

# [Bruksanvisningar] - 13

Mejerimaskin-aktiebolaget  
Excelsior

*Vardagstryck Affärstryck*  
*1800-tal 8:o*



National Library  
of Sweden



# "Extra" Cream Separator

**A**

will skim 36 Imp. gallons  
per hour (= 160 liter).

**B**

will skim 72 Imp. gallons  
per hour (= 325 liter).

**Aktiebolaget Maskinfabriken Excelsior**

(THE EXCELSIOR MACHINE Co.)

STOCKHOLM ◦ SWEDEN.



"E

A



## DIRECTIONS

FOR THE USE OF

# "EXTRA" CREAM SEPARATORS

MADE BY

Maskinfabriken EXCELSIOR

(THE EXCELSIOR MACHINE Co. Ltd.)

**A** will skim 36 Imp. gallons per hour (= 160 liter).

**B** will skim 72 Imp. gallons per hour (= 325 liter).

"EXTRA" CREAM SEPARATORS  
ARE ESPECIALLY  
NOTED FOR THEIR GREAT  
STABILITY  
AND  
EXCELLENT SKIMMING.

"EXTRA" CREAM SEPARATORS  
HAVE BEEN IN USE  
SINCE 1892.  
OVER 3,000 HAVE BEEN SOLD.



AT THE GREAT OFFICIAL  
SEPARATOR TEST  
AT MOSCOW, RUSSIA, IN 1895,  
THESE CREAM SEPARATORS  
WERE AWARDED  
THE FIRST PRIZE:  
GOLD MEDAL,  
IN PREFERENCE TO NINE  
DIFFERENT  
CONSTRUCTIONS.

Manufactured and sold by

Aktiebolaget Maskinfabriken Excelsior

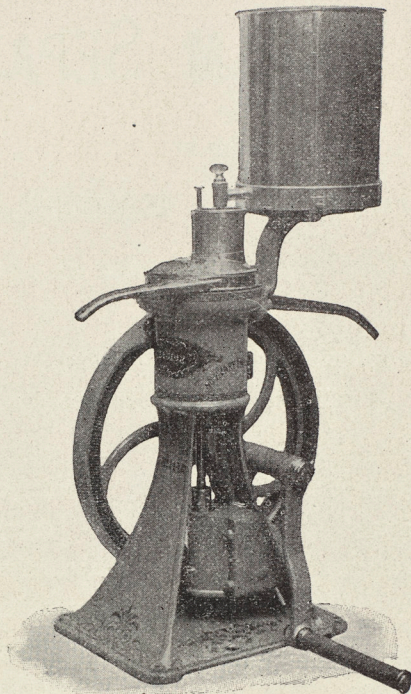
(THE EXCELSIOR MACHINE Co. Ltd.)

STOCKHOLM, SWEDEN.





The Patented  
**"Extra" Cream Separator A**  
*for hand-power.*



If the milk has a temperature of 90° Fahrenheit and the crank is given 50 turns per minute, this separator will clean-skim 160 liter or  
**36 Imp. gallons of milk per hour.**

**Weight:** *net* 163 Lbs. (74 kilos), *brutto* 230 Lbs. (104 kilos),  
packed in *one* box with a capacity of 8½ kub. feet (¼ kub. met).

"Extra" Separators are commonly recognized as the *strongest*  
and *most reliable* cream-separators in existence.

They are manufactured only by

**Aktiebolaget Maskinfabriken Excelsior**

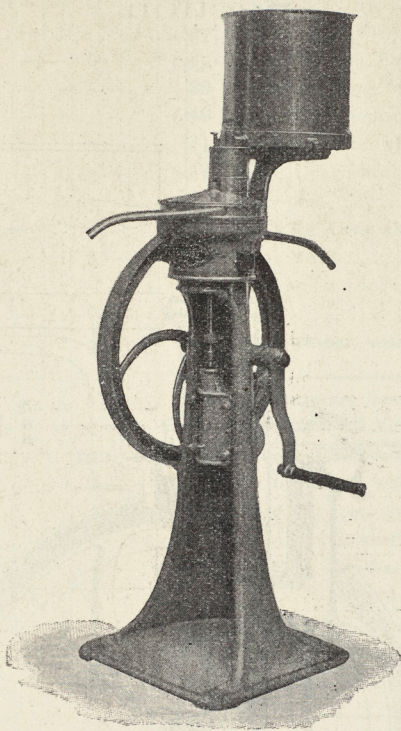
(THE EXCELSIOR MACHINE CO., LIMITED)

**STOCKHOLM, SWEDEN.**



A

The Patented  
"Extra" Cream Separator B  
*for hand-power.*



and the crank  
160 liter or  
".  
(104 kilos)  
4 kub. met.)  
the strongest

If the milk has a temperature of 90° Fahrenheit and the crank is given 45 turns per minute, this separator will clean-skim 320 liter or

**72 Imp. gallons per hour.**

**Weight:** *net* 340 Lbs. (154 kilos); *brutto* 475 Lbs. (216 kilos), packed in *one* box with a capacity of 23½ cub. feet = ⅔ cub. met.

