care to see that the loop on the back of the supply can fits over the point on the spider.

Place the cream receiving pail on the cream pail shelf (ASX) and be sure the cream pan spout is so turned that the cream will flow into the pail. See remarks on care of cream, page 23.

STARTING THE SEPARATOR

In operating the Beatrice Cream Separator such precautions as are necessary in operating any high speed machine are equally applicable here. Full speed should not be obtained too quickly. **It pays to spend one minute to get speed up slowly.** Once the speed is up it should be maintained evenly. Too high or too low a speed prevents best results. **Varying speed also affects the test of cream.** Raise the crank gently until ratchet pin catches. In turning do not push and pull, but maintain the pressure on the handle evenly all around at all times. Let the body follow in part the motion of the handle and thus avoid hard turning by attempting to turn by use of arm muscle alone. A full, even speed is essential if cream is to be at all uniform in test. The proper speed is from 55 to 60 revolutions of the crank per minute, but whatever speed is selected between these points, should be maintained uniformly, as a variation in speed means a variation in test.

SKIMMING THE MILK

After you have obtained the proper speed, open the faucet and maintain the speed until the milk is all skimmed. The milk should be thoroughly strained through a cloth strainer before skimming. This prevents any foreign particles that may be in the milk from

getting into the separator bowl and filling or clogging the inlets or outlets or in any other way interfering with its proper working.

FLUSHING THE BOWL

When you have finished skimming the milk, let go the handle, or if you are running with power, release the power, and immediately while the machine is slackening in speed, pour into the supply can two or three quarts of lukewarm water, using as much as necessary in order to flush out the cream that is left in the bowl after the milk has ceased to flow. The water should never be more than lukewarm, for very hot water will cause the casein or slime in the bowl to bake on and adhere to the parts thereof, causing difficult washing and injury to the cream.

When through skimming do not attempt to stop the bowl but allow it to run down itself. Do not attempt to remove the cream and skim-milk pans while the bowl is in motion.

TAKING THE BOWL APART

Remove the bowl from the frame, and by turning the bowl upside down empty the flushing that remains in the bowl into the skim-milk receptacle. Place the bowl in its vise, tighten vise securely and take off the bowl nut as previously described. Remove the bowl shell and the top disc (AFT). Take hold of the disc holder at the top and remove all of the discs therewith. Thoroughly wipe off the slime and dirt that may collect on the inside of the bottom cone or the edges of the discs before putting into water to be washed.

WASHING THE DISCS

Without disarranging the discs, attach the disc washing device (AAU) by putting the blade with the center catch through the central opening of the disc holder, allowing the small lug on the spring to catch in the opening provided therefor, as shown in Fig. 1. Submerge the discs and disc holder in a pail or other receptacle containing a sufficient quantity of lukewarm water (not hot water, as it will cause the dirt and slime to bake on and stick to the discs), to cover the discs as shown in Fig. 2, keeping the washing device and the discs thereunto attached close to one side of the pail and submerged. Turn the handle of the washer twenty-five or thirty times forward and then

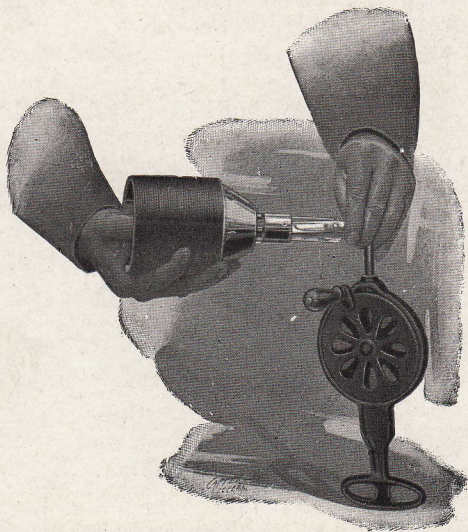


Fig. 1

twenty-five or thirty times backward at a rapid rate of speed. This will require about one-half minute. Then raise the discs gradually out of the water and while so doing continue to turn the crank which will throw off the dirty water.

After washing in lukewarm water, submerge the discs in a pail or other receptacle of scalding water (be sure the water is scalding hot) turn the crank of the washer rapidly twenty or twenty-five times to the right, then allow it to stop and turn it twenty or twenty-five times to the left. This will require another half minute and will complete the washing and scald the discs. Then lift the washing device with discs attached gradually out of the water and still holding them in the same position continue to turn crank, which will throw off all the water. Then lift entirely out of the pail and turn the crank rapidly twenty or twenty-five times and the air will thoroughly dry the discs.

If you find that the discs have not been properly washed, it is because the slime has not been wiped off bottom disc before washing, the last water has not been scalding hot, or these instructions have not been followed in some particular.



Fig. 2

USE OF AERATING DEVICE

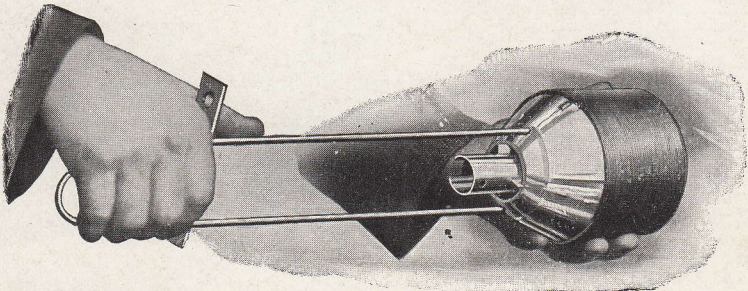


Fig. 3

After the discs have been washed as explained above, detach from washing device and hold them in an upright position on the disc holder and taking the aerating device, insert same in the two holes

in the discs as illustrated in **Fig. 3**. When this has been done, turn the device and discs together on one side, then holding the outer edges of the discs with one hand, push the aerating device with the

