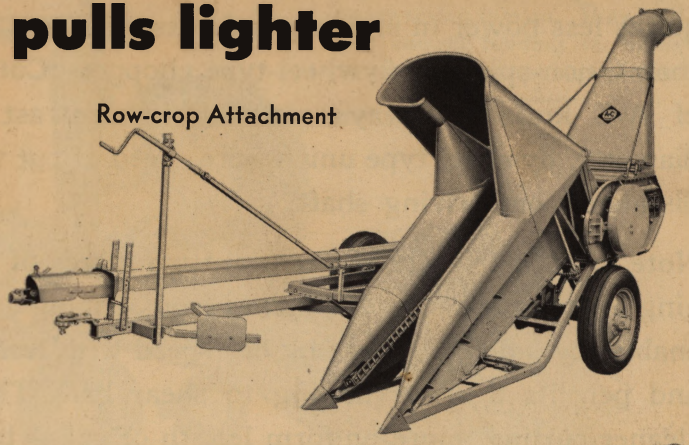
WHY

The ALLIS-CHALMERS FORAGE HARVESTER

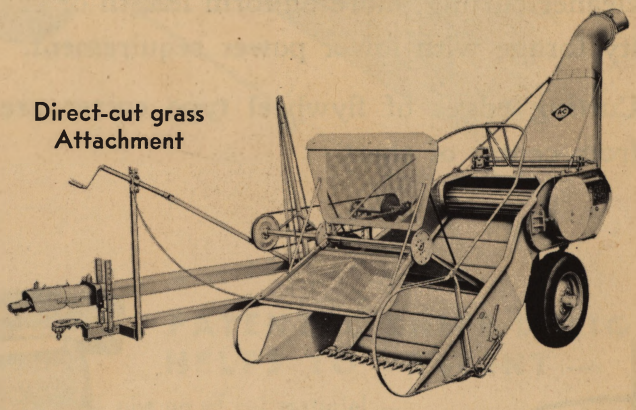
does more work • • • pulls lighter

Many things play their part in enabling the new A-C FORAGE HARVESTER to do MORE WORK with LESS POWER and FUEL. Probably the most important among them are the very different and more efficient chopping cylinder and feed rolls built into this machine.

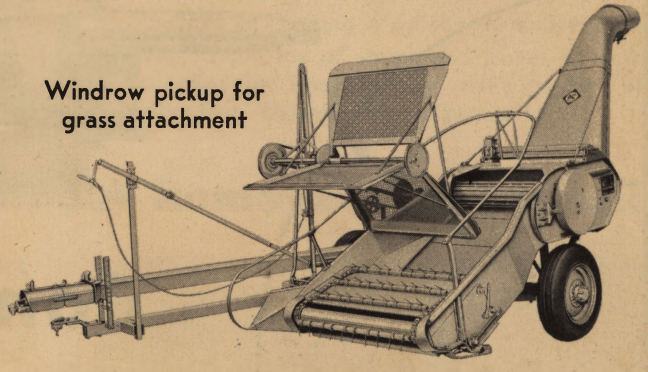
Let us see HOW these units are designed and built, and WHY they help the A-C FORAGE HARVESTER outperform all others, pull lighter in the field, and require less power and fuel.



Row-crop Attachment

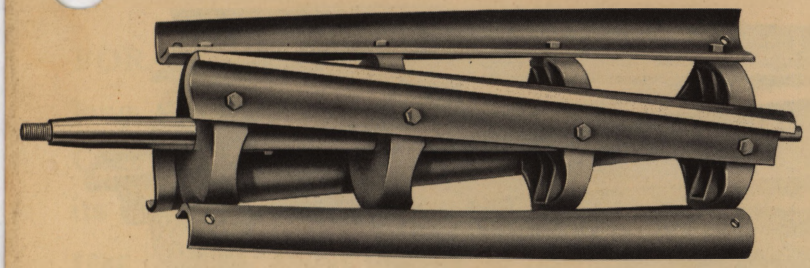


Direct-cut grass Attachment



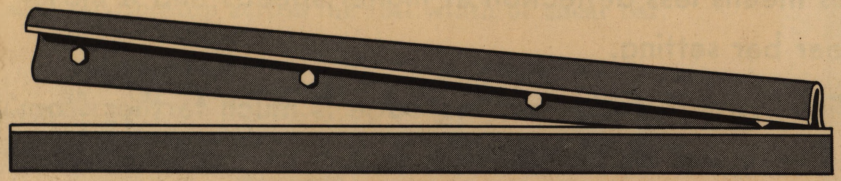
Windrow pickup for grass attachment

CHOPPING CYLINDER

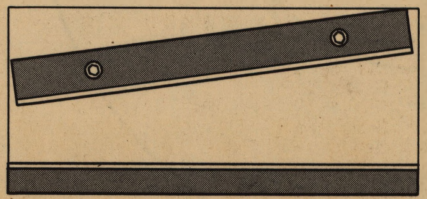


Easy-shearing, cut-and-throw action distinguishes the A-C FORAGE HARVESTER from all other machines. The chopping cylinder is wider — full three foot. As a result, incoming material is fed and chopped in a thinner, wider stream. There is less danger of slugging — less power is needed — and length of cut is more uniform. Most machines, flywheel or cylinder type, have a feeding throat only half as wide or less.

COMPARE Chopping Width!