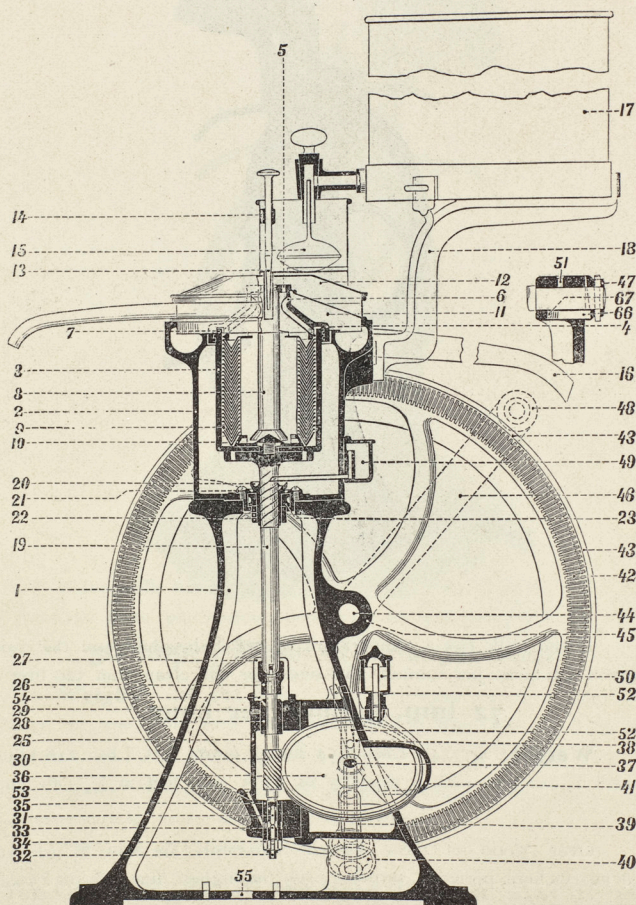
Over 3,000 of these Cream Separators are now in use, and have everywhere perfectly satisfied even the highest demands on a really good and strong Cream Separator.

Analyses proving that they only leave from 0.10 to 0.16 per cent. of fat in the skim-milk will be supplied on application.



# Extra Separator A.

## Section.



| No. |         |
|-----|---------|
| 1   | *Stand  |
| 2   | *Barrel |
| 3   | *Bowl   |
| 4   | *Bowl   |
| 5   | Cream   |
| 6   | *Skim-  |
| 7   | Rubb    |
| 8   | *Disc-l |
| 9   | Discs   |
| 10  | *Conic  |
| 11  | Recei   |
| 12  | Cover   |
| 13  | Regu    |
| 14  | Rubb    |
| 15  | Float   |
| 16  | Skim    |
| 17  | Milk    |
| 18  | Supp    |
| 19  | *Bowl   |
| 20  | Neck    |
| 21  | Was     |
| 22  | Nut     |
| 23  | Rub     |
| 24  | Supp    |
| 25  | *Cov    |
| 26  | Bow     |
| 27  | Cap     |
| 28  | Upp     |
| 29  | Set     |
| 30  | Top     |
| 31  | Top     |
| 32  |         |
| 33  |         |
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| 63  | I       |
| 64  | I       |
| 65  | 2       |
| 66  | I       |
| 67  | I       |



# Names of Parts for the "Extra" Cream Separator with Prices.

The parts marked with an \* are only supplied when put in place at the Works.

See numbers below.