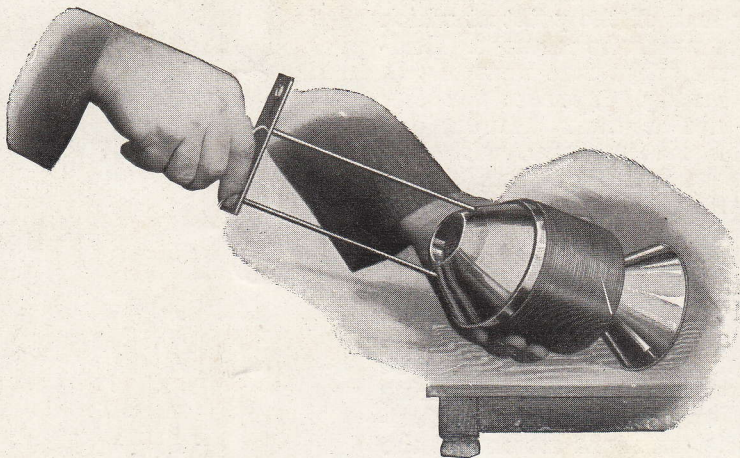


Fig. 4

other hand, this will force out the disc holder and also force the discs onto the aerating device, as shown in **Fig. 4**. Spread the discs on this aerating device and hang up by the bail provided, in some place where the air can pass readily between them. The aerating device is designed so that it can be readily hung up as shown in **Fig. 5**. This airing of discs is a benefit to the quality of the cream, and prevents the discs from rusting.

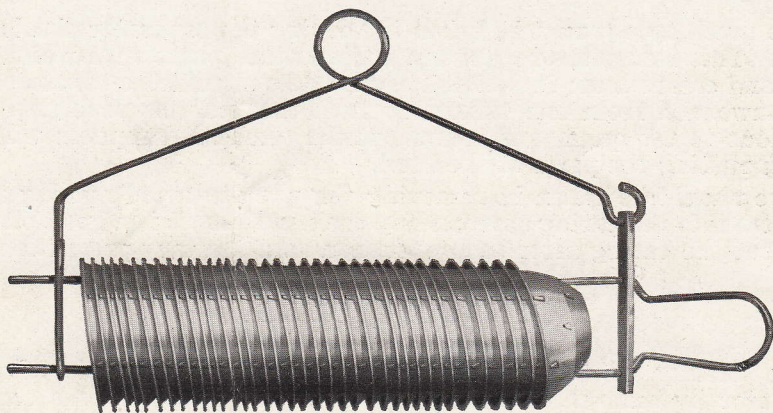


Fig. 5

REPLACING DISCS ON DISC HOLDER

To replace discs on disc holder, slip the aerating device until the ends are drawn within about one-quarter inch of the point at which the discs would be released. Holding same bottom side upwards, as shown in Fig. 6, insert the disc holder upside down, having the extended rib register with the notches on inside of discs. Then discs will readily slip on disc holder.

It is suggested that once per week the discs should be removed, washed and scoured separately. This is a good sanitary precaution. In no case should a separator be left unwashed from one skimming to another, as it is not only injurious to the quality of cream, but the confined dampness will result in rusting the discs and all parts of bowl.



Fig. 6

WASHING AND CLEANING SEPARATOR

As previously explained, the Beatrice Cream Separator is supplied with a special device for washing the discs and disc holder by centrifugal force, but it is also necessary that other parts of the separator should be carefully washed. Special brushes are provided for washing the inside of the bowl shell, milk pan and cream pan. Brushes are also provided for washing the faucet and for running through the openings in the feed shaft through which the milk enters the bowl.

Too much care cannot be taken in keeping the separator absolutely clean. This refers to the tinware and all other parts with which the milk and cream come in contact. In no case should the separator be left unwashed from one skimming until the next, as it is not only injurious to the quality of cream but the confined dampness will result in rusting the parts of the bowl.

Care should be taken in removing the pans to avoid spilling milk or water into the casing surrounding the bowl, and it is a good plan to wipe out the casing after each operation as a sanitary precaution.

DENSITY OF CREAM

The density of the cream is regulated in the Beatrice Cream Separator by skim-milk screws as shown in Fig. 7. These screws are readily turned by the skim-milk screw driver (CRL). Both screws should be adjusted so that they project about the same dis-

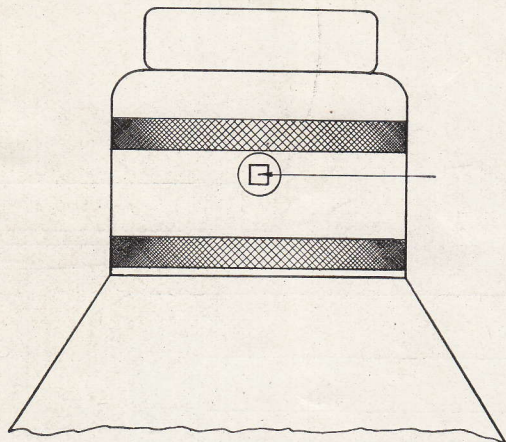


Fig. 7

tance on the inside of the bowl neck. By turning the screws to the left or outward the density of the cream is increased and it will have a higher test. By turning the skim-milk screws to the right or inward, the density of the cream is diminished and it will have a lower test. These screws once adjusted to produce the thickness of cream that is desired will require no further attention except to see that the outlets are not obstructed by particles of

curd or other matter during the washing. In adjusting the screws they should only be turned one-fourth of a turn at a time, as a slight variation in the adjustment of the skim-milk screws will have its effect on the density of the cream. It is best to leave the square of the skim-milk screw as shown. □

Remember that adjusting the skim-milk screws does not control the test of the cream as desired unless all the other factors, such as speed, rate of inflow, temperature of the milk, etc., remain the same. See remarks on variation in test on page 19.

ADVANTAGES OF HEAVY CREAM

The skim-milk screws should be adjusted to skim from thirty-five per cent to forty per cent cream. It is to your interest because:

- (1) You have more skim-milk for feed.
- (2) You have less cream to handle.
- (3) You have less cream to cool and keep cool.
- (4) You have less cream to haul if you sell cream.
- (5) Cream is of better quality because rich cream will keep better.
- (6) Twenty pounds of forty per cent cream contain as much butter fat as forty pounds of twenty per cent cream.