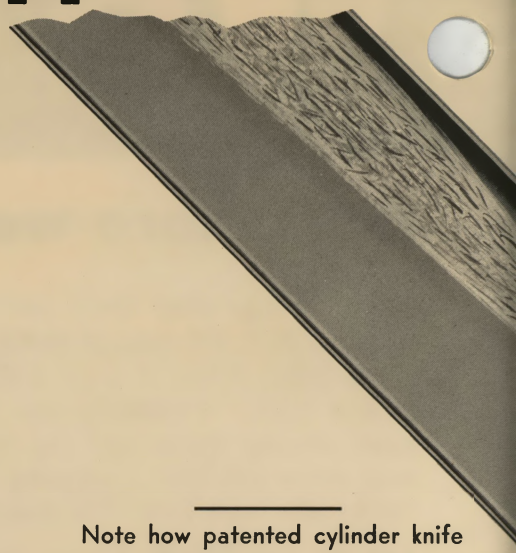


A-C FORAGE HARVESTER
Full three-foot wide cylinder and shear bar — wider cut means thinner flow of material — less slugging.



ORDINARY MACHINE
Only 1½ foot wide, or less.

Long, Curve-Shaped, Cupped Knives

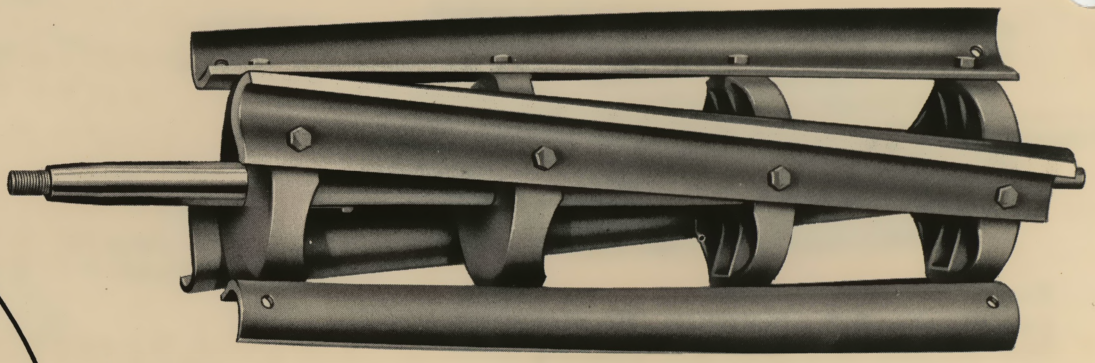


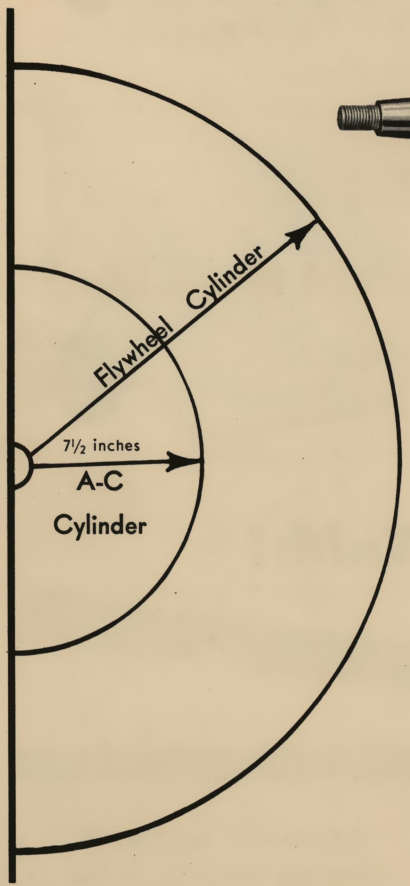
Note how patented cylinder knife design "throws" instead of "blows" chopped forage up the delivery chute. Greatly reduces the separation of stems and leaves in wagon or truck.

FORAGE HARVESTER chopping cylinder knives are spiraled, giving an almost continuous shearing action across the full width of cut. In addition, the spiraled cylinder requires less power in starting and cuts with less shock-load than a non-spiraled, flywheel-type chopper. Cutting speed of A-C knife is always constant in contrast to large-diameter, flywheel type unit where speed of cut varies with distance from driving shaft.

Note in the sketch below that cutting edges of A-C chopping cylinder are only 7½ inches from driving shaft — this enables cylinder to run at higher speed with less deflection and permits a closer setting to shear bar. This assures cleaner cutting, more uniform length of cut — better quality forage with lower power requirement.

Cutting edges of flywheel type cutter are much farther from center of shaft.





Compare!

