

I DIDN'T KNOW THAT!

by Ted Aschman

Auxiliary Model T Transmissions

6 SPEEDS FORWARD

Sliding Gear Transmissions for Ford Cars and Trucks~

Over-Drive, Direct and Under-Drive

*Adds Power—
Eliminates Vibration*

6 SPEEDS FORWARD 2 SPEEDS REVERSE

Reduces the Wear on the Car

**Doubles the Power
Increases the Speed**

Heavy Going Made Easy

Equip your Ford with—

Three Speed Sliding Gear Type

More Power

During the nineteen years that Ford produced the Model T, accessory manufacturers had a “field day. Carburetors, water pumps and exhaust systems made up just a few of the “after-market accessories. But perhaps the most desirable of the after-market accessories today is the Ruckstell two-speed rear axle, followed by the Muncie, Warford and Jumbo transmissions.

These four manufacturers didn't have the “field all to themselves. Conservatively speaking, at least thirty-one makes of auxiliary gear boxes were developed and marketed for the Model T. Some were designed after the standard “H shift transmissions found in other makes and some were fitted just ahead of or within the rear end. Many of these offered an overdrive and others, an underdrive, depending on whether one wanted speed or power. A few claimed that theirs had no “neutral, a neutral being a bug-a-boo of many of

the manufacturers (straight cut gears did not always allow a second chance when downshifting). In the end, some proved good and some didn't. Many appeared to be copies of some of the better ones, and were not successful. Most made their auxiliary transmission for both the T and the TT, usually charging a few more dollars for the latter. Except for one, all were priced under \$100.00. Even though this was quite a bit of money in those days, they were a popular way to get more from the Model T.

How many of these transmissions can you name? Most can think of four; a few five. Check your memory and knowledge on the following page.

How many were familiar to you? More than to this writer, I hope. While the list is fairly complete, there are, no doubt, more that could be added to this list. If you can add to this array, let us know.

AUXILIARY TRANSMISSIONS

The Rest of the Story

By Ted Aschman,
Fred Houston, and Jay Klehfoth

Auxiliary transmissions for the Model T first began appearing in about 1916. It was at this time that sliding gear/selective gear transmissions were introduced by other automobile manufacturers and were quickly accepted by consumers, owing to their ease of use and quietness.

Although Ford's two-speed planetary transmission had proven to be extremely dependable, many owners of Model Ts wanted more power to pull the heavier loads, increased speed, or both. These wants could be inexpensively satisfied by installing an auxiliary transmission that provided additional gearing ratios.

The popularity of the auxiliary transmission grew, and by 1927 there were at least 31 models available. Auxiliary transmissions can be divided into four categories based on the location of the installed unit. The "replacement transmission, as the name implies, was the sliding gear/selective gear unit that replaced Ford's planetary unit. The "front, mounted auxiliary transmission was mounted directly behind the Ford crankcase and typically worked in conjunction with the standard operation of the Model T planetary transmission. The third category of auxiliary transmission was "rear mounted and attached at the end of the driveshaft to the rear axle housing. The last category, the "multi-speed axle, placed the gear changing system inside the differential housing.

On the facing page is a table, sorted by category, identifying the known models available and providing key facts pertaining to each model. Also provided is a thumbnail sketch of each model and advertisements for the various units.

REPLACEMENT TRANSMISSIONS

Cronk Transmissions

This transmission was produced by E.D. & A.F. Cronk, Inc. of Utica, New York. The Cronk transmission was a "sliding gear transmission offering three forward speeds and one reverse speed. The low gear ratio was lower than the standard Ford low speed, the high gear was the same as the standard Ford gear ratio, and second gear was an

Makes of Auxiliary Transmissions

REPLACEMENT TRANSMISSIONS

- Cronk
- HIMICO
- Simplex
- Wright

FRONT MOUNTED TRANSMISSIONS

- Brooklyn
- Challenge
- Chicago Mark-E
- Conord
- Johnson
- Jumbo
- Jumbo Giant
- Mohawk
- Muncie
- Twin-High
- Warford
- Woodward

REAR MOUNTED TRANSMISSIONS

- Conord
- Fuller
- Fullford
- Jumbo Planator
- Langbein
- Lincoln Utili-TT
- Moore
- Rocky Mountain
- Universal
- Woodward

MULTI-SPEED AXLES

- Austin
- Gould Double Reduction
- Perfecto Two-Speed
- Ruckstell 2-Speed
- Van Dorn 2-Speed Constant Service

intermediate ratio halfway between high and low.