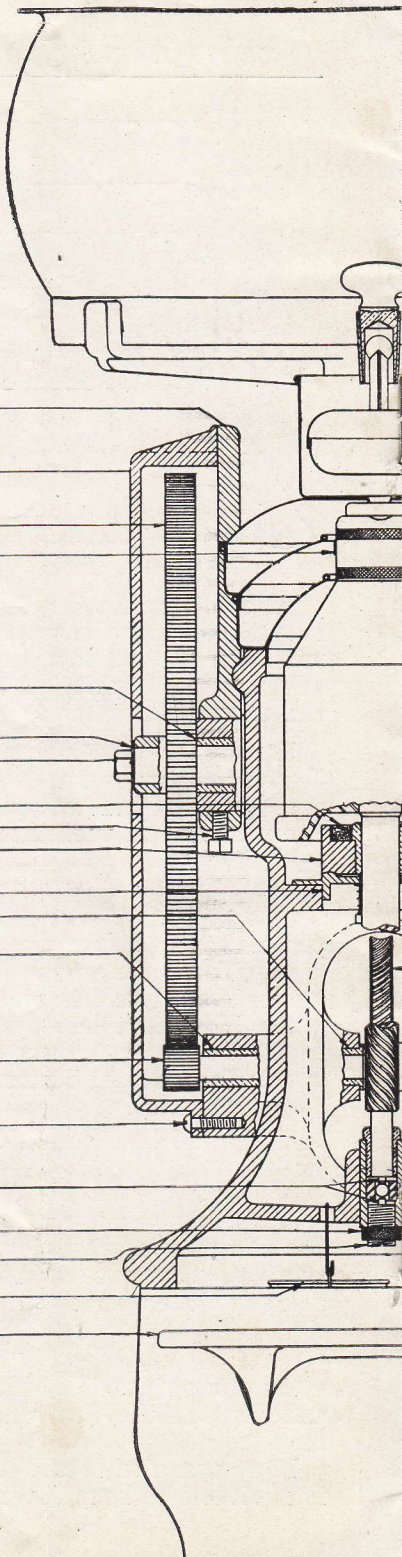
CARE WHEN NOT IN USE

If, at any season of the year, it should be necessary to discontinue the use of the separator, it is good practice to oil parts to prevent rusting. The several parts of the bowl should be thoroughly air-dried and oiled, then placed where dampness will not affect them.

DUST PROTECTION

As far as possible, the separator should be protected from dust and dirt, as the life of a separator depends largely on the care it receives.

If a separator is not set in a building which excludes the dust, it is advisable to keep cover over machine at all times when not in use.

- 
- AGB** Bracket for Shield _____
AGC Shield for Gear Wheel _____
HBL Gear Wheel _____
TZ Skimmilk Screw _____

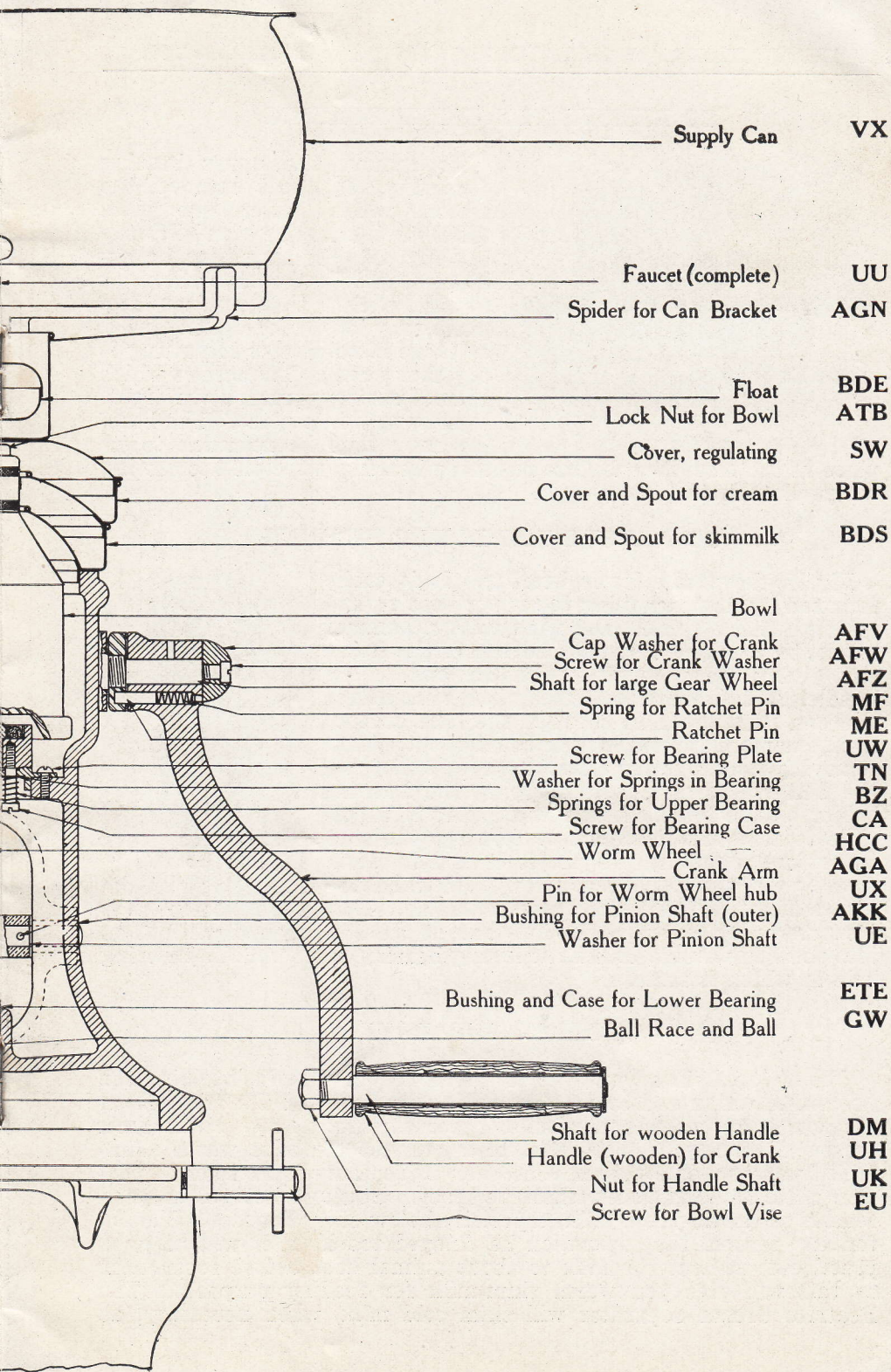
EH Bushing for Crank Shaft _____
UF Washer for Gear Wheel _____
UL Screw for Gear Wheel _____
SD Felt Pad _____
VC Set Screw for Shield Bracket _____
SE Bush. and Case for Up. Bearing _____