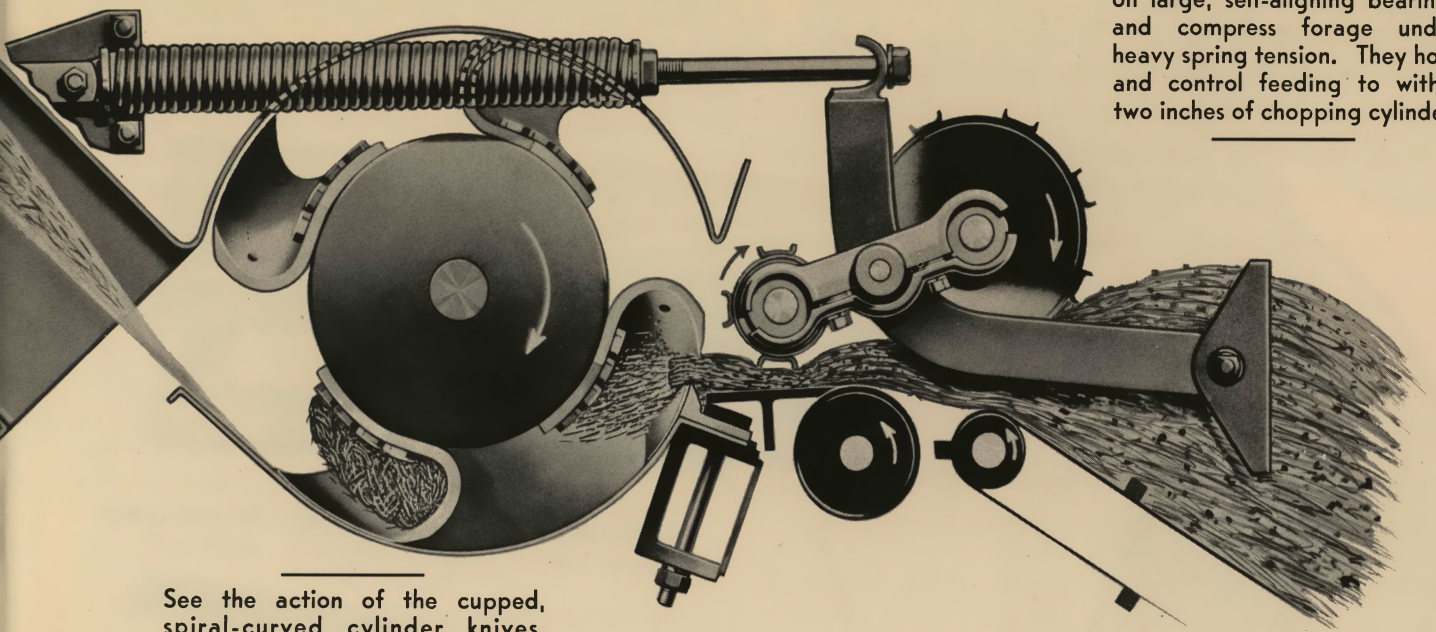
Cutting edge of A-C cylinder only 7½" from center line of shaft.

This means less deflection at higher speeds and a closer shear bar setting.

With flywheel design cutting edge is much farther from center line of shaft.

As a result, you get cleaner cutting — more uniform length of cut — better quality forage with less power.

• • • • exclusive ALLIS-CHALMERS patented design



Upper feed rolls are mounted on large, self-aligning bearings and compress forage under heavy spring tension. They hold and control feeding to within two inches of chopping cylinder.

See the action of the cupped, spiral-curved cylinder knives. They chop and deliver forage more uniformly with lower power requirement.

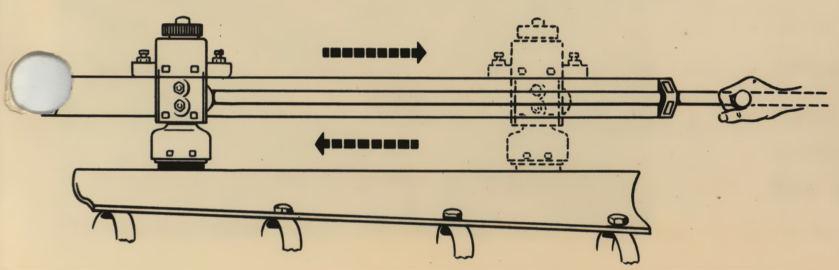
FORAGE HARVESTER knives are cupped with a long, spiral-curved shape. This is an exclusive Allis-Chalmers patented design. Each knife cuts and carries its own slice of forage and throws it up and out the rear delivery spout in a rapid flowing, steady stream.

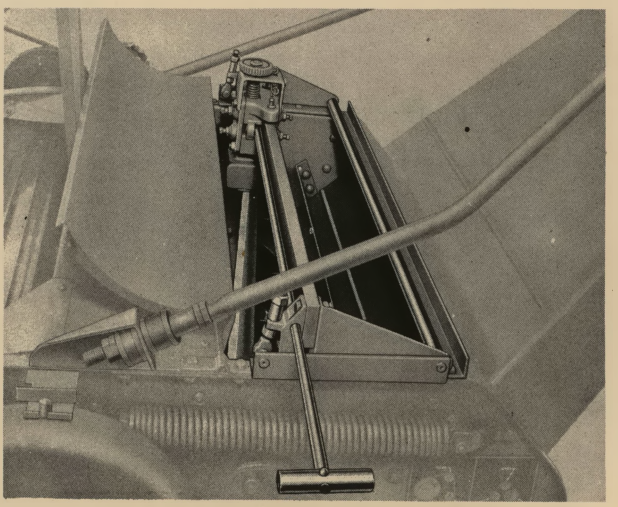
A-C PATENTED KNIFE DESIGNS HELPS TO PREVENT —

a) pile up of cut material —
b) bunching or slugging in cylinder or delivery spout—
c) usual separation of stems and leaves in wagon — so noticeable where dry or wilted hay is "blown" instead of "thrown" into wagon or truck.