| No. | NAME                        | A |    |    | B |    |    | No. | NAME                        | A |    |    | B |    |    |
|-----|-----------------------------|---|----|----|---|----|----|-----|-----------------------------|---|----|----|---|----|----|
|     |                             | £ | s. | d. | £ | s. | d. |     |                             | £ | s. | d. | £ | s. | d. |
| 1   | *Stand .....                | 1 | 13 | 6  | 3 | 7  | —  | 32  | Bottom-pivot, with nut and  |   |    |    |   |    |    |
| 2   | *Barrel .....               | — | 12 | 3  | — | 14 | 6  |     | point.....                  | — | 1  | 8  | — | 1  | 8  |
| 3   | *Bowl .....                 | 5 | 12 | —  | 8 | 7  | —  | 33  | Bottom-pivot Point.....     | — | —  | 6  | — | —  | 6  |
| 4   | *Bowl-top .....             | 2 | —  | —  | 3 | 7  | —  | 34  | Bottom-pivot Nut .....      | — | —  | 3  | — | —  | 3  |
| 5   | Cream-screw .....           | — | 7  | —  | — | 7  | —  | 35  | Lower Bushing .....         | — | 2  | 3  | — | 2  | 3  |
| 6   | *Skim-milk Tube .....       | — | —  | —  | — | —  | —  | 36  | Worm-wheel with Taper-      |   |    |    |   |    |    |
| 7   | Rubber-ring for Bowl top    | — | 6  | —  | — | 7  | —  |     | pin .....                   | — | 11 | —  | — | 11 | —  |
| 8   | *Disc-holder .....          | — | 8  | —  | — | 11 | —  | 37  | Worm-wheel shaft .....      | — | 1  | 5  | — | 1  | 8  |
| 9   | Discs, each .....           | — | —  | 6  | — | —  | 8  | 38  | Upper Bushing for do.....   | — | 2  | —  | — | 2  | —  |
| 10  | *Conical Bottom of Bowl     | — | —  | —  | — | —  | —  | 39  | Lower Bushing for do ...    | — | 2  | 10 | — | 4  | 3  |
| 11  | Receiver for Cream .....    | — | 6  | 2  | — | 9  | 6  | 40  | Pinion with taper-pin ...   | — | 5  | 6  | — | 7  | 3  |
| 12  | Cover for do. with Re-      |   |    |    |   |    |    | 41  | Hood for Worm-wheel, in A   | — | 1  | 2  | — | —  | —  |
|     | gulator-cup .....           | — | 6  | 3  | — | 9  | 6  | 42  | Large Gear-wheel with ta-   |   |    |    |   |    |    |
| 13  | Regulator-pin .....         | — | 7  | —  | — | 7  | —  |     | per-pin ..                  | — | 1  | 3  | 6 | 1  | 10 |
| 14  | Rubber-ring for do.....     | — | 2  | —  | — | 3  | —  | 43  | Hood for Gear-wheel.....    | — | 5  | 6  | — | 8  | 6  |
| 15  | Float .....                 | — | 1  | 8  | — | 1  | 8  | 44  | Crank shaft .....           | — | 3  | 4  | — | 3  | 10 |
| 16  | Skim-milk Spout.....        | — | 2  | —  | — | 2  | 3  | 45  | Bushing for do. in B only   | — | —  | —  | — | 1  | 8  |
| 17  | Milk-tank with Faucet ...   | — | 11 | —  | — | 13 | 6  | 46  | Crank .....                 | — | 2  | —  | — | 2  | —  |
| 18  | Support for Milk-tank.....  | — | 2  | 3  | — | 3  | 6  | 47  | Crank-washer with Taper-    |   |    |    |   |    |    |
| 19  | *Bowl-spindle .....         | — | —  | —  | — | —  | —  |     | pin .....                   | — | 1  | 8  | — | 1  | 8  |
| 20  | Neck-bearing .....          | — | 5  | 6  | — | 5  | 6  | 48  | Crank-handle, complete ...  | — | 2  | 3  | — | 2  | 3  |
| 21  | Washer for do. with screws  | — | —  | 10 | — | —  | 10 |     | Taper-pins, all kinds ..... | — | —  | 3  | — | —  | 3  |
| 22  | Nut for do .....            | — | —  | 10 | — | —  | 10 | 49  | Oil-cup for Neck-bearing    | — | 4  | —  | — | 4  | —  |
| 23  | Rubber ring for do .....    | — | —  | 6  | — | —  | 6  | 50  | Do. for Worm-wheel .....    | — | 4  | —  | — | 5  | 6  |
| 24  | Supporting Bearing (only    |   |    |    |   |    |    | 51  | Three Oil-holes for Crank   |   |    |    |   |    |    |
|     | in B.) .....                | — | —  | —  | — | 1  | 8  |     | and Crank shaft .....       | — | —  | —  | — | —  | —  |
| 25  | *Cover for the Bowl-spindle |   |    |    |   |    |    | 52  | Two do. for Worm-wheel      |   |    |    |   |    |    |
|     | Support .....               | — | 5  | 6  | — | 7  | 9  |     | shaft in A. only.....       | — | —  | —  | — | —  | —  |
| 26  | Bowl-spindle support .....  | — | 2  | 3  | — | 2  | 3  | 53  | One do. for Lower Bush-     |   |    |    |   |    |    |
| 27  | Cap for do. (only A).....   | — | 7  | —  | — | —  | —  |     | ing and Pivot-points ...    | — | —  | —  | — | —  | —  |
| 28  | Upper Bushing .....         | — | 2  | 6  | — | 4  | —  | 54  | Oil-groove on Upper Bus-    |   |    |    |   |    |    |
| 29  | Set-screw for Bushing ..    | — | —  | 3  | — | —  | 3  |     | hing .....                  | — | —  | —  | — | —  | —  |
| 30  | Top-pivot Screw.....        | — | 6  | 9  | — | 9  | —  | 55  | Hole for admitting Bowl-    |   |    |    |   |    |    |
| 31  | Top-pivot .....             | — | —  | 6  | — | —  | 6  |     | spindel (in A. only) ...    | — | —  | —  | — | —  | —  |