HG Plate for Upper Bearing _____
HM Bush. for Pinion Shaft (intermediate) _____
KP Bush. for Pin. Shaft (pinion end) _____

HBM Pinion and Shaft _____

VA Set Screw for Gear Wheel Shield _____

UN Steel Points for Spindle and Lower Bear. _____
GE Lock Nut for Adjusting Screw _____
GD Adjusting Screw for Lower Bearing _____
VM Drip Cup _____
ASX Shelf and Vise (front) _____



VX

UU

AGN

BDE

ATB

SW

BDR

BDS

AFV

AFW

AFZ

MF

ME

UW

TN

BZ

CA

HCC

AGA

UX

AKK

UE

ETE

GW

DM

UH

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TO REMOVE THE UPPER BEARING

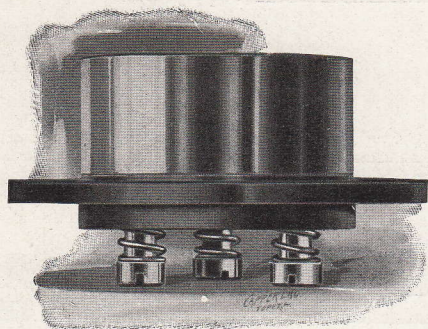


Fig. 8

To remove the upper bearing (see Fig. 8), first remove the screws which fasten the plate (HG) to the machine and lift the bearing out. It may then be examined, and cleaned by means of a soft cloth. The springs and parts may easily be taken apart, as there is no danger in putting it together wrong. The screws which control spring pressure are tightened snugly into place. The bearing may then be returned to its

place in the machine. Before replacing bearing, wipe off the casting where plate rests.

TO REMOVE THE LOWER BEARING

Fig. 9 shows the lower bearing. It is easily removed by first removing the upper bearing and taking out the spindle and then with a hammer handle by reaching under the bottom of the frame and giving a tap upward with the end of the handle. This loosens the bearing in the frame and you can then reach in through the hole covered by the name plate and lift the bearing out. After removing the adjusting screw the race containing the ball will drop out by tapping the bushing holder on the table. In a few minutes it is possible to remove this complete bearing, examine, adjust and clean it. To put it back into place, insert with the adjusting screw downward and give a slight tap with the hammer handle. This bearing complete is a tapered plug larger at the top than at the bottom, and will not go into position wrong. Before replacing bearing, wipe out the tapering hole in which it rests.

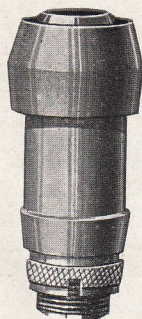


Fig. 9

TIME TO SEPARATE

One of the main advantages of the hand separator is obtaining the skim-milk warm and sweet for feeding purposes. Milk fresh from the cow is in better condition to separate than at any other time. Closer skimming is obtainable, and you get the nice warm skim-milk for feed. The proper time then to separate is as soon as possible after milking, as it will save labor. You will not get as good results separating cold milk, especially below sixty degrees. Should, for any reason, the separation be delayed too long, it will be good practice to re-heat the milk to about animal heat before separation, as this will give you warm skim-milk for feeding purposes. The Beatrice Cream Separator will skim cold milk, when necessary, as

closely as any separator made, but milk should never be skimmed cold when it is avoidable.

STEEL POINTS

As shown in Fig. 10, there are two steel points in the Beatrice Cream Separator. One of these is in the top of the adjusting screw (GD) and the other is in the lower end of the bowl spindle. The point in the adjusting screw is easily driven out by a small punch or wire nail inserted in the hole through the bottom of the screw. The points are flattened on two sides. To remove the point in the end of the bowl spindle, take the Spanner Wrench (AFS) which has a hole in the side that the point will fit into. Give the wrench a few turns and the point will be released from the end of the spindle. Before replacing the point fill the hole in the end of spindle with heavy machine oil. This prevents the points from setting. If you should accidentally break off the point in the end of the spindle, heat the end of the spindle over the blaze of a lamp and the point will come out.

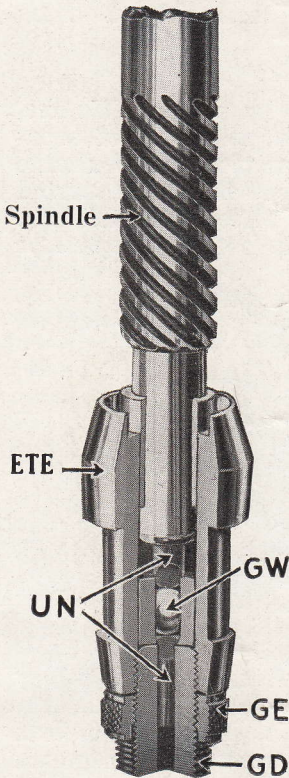


Fig. 10

HEIGHT OF BOWL

The height of the bowl in the frame is regulated by the adjusting screw (GD) in the bottom of the lower bearing (ETE). A special wrench (VN) is provided for adjusting this screw. To adjust bowl to proper height place bowl in frame, put on cream and milk pans and force down snugly. Loosen the lock nut (GE) on the adjusting screw, then with the wrench (VN) turn the adjusting screw (GD) to the right (or upward) until the top of bowl touches the regu-

lating cover. Then turn the adjusting screw to the left (or downward) one-half to one turn. The bowl will then be the proper height for best results. Then tighten lock nut (GE) securely.