Knives Are Power-Sharpened Without Removal From Machine

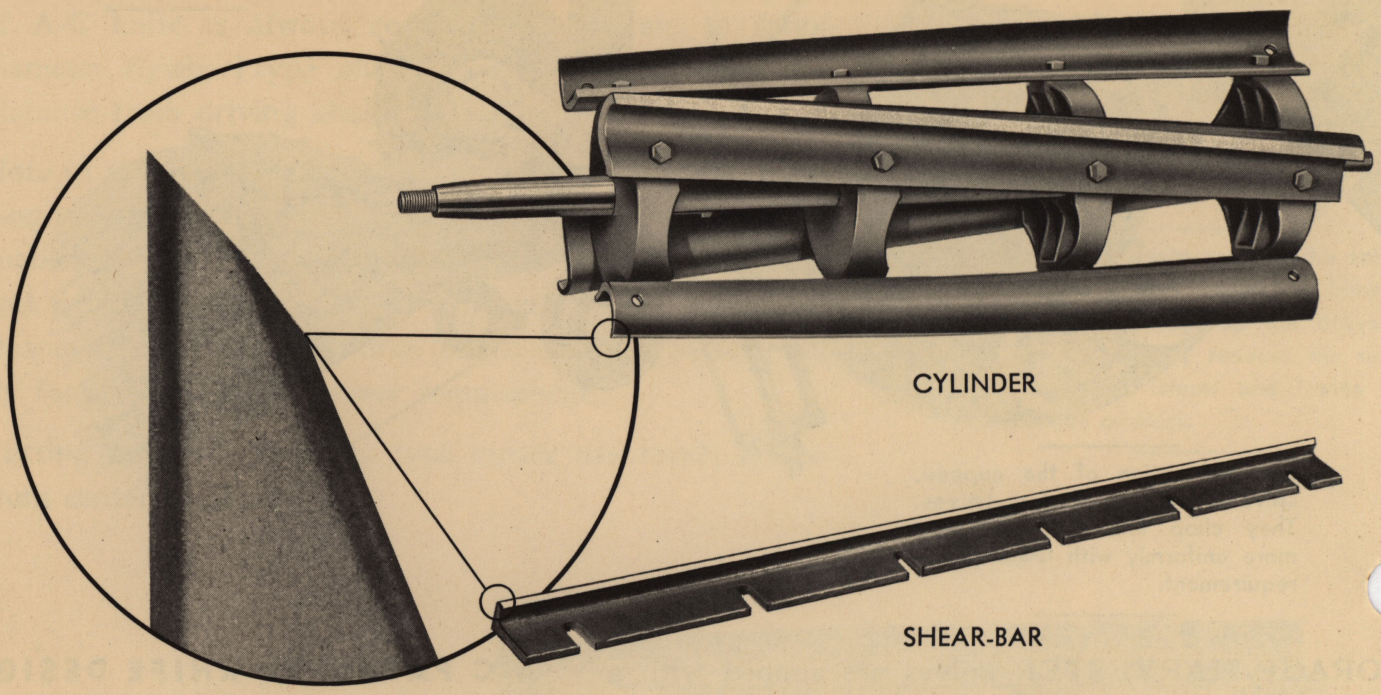
A built-in Knife Sharpener is standard equipment and is part of the harvester base machine. It is located above the cylinder and includes a mounted carborundum stone which is moved across the full width of the revolving cylinder by means of a hand rod. Accurate, screw-wheel adjustment places a keen cutting edge on all four knives at the same time, assuring parallel relationship across the full width of shear bar.





FOR LONG-LIVED, KEEN-CUTTING EDGES
knives and shear bar are carbo-nitrite hardened

Forage Harvester knives and shear bar are made of selected, close-grain steel, specially hardened over entire surface by a carbo-nitriting process to a depth of 20 thousandths of an inch. Cutting edges always have two layers of this specially hardened surface, separated by center layer of more ductile, unhardened metal—reduces danger of chipping and stone damage. Because entire knife surface is carbo-nitrite hardened the special bolts used to hold knives to cylinder heads require less tightening, and hold a "set" better when securely tightened.

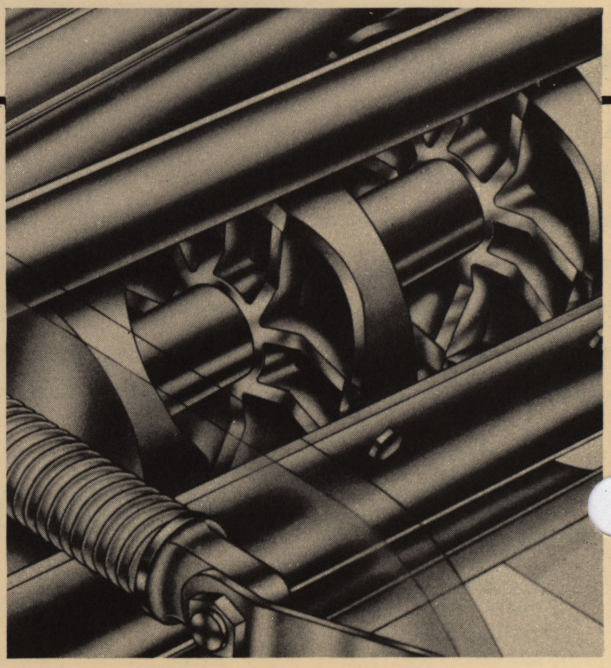


Enlarged photo of cutting edge (magnified 25 times) see depth of carbo-nitrite hardened cutting edges with more ductile steel in center. Maintains keen-cutting edge longer for cleaner, easier cutting.

Engineered
FOR SMOOTH RUNNING PERFORMANCE

The chopping cylinder is heavily built — weighs 200 lbs. Knives are balanced and securely bolted to four heavy, reinforced steel heads. It rotates on self-aligning roller bearings with adjustable mountings for accurate setting of clearance between knives and shear bar.

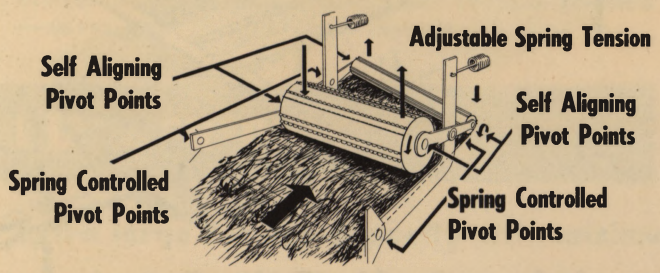
An over-running clutch in the cylinder drive keeps cylinder revolving after power is shut off. This cleans out the machine — eases shock loads in starting and stopping and protects the entire power line.