## The Following Extra Parts Accompany Every Separator.

|    |                            |   |   |   |   |   |   |    |                           |   |   |    |   |   |    |
|----|----------------------------|---|---|---|---|---|---|----|---------------------------|---|---|----|---|---|----|
| 56 | 1 Bowl-handle (in B).....  | — | — | — | 3 | 4 |   | 68 | 1 Rubber Ring for Bowl-   |   |   |    |   |   |    |
| 57 | 1 Bowl-holder with two     |   |   |   |   |   |   |    | cover .....               | — | — | 6  | — | — | 7  |
|    | Screws (in B.).....        | — | — | — | 1 | 8 |   | 69 | 1 Rubber Ring for Neck-   |   |   |    |   |   |    |
| 58 | 1 Spring-wrench .....      | — | 1 | 5 | — | 1 | 8 |    | bearing.....              | — | — | 6  | — | — | 6  |
| 59 | 1 Cream-screw Wrench ...   | — | — | 6 | — | — | 6 | 70 | 1 Rubber Ring for Reg-    |   |   |    |   |   |    |
| 60 | 1 Wrench for Neckbearing   |   |   |   |   |   |   |    | ulator-pin .....          | — | — | 2  | — | — | 3  |
|    | Nut .....                  | — | 2 | 3 | — | 2 | 3 | 71 | 1 Brush for Milk-tank ... | — | 1 | 8  | — | 1 | 8  |
| 61 | 1 Do. for Lower Pivot Nut  | — | 1 | 2 | — | 1 | 2 | 72 | 1 Brush for the Bowl..... | — | — | 6  | — | — | 6  |
| 62 | 1 Do. for Lower Pivot ...  | — | — | 7 | — | — | 7 | 73 | 1 „ „ the Spouts ...      | — | — | 3  | — | — | 3  |
| 63 | 1 Pin to drive out Points  | — | — | 6 | — | — | 6 | 74 | 1 „ „ „ Milk-tubes        | — | — | 2  | — | — | 2  |
| 64 | 1 Gauge f. Spindle-support | — | — | 7 | — | — | 7 | 75 | 1 Spirit-level .....      | — | 1 | 2  | — | 1 | 2  |
| 65 | 2 Pivot-points, each ..... | — | — | 6 | — | — | 6 | 76 | 1 Oil-can .....           | — | 1 | 2  | — | 1 | 2  |
| 66 | 1 Crank-pin in Reserve...  | — | — | 3 | — | — | 3 | 77 | 1 Can cont. 1 pint of oil | — | — | 10 | — | — | 10 |
| 67 | 1 Crank-pin Spring, res... | — | — | 6 | — | — | 6 | 78 | 4 Screws .....each        | — | — | 1  | — | — | 1  |

In ordering reserve parts, both number and name should be given.  
Reserve parts are only sold cash down or C. O. D.



**Directions for the use of**  
**The "Extra"**  
**Cream Separator A and B.**  
**For Hand-power.**

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**How to set up  
the machine.**

The "Extra" Separator A should be placed on a table no more than 24 inches high and securely fastened to the floor, and it should be screwed fast to this table by means of the screws accompanying it. Before these screws are tightened, care should be taken to see that the separator stands on a level. For this purpose, a spirit-level is placed in different positions on the flat upper edge of the stand. If the bubble does not stop at the middle of the glass, the fault is remedied by inserting thin wooden wedges near the bottom-screws. After the screws are tightened, the spirit-level should again be applied to see if the separator still stands on a perfect level.

Opposite the hole in the bottom-plate of the Separator A, a hole is bored in the table, through which to pass the bowl-spindle when the bowl is to be taken to pieces.

The "Extra" Separator B does not need any table, but is screwed fast to a wooden bottom securely fastened to the floor, and should be carefully levelled in same way as Separator A.



**Cleaning and putting together.**

Before use, the Separator should be cleaned and oiled thoroughly. This should be done in the following order. The bowl is lifted up and placed so that the spindle passes through the hole in the bottom-plate of the stand, and that the two bowl-securing pins in this plate fit into the corresponding holes in the bottom of the bowl.

In Separator **B** there is no such arrangement, but instead of it there is a loose bowl-holder which is fastened to a bench or the like by means of two screws which also accompany the machine.

For lifting the bowl of Separator **B** out of the stand the screw-threaded bowl-handle which accompanies the separator is screwed on the top of the bowl.

The accompanying spring-wrench is put around the lower edge of the bowl-top, and while pressing the bowl downwards with one hand, the bowl-top, which has a left-handed thread, is screwed off and lifted up.

The disc-holder, with the discs attached, is then lifted up, and the upper disc is turned so that its slots come opposite to the guides, when all the discs are lifted up.

All tin vessels, the bowl, disc-holder and discs, pipes and spouts, are cleaned with the brushes intended for this purpose in warm water containing a little soda, after which they are rinsed in warm water and dried. They should then be kept in a dry, airy place until the separator is to be used again.

If the numerical order of the discs is not changed during the cleaning-process, their replacing is rendered much easier.

When the separator is to be used again, the discs are replaced on the disc-holder one by one, in numerical order, beginning with No. 1, and care should be taken that no disc is omitted and that the slots in the discs catch the guide on one of the wings of the disc-holder. When the upper disc is put in place, the whole set of discs is pushed down until the slots of the upper disc enter the slots of the wings, after



which the upper disc is turned to the left as far as it will go, whereby the whole set of discs is locked to the disc-holder.

*It is especially important that the discs come in proper numerical order,* for otherwise the bowl will become unbalanced and wobble when set running, whereby the separator may easily be injured.

The disc-holder with the discs is inserted in its place in the bowl, and in so doing, *it is necessary to observe* that the guide on one of the wings comes opposite to the corresponding slot in the conical bottom of the bowl.

*Care should be taken that the milk-tubes in the top of the bowl and the hole in the cream-screw are perfectly clean.*

The rubber-ring should be dipped in tepid water and then laid in the groove in the upper edge of the bowl, after which the top of the bowl is screwed on by means of the spring-wrench as far as it will go.

If the top of the bowl is not screwed on tight enough, the bowl will be unbalanced.

The stand should be well cleaned.

The upper part of the bowl-spindle should be oiled around the spiral groove, and a few drops of oil applied in the oil-groove of the neck-bearing, and the bowl-spindle support cleaned, after which the bowl is carefully put in its place, all jar being strictly avoided, and the bowl given a couple of turns with the hand, so as to ascertain that the slot in the lower end of the bowl-spindle grasps the pin in the top of the bowl-spindle support.