When the bowl is at correct height, it will not scrape or grate on the covers, but will turn perfectly free therein.

TO REMOVE THE WORM WHEEL

The worm wheel (HCC) is attached to the pinion shaft (HBM) by a small tapering pin (UX). In order to remove same, first remove bowl spindle as directed in the following paragraph, then take off worm wheel cover (ATC) and with a punch or small nail drive on the small end of the pin. This worm wheel can be replaced in only one position in which position it will mesh properly with the

worm spindle. Be sure to replace the washer on the shaft between the wheel and the bushing on the gear wheel side. After the worm wheel is made fast to the pinion shaft see that they revolve freely by turning by hand.

TO REMOVE BOWL SPINDLE

There is a collar on the bowl spindle to prevent lifting the spindle out with the bowl. To remove the spindle take out the three screws (UW) which hold the upper bearing plate (HG) in the frame. Then remove upper bearing and lift out the spindle.

POWER PULLEY

It is sometimes desirable to run a separator by power. We are, therefore, prepared to supply power pulleys for each size of separator whenever so desired. An ordinary pulley would not be suitable for use on a separator, for a cream separator bowl should be started slowly, and its speed gradually increased. It is almost impossible to belt power directly to a solid wheel attached to a cream separator without injuring the bowl or its gear.

Our power pulley (Fig. 11) is especially designed so that mechanical power of any kind can be used, for it is provided with a friction wheel which can be gradually tightened in order to start separator properly. Our friction pulleys have a two-inch face and are fourteen inches in diameter. Write for our Power Drive Attachment bulletin. To attach pulley to machines it is only necessary to take off the crank arm and place pulley on crank shaft and screw the pulley bolt tight. It requires only a minute's time to change from hand to power.

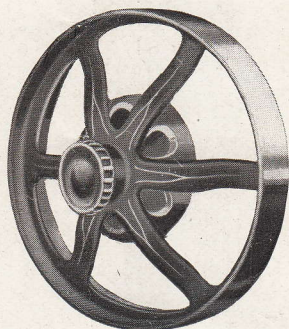


Fig. 11

With each friction clutch pulley we supply a spider offset (AUP), so that when it is desired to belt to overhead power the supply can may be shifted to left side over large gear wheel so as not to interfere with the belt. To attach, remove spider (AGN) from bracket (ZL) and fasten end of offset to spider. Then fasten other end of offset to bracket on separator.

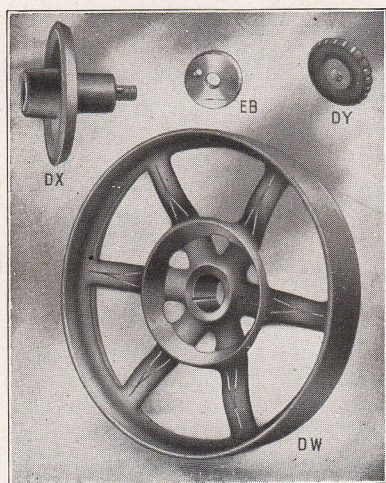


Fig. 12

LIST OF FRICTION PULLEY PARTS

- DW Wheel only
- DX Friction Disc
- DY Hand Nut
- EB Washer

BEATRICE POWER DRIVE

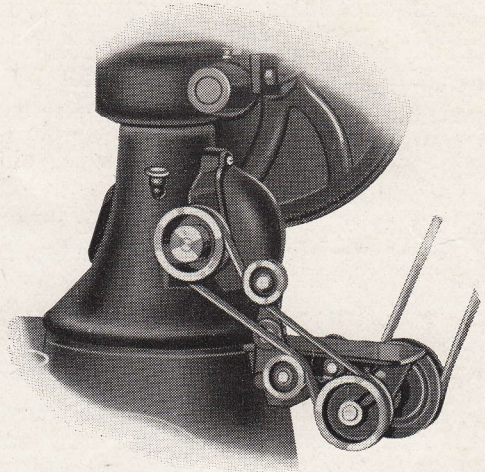
By the use of the Beatrice Power Drive Attachment the Beatrice Separator will operate as smoothly and safely as if run by hand.

That feature which insures smooth running and overcomes jerkiness of gasoline engine or other farm power, is our arrangement of pulleys on the attachment drive belt. These are held against the belt on top and bottom by an adjustable coil spring.

The drive pulley on pinion shaft has a ratchet which in case of sudden stopping or interference with the power prevents injury to separator.

The shift from tight to loose pulley or vice versa insures, at starting, the gradual application of power and also prevents the accidental throwing on or off of power.

Write for our Power Attachment Bulletin which gives prices and all the details regarding Beatrice Power Attachments.



BOWLS

Unless a Beatrice bowl is damaged beyond natural wear and tear there is no reason why it should be necessary to buy a new bowl. However, if your bowl should ever become so worn or accidentally damaged that it cannot be repaired at a reasonable cost, we will supply you a new bowl at extremely low prices.

We call your especial attention to the fact that the bowl you will receive will be a brand new bowl and not an old bowl that has been repaired.

Write to us asking for copy of our "Exchange Bowl Plan" circular. This plan enables the Beatrice user to at all times have a bowl in perfect running order at a very low cost. Prices and terms for securing exchange bowls contained in our exchange proposition.

OIL

A good many cream separators have been practically ruined by the use of poor oil.

Good oil makes a machine last longer.

Poor oil plugs up the holes and gums up the bearings.

Too heavy oil causes hard running.

Too light oil has too little lubricating property.

Good oil of the proper kind takes only half the quantity in use.

Cheap, impractical, common oil practically destroys high speed

machines with close fitting bearings and, of course, a cream separator comes under this description.