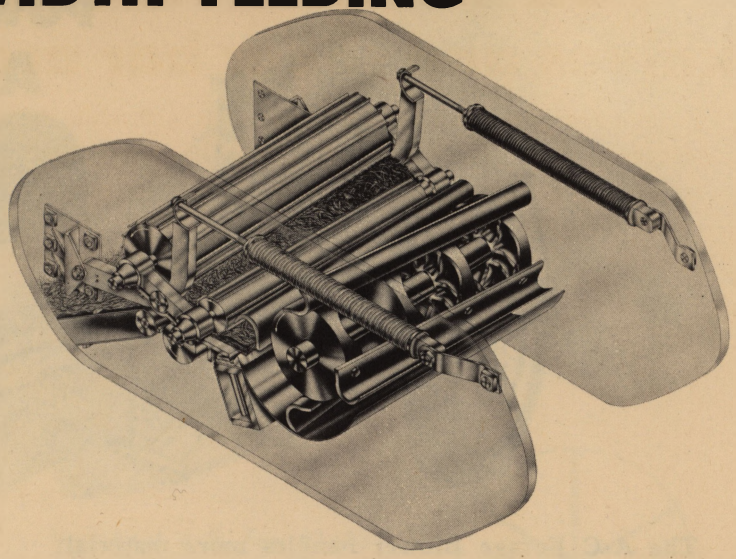
CONTROLLED, FULL-WIDTH FEEDING

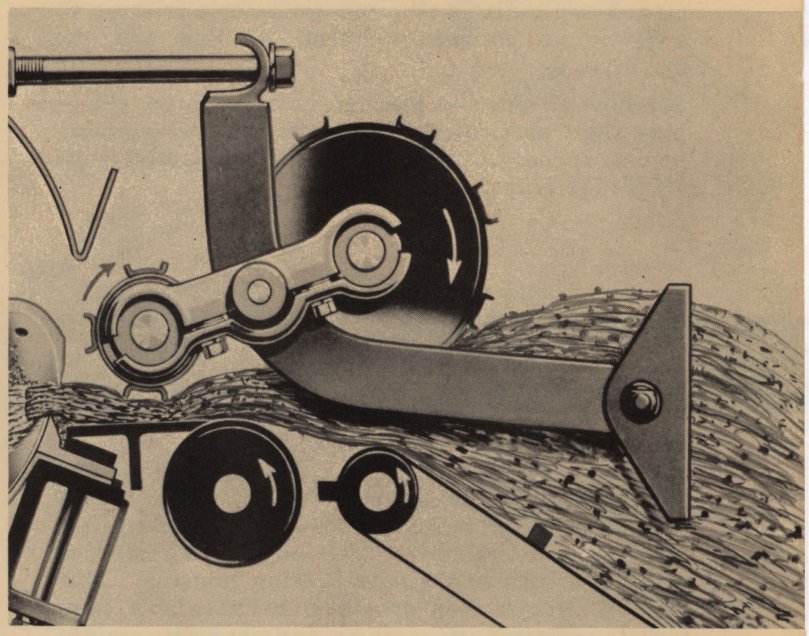
FEED ROLLS

Upper feed rolls are full three-feet wide, and fluted to firmly grip the incoming material and regulate its flow to the chopping cylinder. They act under heavy spring tension, combing and thinning the wide stream of forage as it is fed to the cylinder — almost like hand feeding.



Incoming Material is Thinned Out—Compressed and Controlled within 2 in. of Shear Bar Across FULL width of Rolls

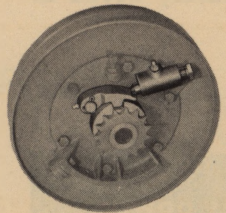




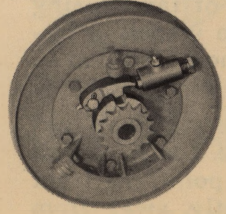
Upper feed rolls pivot on two points at each end and run on large, self-aligning bearings. Pressure on the forage is equalized across the full 36 inch width of the feeding throat. Rolls raise and lower independently of each other as they accommodate the varying mass of materials entering the machine. They compress and hold forage to within two inches of the shear bar, assuring steady, more uniform feeding for faster cutting, less slugging, better control of length of cut.

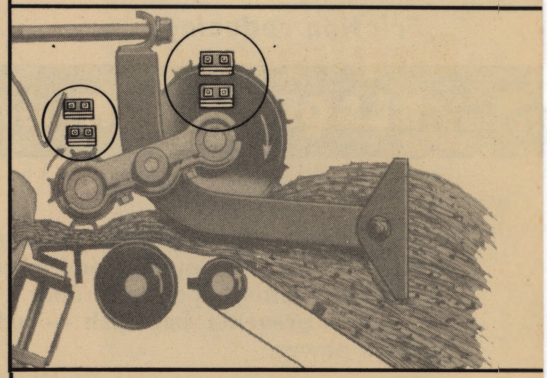
"STONE-STOPPER" CONTROLS ON FEED ROLLS

Upper feed rolls keep large stones, roots, etc., from entering the machine and damaging cylinder. Adjustable stops permit feed rolls to raise only to a pre-set height (one inch for grass — two inches for corn). When a large object is carried up and wedged under the feed rolls, a special safety clutch instantly disengages and stops feed rolls and conveyor drive, stopping the entrance of all forage, along with rock or stump, into the machine; foreign object is then removed, safety clutch is re-engaged and work continues. This important feature protects the knives and entire machine from damage.