Cronk utilized the standard Ford multiple disk clutch and eliminated the transmission bands and drums. The brake was actuated by a contracting band on a large drum externally located at the rear of the transmission. Cronk advertised this feature as eliminating any lint or cotton strands from worn band linings clogging the oiling system; in addition, when it was necessary to replace the brake band lining, the transmission cover did not have to be removed.

Another advantage of the Cronk unit was that the transmission cover was fitted for the installation of the standard Ford starter motor, allowing owners of the earlier non-starter models to convert their vehicles to electric starters.

The Cronk transmission was later called the Cronk Simplex, and then - Simplex.

Cronk also produced a marine conversion unit for the Model T.

HIMICO Transmissions

Hinkley Motors, Inc., a Detroit engine remanufacturer, produced replacement transmissions for both cars and trucks. The HIMICO units came complete with engine/transmission pan, flywheel, and a three-speed sliding gear transmission for cars, and a four-speed model for trucks. A power-take-off unit was also available.

The HIMICO transmission, which used none of the Ford transmission parts, had a single plate/oil-bath clutch and a transmission (or gear) brake to stop gear rotation for use in shifting. An internal drum brake for stopping the vehicle was also included.

Simplex Transmissions

See Cronk Transmissions.

Wright Transmissions

The Wright-Morris Transmission Company of Cincinnati, Ohio, produced a three-speed selective sliding gear transmission with reverse. The unit had its own clutch mechanism and came with rear wheel external contracting brakes.

One of its claims to fame was its selection by Green Engineering of Dayton, Ohio, to be used in a number of Pop Green's race cars.

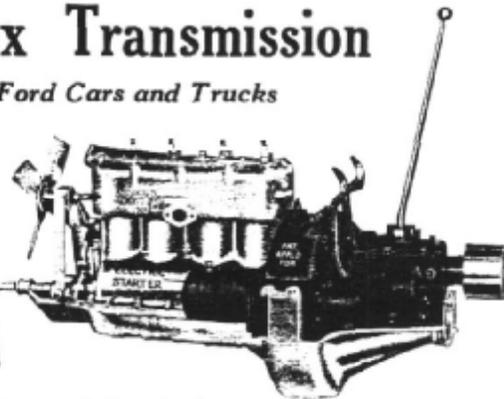
Simplex Transmission

For Ford Cars and Trucks

Three Speed Sliding Gear Type

More Power
26 to 1 in Low
In Our New Type
"CT"

It will pull like everything.



This transmission has three speeds forward and one reverse and replaces the regular Ford transmission, drums, bands and all. The low gear is lower than the Ford, therefore more power, third or high is the same as the Ford high and second is halfway between. It is ruggedly built with oversize alloy steel gears. Multiple disc clutch. Foot brake on jack. Installation easy. No cutting or machining. Write today for other interesting details.

E. D. & A. F. CRONK, INC.,

138 Hotel Street,
UTICA, N. Y.

HIMICO

Replacement Power Plant for FORD CARS & TRUCKS

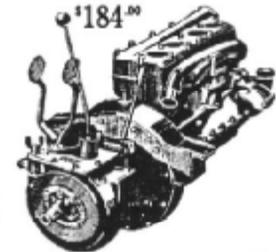
A complete replacement power plant for Ford cars and trucks which fits Ford Chassis without alteration. The unit complete includes

A re-manufactured Ford engine fitted with HIMICO Sliding Gear Transmission; Standard Gear Shift, Single Plate Clutch, Transmission Brake, adjustable from outside, High Velocity Cylinder Head, Hot Spot Manifold, Light Weight Pistons, Step Cut Rings, Universal Joint Improved Design Crank-case and Oil Pan, Foot Accelerator, assembled ready to install in Ford car or truck chassis.