Fully realizing that the users of separators frequently have difficulty in getting the proper kind of oil and in knowing that the separator oil they buy is the proper kind, we have made arrangements to supply all of our users with the very best separator oil that it is possible to procure. As a surety to you that you are getting the right kind of oil a special label is placed on each can showing that it is Beatrice Cream Separator oil. This is a guarantee of quality and will protect you against substitution. Our oil contains no wax like poor oils, and either hot or cold, has proper lubricating qualities and is especially adapted to the separator. It has been selected by us after thorough and careful analysis of all the oils on the market and is made with special regard for best results with the cream separator.

IMPORTANT SUGGESTIONS

When separator runs hard it may be due to several things.

First. A poor grade of oil may have been used which will gum up and clog the bearings, in which case run kerosene in the oil holes and bearings, thoroughly cleaning same of all gum and dirt. Then turn the crank rapidly for a short while and afterwards oil thoroughly with high grade separator oil. See remarks in regard to oil on page 17. Remove bowl before performing this operation.

Second. It may be due to the bowl touching the tinware in some place or by being too low and rubbing on upper bearing.

Third. It may be due to the separator being out of level. The separator is constructed with a bowl and spindle at right angles to the bearings and any variation from this will cause a separator to run hard and prevent it from producing the best results. Keep the machine absolutely level at all times.

When the separator bowl vibrates it will not work properly. This may be due to the separator not being level, as above stated, or not being securely fastened to a firm foundation.

It may be due to the discs not being put into the bowl in proper order. See that the discs are always arranged as stated on page 4.

A FEW DON'TS

Don't drop the bowl in its place in the frame. To drop the bowl is liable to damage the lower bearing.

Don't run the separator at an irregular speed, for then it will not produce the best results. Maintain speed according to directions.

Don't fail to oil the separator each time before using, as per instructions.

Don't use poor oil. It will gum up the bearings and make the machine run hard.

Don't fail to flush the bearings with kerosene every week or two in order to wash out gummed oil and grit.

Don't place the bowl in the oven in order to dry it—for this practice will melt the solder and damage the bowl.

Don't allow the supply can to empty until through skimming. Keep

it well filled and the separator will skim to its capacity and deliver cream of uniform density.

Don't be careless in the general handling of the separator. With good care the machine will last a lifetime.

Don't ever strike any brass or bronze part or screw, with metal, as this is liable to injure the part.

VARIATION IN CREAM TEST

An eminent dairy authority has given sixty-two causes for variations in butter-fat tests of cream—we will give a few only, of the most important.

First. Cream will vary according to the position of the skim-milk screws as explained on page 10.

Second. The rate of speed. As much as 20 per cent difference might easily be made through inattention to this factor. Full speed should be maintained; this should be uniform and not jerky. A speed of 55 to 60 revolutions of the crank per minute, should be first obtained before any milk is allowed to enter the bowl.

Third. The rate of inflow. If your supply can is not kept full or the flow is reduced in any way, the cream will be richer in fat.

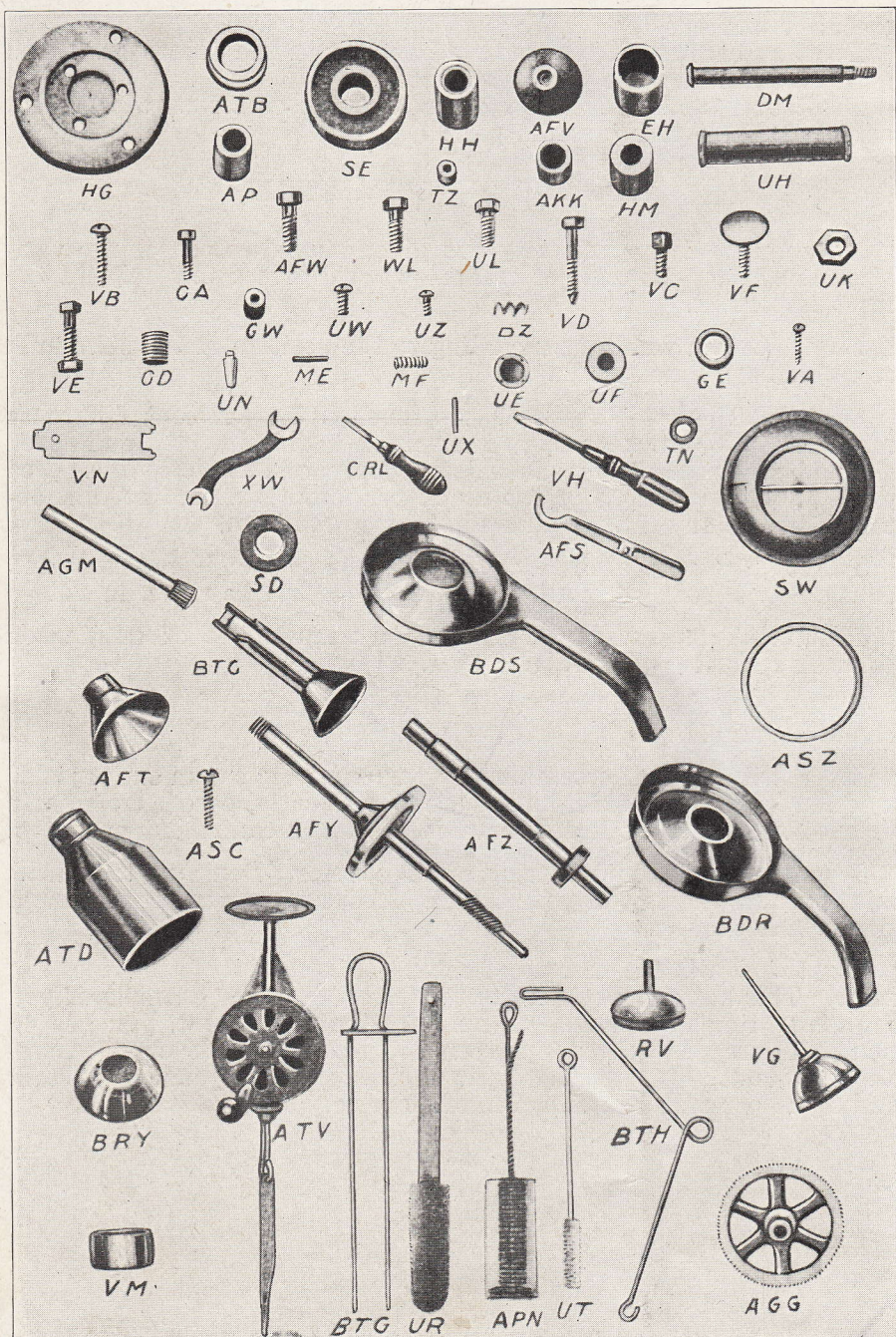
Fourth. Temperature. Variation in temperature of milk when skimming causes a variation in test.