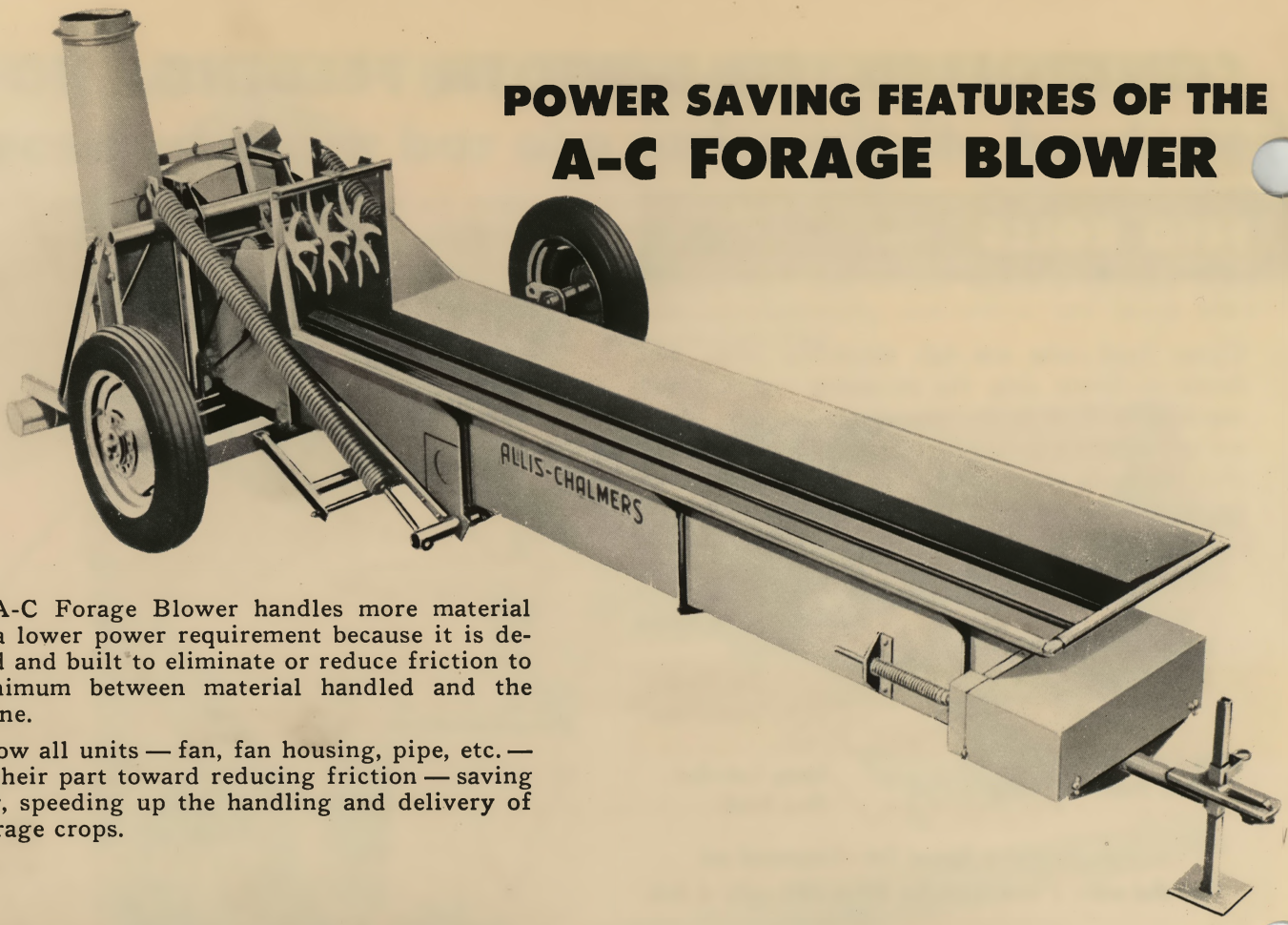
Showing feed roll clutch engaged (above) . . . and released (below).





Above — Sketch showing location of stops above feed rolls . . . adjustable to two positions.

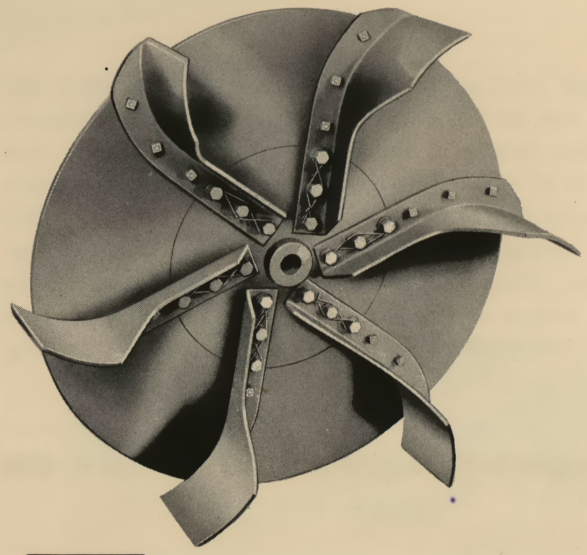
POWER SAVING FEATURES OF THE A-C FORAGE BLOWER



The A-C Forage Blower handles more material with a lower power requirement because it is designed and built to eliminate or reduce friction to a minimum between material handled and the machine.

See how all units — fan, fan housing, pipe, etc. — play their part toward reducing friction — saving power, speeding up the handling and delivery of all forage crops.