The HIMICO power plant offers the following advantages to Ford users:

- More power with less gas — three speed standard shift operation for passenger cars — four speeds forward for trucks — elimination of transmission bands — no chattering — reduced vibration — freedom from broken engine supports — accessible adjustment of all main and connecting rod bearings — brake adjustable at floor line with simple turn of an accessible wing nut.

The HIMICO Transmission is sold separately as a unit of the following items. It fits on any standard starter type Ford cylinder block. *It is not an AUXILIARY transmission, but a genuine replacement.*



'184.00

'137.00
F.O.B.
Detroit.



Transmission, 3 Speed Sliding Gear Clutch, Single Plate, Running in Oil Gear Shift, Transmission Brake, Universal Joint Crank-case and Oil Tray, Accelerator Flywheel Machined to Receive Ford Magnets

For trucks we furnish an Auxiliary Low Speed (42-1 in low) Power Take-off, running at engine speed, also available.

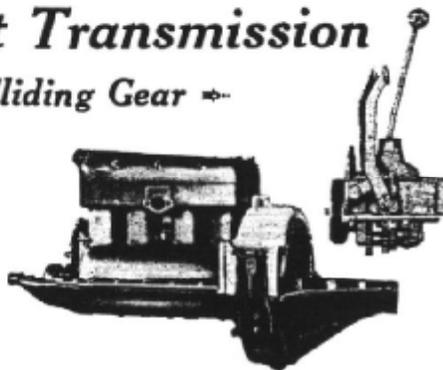
Dealers wanted for direct factory connection
HINKLEY MOTORS, INC.
Manufacturers of HINKLEY HEAVY DUTY ENGINES
P. O. Box 839, DETROIT, MICHIGAN.

A Wonderful Dealer Opportunity in the Wright Transmission

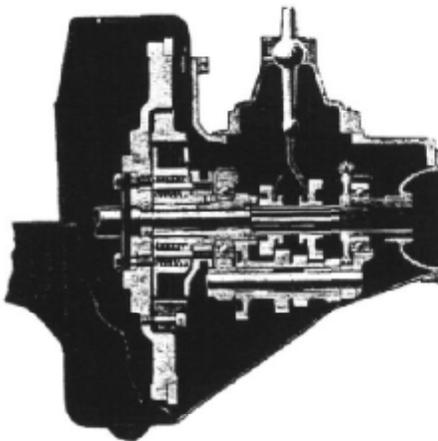
—♦ 3 Speed Sliding Gear ♦—

Makes the Ford a Gear Shift automobile with three speeds forward and one reverse. Also provides rear wheel brakes.

No alterations necessary when installing—just three holes to drill in fly wheel.



Gives More Power & Speed



Regardless of road conditions a Ford equipped with the Wright Three Speed Transmission will develop more power and speed—greater flexibility in heavy traffic—and give better all-around driving comfort and satisfaction.

No holding in low on hills. Go up twice as fast on intermediate.

Eliminates Transmission Bands

**Saves Wear on Engine, Rear Axle
and Tires**

No Noise in Starting or Backing

Highest Quality of Material & Workmanship

Write Today for Dealer's Proposition

Manufactured by

The Wright-Morris Transmission Co.

Court and Harriet Sts., CINCINNATI, OHIO

FRONT MOUNTED TRANSMISSIONS

Brooklyn Transmissions

The Brooklyn Manufacturing Co. of Cleveland, Ohio, manufactured transmissions for both cars and trucks. Both models were three-speed models of the selective sliding gear type with differing sets of gear ratios and a reverse gear.