Fifth. Vibration of bowl. If bowl is running unsteady, test is bound to vary.

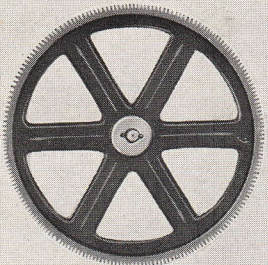
Sixth. Stoppage of cream flow by partly closing cream outlet yields a richer cream. If skim-milk outlets are partly closed, cream will test less. A clean separator bowl is necessary to prevent variation.

Seventh. Variation in amount of rinse water. Don't use too much; it will reduce the test of your cream. About two quarts run through the bowl is enough.

Eighth. Variation in test of milk. Milk scarcely ever tests the same. This has an effect on the test of cream. For example, if you are separating 400 pounds of milk testing 3 per cent, you get 40 pounds of cream testing 30 per cent; if you separate the same number of pounds (400) testing 4 per cent, you get 40 pounds of cream testing 40 per cent or a variation of 10 per cent.



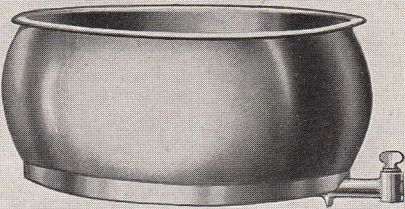
Note:—AGG Worm Wheel should be HCC



HBL



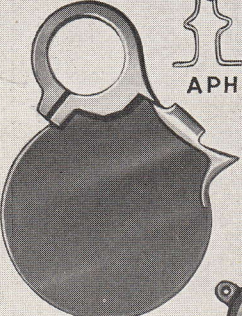
EU



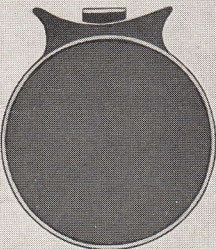
VX



APH



ASX



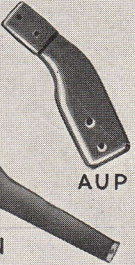
ASY



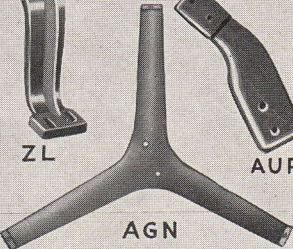
ZL



UU



AUP



AGN



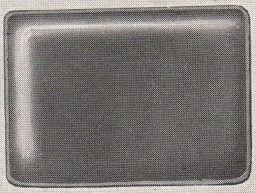
ATK



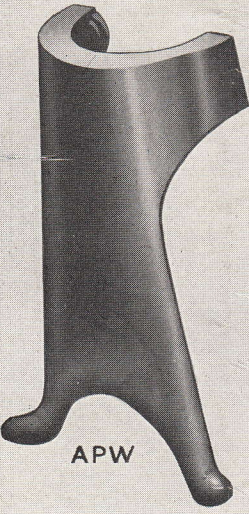
ATC



AGA



ATH



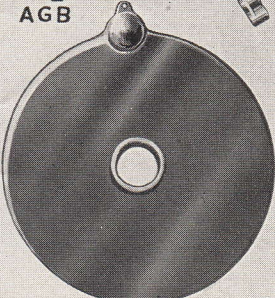
APW



AGB



ATW



AGC



AAG

List of Parts for Beatrice Cream Separator Numbers 43A, 48A and 53A

For Pictures of Parts see Pages 20 and 21

In ordering new parts always give letter and name of parts desired as well as the size of machine and the serial number shown on top rim of casing surrounding bowl. Before ordering parts send to nearest office for price list, being sure to give number of your Separator. Observance of these instructions will avoid mistakes and delays.