Then the cream-receiver is attached to the stand, which receiver can be so turned that the cream-spout will come wherever desired. On the top of the cream-receiver the lid with the attached regulator-cup should then be pressed down, but this lid must be placed so that when the float is put in the regulator-cup its point properly enters the mouth of the milk-faucet before the milk-tank is screwed fast in its place on the support.

Last of all, the skim-milk spout is pressed on to the nozzle on the side of the barrel.



**Oiling.** The two oil-cups are filled with oil *until it stands above the lubricating-tubes* after the wicks are put in the pipes; each wick is inserted so that the end of the brass wire to which the wick is fastened is passed down into the lubricating-tube as far as it will go, while the other part of the wick remains in the oil.

The space around the pivots is filled with oil through oil-hole No. 53, after which a few drops of oil should be put in each of the other oil-holes marked with red and arrows. Oil should also be filled into the oil-groove around the upper bushing on the cover for the bowl-spindle support.

In "Extra" Separator **A** there are in all two oil-cups, six oil-holes, and one oil-groove in the cover for the bowl-spindle support.

In "Extra" Separator **B** there are two oil-cups, four oil-holes, and the oil-groove in the cover for the bowl-spindle support.

*It is of great importance that none of the oiling-places should be overlooked,* and that oil-cups, lubricating-tubes, and oil-holes are kept perfectly clean.

Only *good, pure,* and not too thick oil, should be used. Special Separator Oil is kept in stock both by us and our agents.

**Skimming.** The milk-tank should be filled with milk of a temperature of about 90° Fahrenheit. Colder milk should not be used, as the separator will not skim clean if the temperature of the milk is below this degree. It is best to skim the milk immediately after milking.

If the bowl is very cold, it should be warmed up by rinsing with hot water.

(In order to make first-class butter which can be kept a long time, the cream should be thoroughly chilled immediately after skimming. Coolers of our own make and most suitable for this purpose are always kept in stock by us and our agents.)

The separator is started by slowly turning the crank, and the speed is gradually increased until the crank makes



*fifty* (50) turns per minute for **A** and *forty-five* (45) turns per minute for **B**.

In order to become used to keeping up this speed, it is a good plan in the beginning to hold a watch in the hand and count the turns per minute while watching the second-hand.

When the full speed is reached, the milk is let in by opening the faucet.

The "Extra" Separators are adjusted at the Works to turn out 15 per cent. of cream, but if thinner or thicker cream is wished, this change can be accomplished by means of the creamscrew. If the screw is turned so that the hole is moved somewhat nearer the centre of the bowl, less but thicker cream is obtained. The thickness of the cream can even be changed during the run by raising or lowering the regulator-pin. If it is lowered, the cream will be thicker.

If the separator is stopped while unskimmed milk is still left in the milk-tank, the milk-faucet must be closed.

After the unskimmed milk has nearly left the milk-tank, four or five quarts of skimmilk should be fed through the separator in order to remove all remaining cream from the bowl. When the skimmilk has also passed through the separator, *the crank should be let go and the separator should be left to stop of its own accord.*

The tin vessels may not be removed until the separator has stopped.

**After using.** The tin vessels are removed and the bowl is taken apart and cleaned as before described.

The wicks should be taken out of the oil-cups. The stand should not be washed with water but wiped carefully with a dry rag.

Care should be taken that no milk or oil remains around the rubber-rings for they will soon be injured thereby.

All loose parts should be kept in an airy, dry place.





## Keeping the separator in repair.

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The few parts of the "Extra" Separator which are exposed to wear are always kept in stock by the manufacturer and the chief agents.

In ordering reserve parts, both name and number should be given in accordance with the list given on page 5, as mistakes will thereby be avoided.

We generally send reserve parts by post, and always C. O. D. if the order is not accompanied by remittance.

All parts which are *not* marked with an \* in the specification can easily be replaced by any person used to the machine, but the greatest care and accuracy must be observed in putting in the new parts.

If the separator runs unevenly or shakes, see if it is in plumb or not, or if any of the bottom-screws have worked loose. If neither of these faults exist, examine the rubber ring of the neck-bearing; if this is faultless, see if the bushings, pivot-points, or bearings are so worn that they need to be exchanged for new ones. If the separator is properly used and taken care of, it will not be necessary to exchange any of the parts until after a very long time.

*The neck-bearing* with its rubber ring is taken out in the following manner: — Unscrew the nuts (22), unscrew the washer for the neck-bearing (21) and lift up the neck-bearing, when the rubber ring adheres, and both can easily be exchanged. When the neck-bearing is again inserted, the nuts may not be set harder than that the rubber ring acts as a spring after the bowl is inserted.



*The top-pivot (31).* In order to exchange this, the cover, which is secured by means of four screws, must be removed, and the set-screw (29) of the upper bushing is loosened, and the bushing itself (28) is driven up with a suitable piece of wood, after which the top-pivot screw (30) is lifted up.

The worn-out pivot-point is driven out with the drift pin (63), and the new one is driven in by a few strokes with a piece of wood.

If the *upper bushing (28)* is worn out, the bowl-spindle support (26), which is only loosely secured, is removed by striking against the upper edge of the cap of said support with a piece of wood. The set-screw (29) for the upper bushing is loosened and the bushing is driven up with a piece of wood, then the new bushing is driven in carefully until the depression in the bushing for the set-screw comes opposite the set-screw hole, the set-screw is screwed in, and the bowl-spindle support is pressed down in its place, after which the cap for said support is again screwed fast.