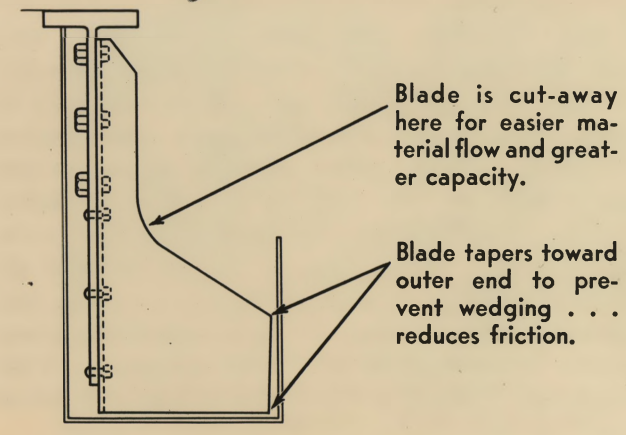
BLOWER FAN



Forage Blower fan unit includes six curved blades of special design bolted to heavy, boiler-plate steel head, and mounted on two adjustable, tapered roller bearings in a single bearing housing. This type of construction provides an unbeatable combination of strength, rigidity, and necessary weight to insure constant delivery speed. The complete unit is carefully balanced and securely keyed to a large-diameter shaft.

Friction reducing

BLADE DESIGN *saves power*



Each fan blade is cut-away around the center of shaft and widens out beyond edge of fan housing opening. This "opens the door" to incoming material — prevents backlash — reduces friction — saves power.

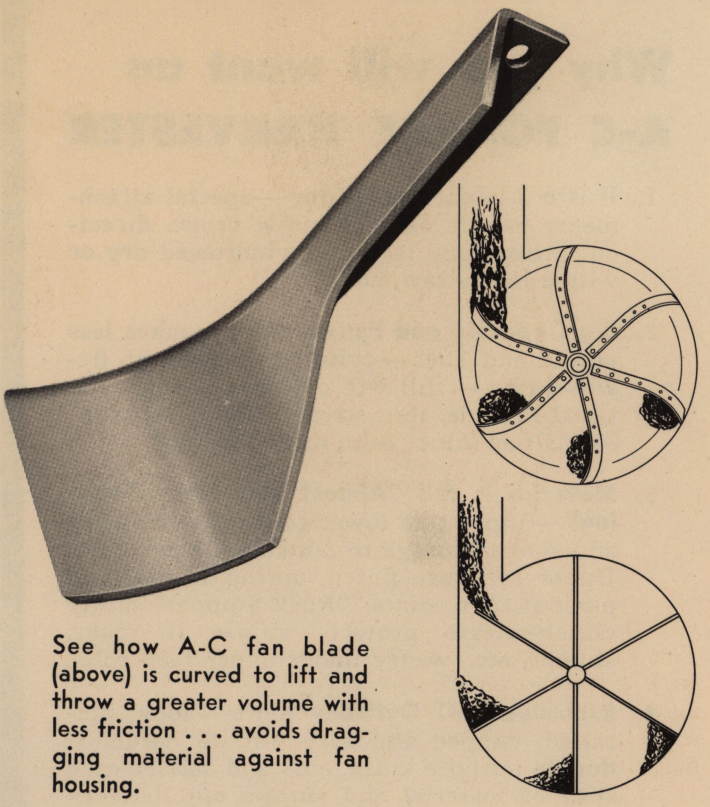
Blades are widest just beyond the cut-away section where the front, or outer edge, comes closest to front of fan housing. From this point, the front edge of blade tapers inward slightly, away from

fan housing. This relieves any tendency of material to "wedge" between blade and housing — reduces friction — saves power.

Each blade is secured to large-diameter, circular steel back-plate by 6 bolts. Back plate extends almost to tip of blades. In operation, the rotating back plate keeps forage away from rear fan housing — reducing friction — saving power.

Fan blades are cup-curved so that in combination with the air-blast the material is "thrown" as well as "blown" straight up the blower pipe. This increases lifting capacity of the blower, reduces friction and wear on blower housing and saves power. Where a straight blade tends to deflect and drag material against outer wrapper sheet, the A-C curved blade tends to "lift" and "throw."

Like the cupped cylinder knives in the Forage Harvester, the design of the Forage Blower fan blades is another A-C feature that reduces friction — saves power — increases capacity.



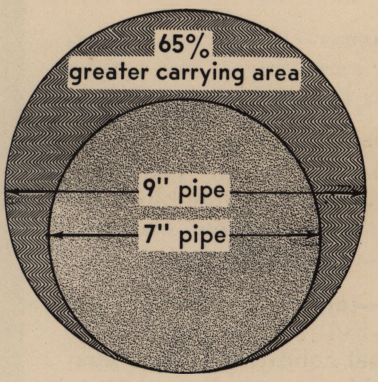
See how A-C fan blade (above) is curved to lift and throw a greater volume with less friction . . . avoids dragging material against fan housing.

BLOWER PIPE

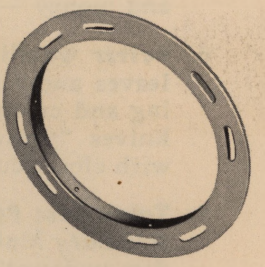
Extra large for top capacity with minimum of pipe friction

One of the important reasons for the outstanding performance of the Forage Blower is the use of nine inch (9″) blower pipe. This gives the unit 65% greater inside carrying area than the seven inch pipe used on some blowers. That means less pipe friction and far more capacity in all kinds of grass or corn silage, and dry forages. Its advantage is especially appreciated in hard-to-handle chopped, wilted hay of 35% to 45% moisture content put up for mow curing.

Slotted holes in pipe connecting rings make lining up the pipe a simple, quick job. A wide variety of pipe equipment is available for every need, including blower and distributor pipe sections in various lengths, flexible elbows, solid elbows, etc., to meet any silo or barn filling requirement.