AAG	Frame for No. 43A.....	HEL	Gear Wheel, large.....
AAG	Frame for No. 48A.....	HBM	Pinion and Shaft.....
AAG	Frame for No. 53A.....	HG	Plate for Upper Bearing.....
AFV	Cap washer for Crank.....	HM	Bushing for Pinion Shaft, inter- mediate.....
AFS	Wrench, Spanner.....	KP	Bushing for Pinion Shaft, pinion end.....
AFT	Dividing Cone for Bowl. See foot note	ME	Ratchet Pin.....
AFW	Screw for Crank Washer.....	MF	Spring for Ratchet Pin.....
AFZ	Shaft for Large Gear Wheel.....	SD	Felt Pad for Upper Bearing.....
AGA	Crank Arm.....	SE	Bushing and Case for Upper Bearing.....
AGB	Bracket for Shield, except beginning with Serial Nos. 435639, 485539 and 532043, order H.B.	SW	Cover, Regulating for No. 43A.....
AGC	Shield for Large Gear Wheel.....	SW	Cover, Regulating for No. 48A.....
AAG	Worm Wheel.....	SW	Cover, Regulating for No. 53A.....
AGN	Spider for Can Bracket for No. 53A. ZX—Spider for Nos. 43A and 48A.....	TN	Washer for Springs in Upper Bearing, 3 required.....
AKK	Bushing for Pinion Shaft, outer.....	TZ	Skim-milk Screw (large).....
APH	Wire Drip Cup Holder.....	UE	Washer for Pinion Shaft.....
APN	Brush for Spouts.....	UF	Washer for Large Gear Wheel.....
APW	Leg.....	UH	Handle (wooden) for Crank.....
ASG	Screws for holding Frame to Legs.....	UK	Nut for Handle Shaft.....
ASX	Shelf and Vise, front.....	UL	Screw for holding on Gear Wheel
ASY	Shelf, rear.....	UN	Steel Points for Spindle and Low- er Bearing.....
ASZ	Ring (Rubber) for Bowl.....	UR	Brush for Bowl Shell.....
ATB	Lock Nut for Bowl.....	UT	Brush for Faucet.....
ATC	Cover for Worm Wheel.....	UU	Faucet (complete) for Supply Can
ATH	Shelf for Tools.....	UV	Supply Can with Faucet for No. 43A.....
ATK	Vise for Bowl, separate.....	UV	Supply Can with Faucet for No. 48A.....
ATV	Washing Device—marked AAU.....	UV	Supply Can with Faucet for No. 53A.....
ATW	Name Plate.....	UW	Screws for Upper Bearing Plate.....
AUP	Offset for Spider.....	UX	Pin for Worm Wheel Hub.....
BDE	Floater.....	UZ	Screws for Worm Wheel Cover.....
BDR	Cover and Spout, cream.....	VA	Screws for Large Gear Wheel Shield.....
BDS	Cover and Spout, skim-milk.....	VB	Screws for Can Bracket Spider.....
BRY	Discs, caulked..... See CXB	VC	Set Screw for Shield Bracket.....
BTG	Aerating Device for Discs.....	VD	Lag Screw.....
BTH	Ball for Aerating Device.....	VE	Bolt for holding Legs together.....
BZ	Springs for Upper Bearing, set of 3.....	VF	Thumb Screw for Can Bracket Spider.....
CA	Screws for Bearing Case (3), each.....	VG	Oil Can, copper.....
CRL	Screw Driver for Skimmilk Screws.....	VH	Screw Driver, regular.....
CXB	Discs, plain.....	VM	Drip Cup.....
DM	Shaft for Wooden Handle.....	VN	Wrench for adjusting Lower Bearing Screw.....
EH	Bushings for Crank Shaft (2), each.....	VX	Supply Can with Faucet for No. 53A.....
EPC	Bowl Shell..... See foot note		Supply Can with Faucet for No. 43A.....
EPF	Feed Shaft and Bowl Bottom.....		Supply Can with Faucet for No. No. 48A.....
EPK	Disc Holder..... See foot note		Cap Screw for Can Bracket (2), each.....
ERG	Bowl Spindle for 43A..... See foot note	WL	S Wrench.....
EPY	Bowl Spindle for 48A..... See foot note	XW	Bracket for Spider.....
EPM	Bowl Spindle for 53A..... See foot note	ZL	Spider for Can Bracket for 43A.....
ETE	Bushing and Case for Lower Bearing.....	ZX	Spider for Can Bracket for 48A.....
EU	Screw for Bowl Vise.....	ZX	Spider for Can Bracket for 43A.....
GD	Adjusting Screw for Lower Bear- ing.....		
GE	Lock Nut for Adjusting Screw.....		
GW	Ball Race and Ball.....		

FOOTNOTE REGARDING BOWL SPINDLES AND PARTS. New Spindles will not correct rough running or vibrating bowls. New Spindles when ordered are sent at the purchaser's risk in correcting his trouble. In case of rough running or vibrating bowls, we recommend our exchange bowl plan. Since each Beatrice bowl is balanced with its own parts, separate bowl parts such as EPF feed shaft and bowl bottom, EPK disc holder, AFT skim-milk shield and EPC bowl shell are never supplied separately.

Should the bowl of your machine be destroyed through fire or other accident, we will sell you a new bowl at our regular prices. But in the case of natural wear and tear when your bowl becomes unbalanced and fails to run true, you can exchange your old bowl, if complete with all its parts, for a new bowl. Write for our "Exchange Bowl Plan" folder.

CARE OF CREAM

The care of cream starts with the care of the cow, for unless the cow is properly fed, and properly housed, she cannot produce first-class milk. Without first-class milk, first-class cream is impossible.

Strong flavored feeds will taint the milk if not properly fed. Such feeds should only be given just after milking—never before.

Just before milking, wipe off the cow's udder carefully. This will guard against dirt falling in the milk.

The best time to separate the milk is immediately after milking, for then you get best results with your separator and have the warm, sweet skim-milk for feeding purposes.

Before skimming, the milk should be thoroughly strained. Straining through cloth is most effective. Many experienced dairymen tie several thicknesses of cheese cloth over the top of the separator supply can and pour the milk through this strainer. It is a good practice.

Too much care cannot be taken to produce good cream. Remember, the quality of the butter will largely depend on the care the cream receives.

Never use unclean pails or utensils.

Never mix warm cream with cream already cold.

Never leave cans of cream exposed to sun or surrounded by hot water.

Never let your cream freeze.

Never leave cream exposed to foul odors, such as barn odors, gasoline, coal oil, etc.

Never let milk stand over from one milking to the next just because you have a small quantity to separate, for you lose value in your skim-milk.

Wash your separator every time it is used. This makes better cream and saves repair bills.

"Cool" and **"Clean"** are the two most important words to remember in the care of cream.

Don't Lose This Book

It contains full catalog of repair parts
for your particular separator and other
information that is absolutely necessary
to have in ordering repairs.

Should you need advice as to the operation of your Beatrice Cream Separator, write our nearest office, as shown in the list below.

Beatrice Creamery Company

Beatrice, Neb.
St. Louis, Mo.
Detroit, Mich.
Durand, Mich.
Aberdeen, S. D.
Muncie, Ind.
Oklahoma City, Okla.

Chicago, Ill.
Lincoln, Neb.
Denver, Colo.
Topeka, Kansas
Cincinnati, Ohio
Des Moines, Iowa
Dubuque, Iowa