Brooklyn used the standard Ford multi-disk clutch but suggested removing the Ford transmission bands. Given the transmission's reverse gear, this unit actually replaced the Ford transmission.

Brooklyn also recognized the danger in having a "free neutral" and included external rear hub brakes with the purchase of its transmission. A handle attached to the transmission actuated the standard emergency brake.

Challenge Transmissions

Challenge Transmission Corporation of Philadelphia built a three-speed selective sliding gear transmission with reverse. Challenge utilized the standard Ford clutch but suggested the removal of the transmission bands. A gear brake was also included.

The Challenge transmission had a large (60-square-inch) brake drum mounted externally at the rear of the transmission, using a contracting band which could easily be adjusted with a wing nut. The transmission also came equipped with a supporting cross-member that bolted to the frame to provide support and dampen vibrations.

Chicago Mark-E Transmissions

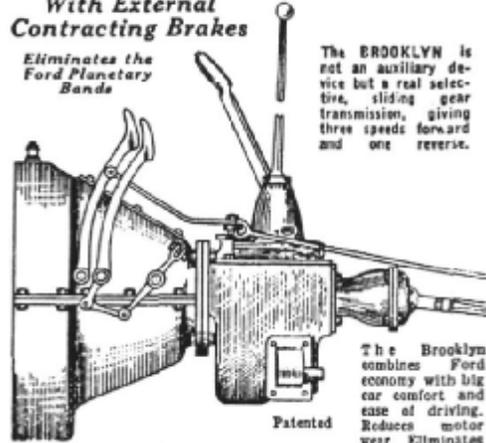
The Chicago Transmission Company of Bryan, Ohio, manufactured a three-speed (no reverse) sliding gear selective transmission specifically for the truck market. The transmission was designed to work in concert with the standard Ford transmission, providing six speeds forward and three speeds in reverse. This transmission had the emergency brake lever fastened to the transmission case and came with a support bracket that attached to either side of the frame. It could be purchased with either an underdrive or overdrive gear arrangement.

THE BROOKLYN Three Speed Sliding Gear Transmission

With External Contracting Brakes

Eliminates the Ford Planetary Bands

The BROOKLYN is not an auxiliary device but a real selective, sliding gear transmission, giving three speeds forward and one reverse.



The Brooklyn combines Ford economy with big car comfort and ease of driving. Reduces motor wear. Eliminates

necessity of overheating your motor by racing in low. Sales on Brooklyn units so far in 1923 exceed 1922 business by over 800%. Outfit includes real, external contracting brakes that makes driving absolutely safe in the hills, or mountains. Dealers wanted.

THE BROOKLYN MANUFACTURING COMPANY

7804 Carnegie Ave. (Offices and Factory) Cleveland, Ohio.

Pacific Coast Distributor: The Bierlein Syndicate, Ltd., 117-121 West Seventeenth Street, Los Angeles, Cal.

Minnesota—Wisconsin—North and South Dakota—Iowa—Robinson Motor Truck Co., 310 Second St., N., Minneapolis.

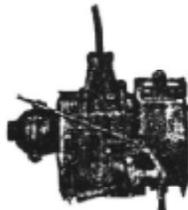
The Challenge Transmission for Ford Cars and Ford Trucks

A GREAT NECESSITY WITH GREATER ECONOMY

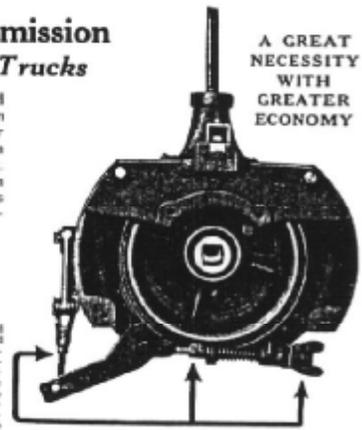
The CHALLENGE eliminates the bands and offers a clutch brake which idles the gears when necessary. Foot brake pedal controls the sixty inch service brake which is as effective when coasting in neutral, as when driving in gear. The CHALLENGE low gear is 50% lower than the Ford low. The CHALLENGE second is 50% more powerful than its high. The CHALLENGE is direct in high.