The *lower bushing (35)* is exchanged in the same manner, only that in this case the top-pivot screw (30) is also removed, after which the stop-nut (34) is loosened and the bottom-pivot (32) is unscrewed, then the bushing is driven up in the same manner as the upper bushing.

When the new bushing is driven down into place, the top-pivot screw is inserted, and the parts are put together as has been said above in regard to the exchange of the upper bushing. If the *bottom-pivot point* is also to be exchanged, it is driven out with the drift-pin 63, and a new one is driven in its place.

The *bottom-pivot* is now screwed in, but before the stop-nut is tightened, it is necessary carefully to ascertain that the bowl comes to its proper height, i. e. that the bottom-pivot is screwed in far enough. In order to verify this, the plate gauge (64) which accompanies the machine is placed so that it hangs directly over the bowl-spindle support with its legs downward, then the bottom-pivot is screwed out or in, so that the top-pivot screw together with the bowl-spindle support is



raised or lowered until both the legs of the gauge touch the flat edge of the upper bushing simultaneously. When this takes place, the stop-nut (34) should be tightened.

In order to exchange the *bottom-pivot point* alone, it is clear that only the stop-nut needs to be loosened and the bottom-pivot to be screwed out, the point is exchanged, the bottom-pivot is again screwed into place, and the height of the bowl-spindle support is verified as aforesaid, after which the stop-nut is tightened.

In screwing fast the cap of the bowl spindle support, it must be ascertained that the cogs of the worm-wheel mesh perfectly with the thread of the worm of the bowl-spindle support, so that the cap presses evenly, before its fasteningscrews are tightened.

The *pivot-points*, which bear on each other, are gradually worn, whereby the bowl sinks. It is therefore necessary occasionally to ascertain the height of the bowl-spindle support and regulate it by means of raising the bottom pivot. When the points are so worn that the height can no longer be regulated in this manner, they must be exchanged for new ones.

If the *worm-wheel*, its shaft, or bushings, need to be exchanged, the cap and protecting hoods are removed, after which the taper-pin on the worm-wheel is driven out, and the shaft together with the pinion attached to it are removed, when the worm-wheel is left loose. If the *pinion* is damaged, the taper-pin which fastens it to the shaft is driven out, the old pinion is taken out, and the new one is inserted. If the *bushings* are to be exchanged, it is done in the same manner described for the exchange of the upper and lower bushings. In putting together, the bushings are first driven into place, the worm-wheel is held in place with the one hand, while the shaft with its attached pinion is passed into the hub from outside with the other hand until the holes for the taper-pin are opposite each other, after which the taper-pin is driven in.

*In driving in the taper-pins, it must be remembered that both taper-pins and the holes in the shafts, wheel, pinion, and crank-washer are conical, i. e. larger at one end than at the other, wherefore it is of the very greatest importance that the*



taper-pins are driven in from the right direction. The *taper-pins* should be pressed in with the fingers to almost their whole length, after which they are fastened in place with a light blow of a hammer.

The *crank* is supplied with a ratchet, and consequently the separator can only be run in one direction, and when the handle is let go, it immediately stops. If it is necessary to remove the crank from the shaft or the shaft from the stand, for the purpose of exchanging parts, it should take place in the following manner: — The protecting-hood around the main gear-wheel is screwed loose, after which the taper-pin in the crank-washer is driven out, and the crank-washer loosened by putting a suitable piece of brass or wood against the end of the shaft and giving it a hard blow. After the crank has been removed, the shaft together with the gear-wheel is drawn out. The gear-wheel is fastened to the shaft with a taper-pin and is removed in the same way as described before.

In putting together again, the gear-wheel is first fastened on to the shaft, which is then passed into its bushing, after which the crank is put on its other end, the crank-pin spring and then the crank-pin are placed in their hole in the crank-arm, the crank-washer put on, and its taper-pin driven in.

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If the separator should run too heavy, the reason is that the oil has become gummed. This can be remedied without taking the machine to pieces by pouring petroleum into all the oil-holes while the machine is running.

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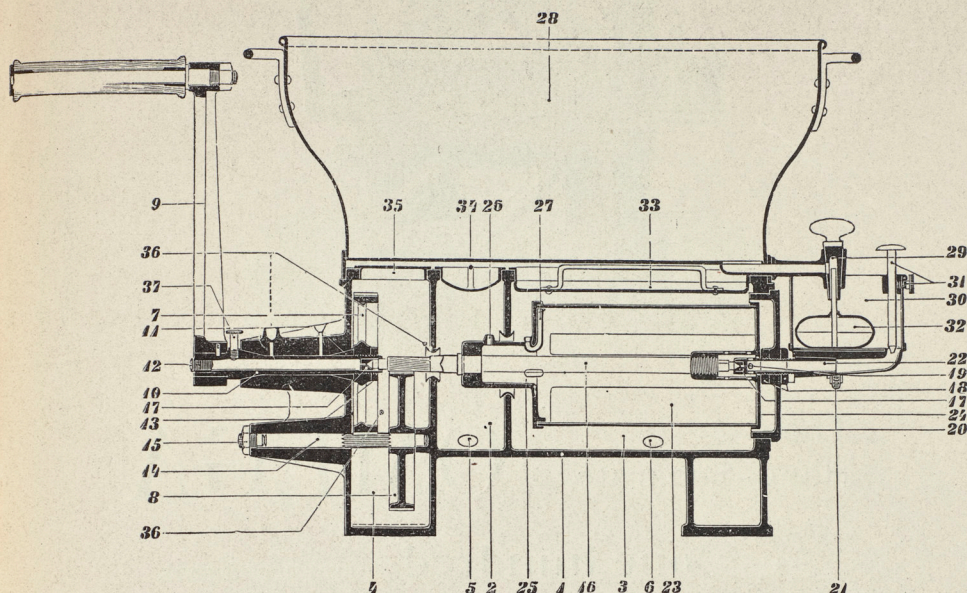
All *tools* for the machine should be kept in a place easy of access, and *should not be used for any other purpose.*