Larger pipe increases capacity—saves power.

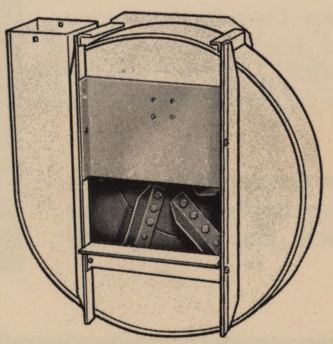


All pipe and elbows have slotted holes for easy assembly.

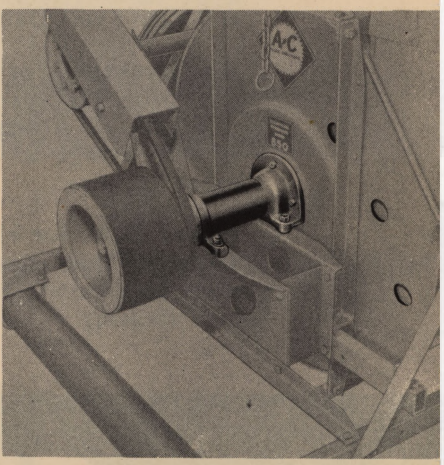
BLOWER HOUSING

Fan housing has an adjustable air control shield to regulate proper amount of air intake to type and quantity of material being handled. Three convenient openings are provided in rear of fan housing to permit inserting a wrench when necessary to remove individual fan blades.

Blower fan and drive pulley are mounted on opposite ends of a shaft which is carried on tapered roller bearings mounted in a solid one-piece casting. This type of construction adds strength and rigidity to moving parts and reduces danger of deflection at high fan speeds.



Air control shield adjusts air volume to material and power.



Solid, one-piece casting carries fan and drive pulley bearings . . . note three openings for easy fan blade removal.

Why you will want an A-C FORAGE HARVESTER

1. **It is a 3-in-one Harvester** — special attachments handle corn and row crops, direct-cut grasses and legumes, windrowed dry or wilted hay, straw, etc.

2. **Big Capacity and Pulls Lighter** — takes less power and fuel — cylinder instead of flywheel type — full 3-ft. cylinder handles material in wide, thin stream, *"twice as wide"* — *"half as thick"* as in most choppers.

3. **Material is fed "Almost Like Hand Feeding"** — upper and lower feed rolls comb out and control forage to 2 inches from knives. Upper rolls are fluted, spring loaded and pivot at four points. "Rock Stopper" safety clutch-release protects knives if rocks, stumps, etc., wedge under upper feed rolls.

4. **Exclusive A-C Cylinder Knife** — long, spiralled, cupped and carbo-nitrite hardened double purpose knife, *cuts and carries* each slice of material and *throws* out delivery spout. Uniform cutting speed, closer cutting tolerances and less starting power than with flywheel type.

5. **Built-in Knife Sharpener**—knives are power-sharpened without removing — saves time and money — means better forage.

6. **Better Quality Forage** — less separation of leaves and stems in wagon and less bruising and crushing because "double-purpose" knives "throw" instead of blow material, with closer cutting adjustment.

7. **Takes Less Power — either Tractor or A-C Auxiliary Motor** — Full 2-plow tractor handles under all normal conditions—A-C auxiliary motor available for smaller tractors or in very difficult field or crop conditions.

8. **Easy to Operate—Easy to Maintain** — simpler, lighter weight — fewer working parts and easier to adjust.

9. **All Advantages of Home Ownership**—more and better forage and feed crops — independence of adverse weather conditions — put up forage at the right time with no extra expense.

10. **Priced Right for Home Ownership** — an investment that pays big dividends in more meat and dairy products and more profitable farming.

The A-C FORAGE BLOWER is better because—

1. **It has Big Capacity — takes Less Power** — A-C design features reduce friction — prevent slugging — handles more forage with less power.

2. **Specially Designed 6-Blade Fan** — circular revolving back shield eliminates friction drag of material against rear fan housing — fan and pulley run on short shaft carried on twin tapered roller bearings in single, rigid bearing housing.

3. **Fan Wings are 3-Way Power Saver** — Cut-away at center to let material enter — front edge tapered back slightly from front fan housing to prevent wedging and "drag" —cupped, or curved, to "carry" and "throw" instead of dragging material against outer fan housing.

4. **An Adjustable Air Control Shield**—in front fan house opening regulates air intake to type and volume of material handled.

5. **Extra Long, Low, Wide Unloading Conveyor** — with simple, uniform feeding raddle conveyor — adjustable 3-unit retarder levels off material flow, prevents slugs — twin balance springs raise conveyor straight up to clear incoming wagons.

6. **9" Blower Pipe with 65% more Carrying Area** — Large 9″ diameter pipe has 65% more conveying area than the usual 7″ pipe found in some blowers — handles *all* forages better, green, dry or wilted. Slotted holes make easy set-ups without shifting.

7. **Easy and Convenient Transport** — large air tires — no wheel or tongue removal — just pin blower housing to conveyor in transport position, couple to tractor and start.

8. **Use Either Tractor or A-C Auxiliary Motor** — Most 1-2 plow tractors handle well — A-C auxiliary motor available if desired. Accessible controls from either side for greater operator safety.

9. **New Wagon Unloader Attachment** — permits unloading from either side — wide range other special equipment — elbows, pulleys, pipe lengths, as needed.

10. **A Big-Capacity, Quality Blower at a Right Price** — matched in capacity and performance to the A-C forage harvester — priced for home ownership.

ALLIS-CHALMERS

TRACTOR DIVISION • MILWAUKEE 1, U. S. A.

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