Stockholm, printed by P. Palmquists Aktiebolag, 1899.



Section of  
The "OMEGA" Hand-Separator.



DESCRIPTION.

- |        |                        |         |                        |
|--------|------------------------|---------|------------------------|
| No. 1. | Stand.                 | No. 19. | Automatic lubrication. |
| " 2.   | Cream-chamber          | " 22.   | Milk-inlet.            |
| " 3.   | Skim-milk chamber.     | " 23.   | Bowl.                  |
| " 4.   | Gearing-chamber.       | " 26.   | Creamregulator screw.  |
| " 7.   | Iron cog-wheel.        | " 28.   | Milk-tank.             |
| " 8.   | Metal cog-wheel.       | " 30.   | Regulator-cup.         |
| " 14.  | Lower axle and pinion. | " 31.   | Regulator-pin.         |
| " 16.  | Bowl-spindle.          | " 32.   | Float.                 |
| " 17.  | Shaft-bearing.         |         |                        |

The following things accompany each separator:—

1 spirit-level, 3 wrenches, 1 oil-can, 1 can with 1 pint of oil, 4 brushes, 1 memorandum tablet and a descriptive pamphlet with directions for setting up and managing the separator, 1 reserve shaft-bearing.

*Reserve parts are always kept in stock.*

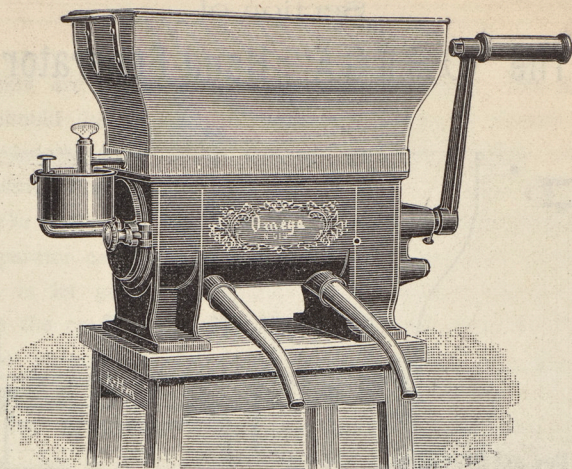
**Aktiebolaget Maskinfabriken EXCELSIOR.**  
STOCKHOLM.

CENTRALPALATSET.



Telegraphic address: EXCELSIOR.





# The Hand-Separator **OMEGA**

Skims **one hundred** litres per hour.  
(= 22 Imp. gallons)

*Net weight 28 kgr. Weight when packed 40 kgr.*

## *Advantages:*

Simple construction.

No disks in the bowl.

Very easy to run.

The least cost for repairs.

Will work in almost any position.

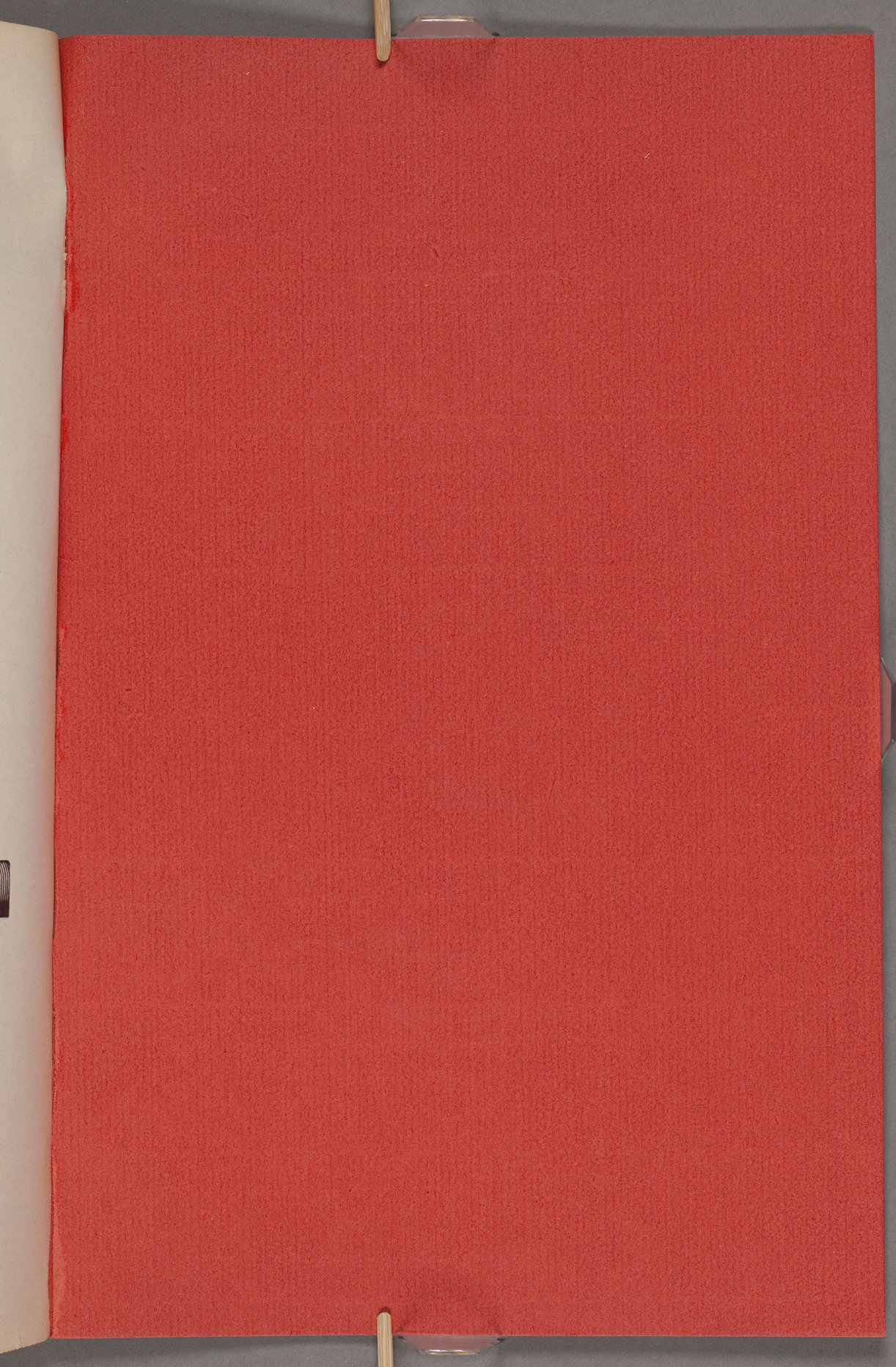
Easy to transport.

Very cheap.

*The thickness of the cream can be changed while the separator is running.*









*To purchasers of our hand-separators, we recommend the following special machines and appliances:*

**HORIZONTAL HAND-CHURNS** of oak-wood.

|         |         |    |                |                               |        |       |   |         |        |     |      |
|---------|---------|----|----------------|-------------------------------|--------|-------|---|---------|--------|-----|------|
| No. 31, | holding | 16 | imp. gallons à | 4 <sup>1</sup> / <sub>2</sub> | liter, | price | £ | 3.12.0. | Weight | 97  | lbs. |
| » 32,   | »       | 24 | »              | »                             | »      | »     | £ | 4.3.6.  | »      | 126 | »    |
| » 33,   | »       | 33 | »              | »                             | »      | »     | £ | 5.5.6.  | »      | 163 | »    |

**HOUSEHOLD CHURNS** of tin.

Holding 3<sup>1</sup>/<sub>2</sub> imp. gallons, price £ 0.18.0. Weight 21 lbs.

**CIRCULAR MILK-COOLERS** of tinned copper.

|         |       |     |              |    |       |       |   |         |        |    |      |
|---------|-------|-----|--------------|----|-------|-------|---|---------|--------|----|------|
| No. 00, | cools | 22  | imp. gallons | pr | hour, | price | £ | 3.0.0.  | Weight | 24 | lbs. |
| » 0,    | »     | 40  | »            | »  | »     | »     | £ | 3.12.0. | »      | 29 | »    |
| » 1,    | »     | 66  | »            | »  | »     | »     | £ | 4.9.0.  | »      | 35 | »    |
| » 2,    | »     | 110 | »            | »  | »     | »     | £ | 6.2.0.  | »      | 57 | »    |

**CIRCULAR CREAM COOLERS.**

No. 0, cools 22 imp. gallons pr hour. Price £ 2.15.6. Weight 22 lbs.

**BUTTER-WORKING MACHINES** for hand.

|       |                |         |       |        |            |       |           |        |          |
|-------|----------------|---------|-------|--------|------------|-------|-----------|--------|----------|
| No. 1 | Diam. of table | 28 in., | works | 9 lbs. | at a time. | Price | £ 4.0.0.  | Weight | 132 lbs. |
| » 2   | »              | 36 »    | »     | 19 »   | »          | »     | £ 4.15.0. | »      | 220 »    |

**BUTTER-WORKING BOARDS** of beach-wood.

Price without tub £ 0.13.0. Weight 18 lbs.

**BUTTER-PRESSES** of beach-wood with box-wood die.

For one and two lbs. each, price £ 1.0.0. Weight 18 lbs.

**BOXES FOR TRANSPORTING** butter, with ice-chest.

For pressed butter. Price £ 1.2.3.

*Besides cheese-presses, milk-pumps, and all kinds of larger machinery for dairy-farming on a large scale.*

**Aktiebolaget Maskinfabriken Excelsior**

(THE EXCELSIOR MACHINE Co.)

STOCKHOLM & SWEDEN.