Adds Power—
Eliminates Vibration

The CHALLENGE is supported by a heavy cross member bolted to chassis which absorbs the torque load and eliminates the vibrations. A sensitive foot accelerator is also a part of the CHALLENGE make up. The CHALLENGE equipped Ford affords the same comfort and convenience in its service as can be enjoyed in any standard Ford shift car.



Each part of the sturdy CHALLENGE is strictly guaranteed.



Detailed view of the CHALLENGE 48-in. brake, showing adjusting points.

DEALERS: Write today for descriptive literature and liberal discounts.

Challenge Transmission Corporation
1018 Germantown Avenue Philadelphia, Pennsylvania.

**M
A
R
K
E**

THE MARK-E TRANSMISSION

*A Newer, Better, Stronger
More Compact Auxiliary*

FOR FORD TRUCKS AND CARS

Dealers: Here is an opportunity to increase the sale of Ford Trucks and Cars for Heavy Duty Service.

The Mark-E Transmission is a complete single unit sliding gear transmission — selective type — which when attached to the Standard Ford Transmission installation gives six speeds forward and three reverse, greatly expanding the utility of the Ford for heavy duty —

The Mark-E is the latest approved design. Can be installed by any Ford owner or Garageman with ordinary tools in few hours. Not necessary to alter Ford construction.

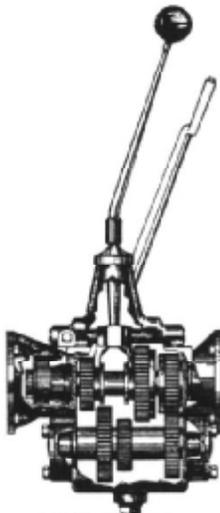
The Mark-E Transmission increases the field of Ford operation, giving the owner the following advantages:

Six forward speeds instead of only two. Increases the life of the Ford. Provides

double the power of the present Low, High and Reverse Speed. Gives the Ford greater road speed with greatly reduced engine speed. Acts as powerful brake going down hill. Increases one ton capacity to two ton. Provides tremendous reserve power in the underdrive ratio to pull out of mud holes, deep sands, and for hill climbing without the necessity of keeping foot on low pedal. Eliminates overheating when pull is heavy. Saves cost of frequent relinings of transmission bands.

Saves oil and gasoline and lessens vibration. Does not change present Ford construction; but gives an auxiliary for greater power, dependability and roadability.

Mark-E Improved Features



Attached Direct to
Planetary Transmission

Oil Tight
Super-strength Case
Six Speeds Forward,
Three Reverse
Extra Width Gear Face
Greater Number of
Teeth in Gears
Shorter Drive Shaft

Six Splines instead
of Four
Makes All the Power of
Ford Engine Available
Any owner or Garage
Man Can Install
More Compactly
Built

The Mark-E auxiliary Transmission provides driving advantages for the Ford similar to heavier cars. Easily installed without changing present construction.

Write, wire or phone for our proposition
Some good territory still open.

CHICAGO TRANSMISSION CO.

Sales Office—322 So. Michigan Ave., Chicago
Factory, Bryan Ohio

Conord Transmissions

The Conord transmission has an interesting history. Originally, the transmission was offered by the Broadway Tool & Machine Company of Elizabeth, New Jersey, as a rear mounted unit. From 1917 to 1920, the transmission was only offered in this rear mounted configuration and could be obtained with either an overdrive or underdrive.

The transmission, patented on June 17, 1917, was of the selective sliding gear variety with three gear ratios in forward and no reverse. The result, when combined with the standard Ford transmission, provided six forward speeds and three reverse.

In 1921, Partridge, Singer & Baldwin, Inc. acquired the company (or the rights to the transmission), and began offering the Conord as a front mounted unit. The advertisements referred to the same patent date on the front mounted unit; it is assumed that the transmission remained the same, but with a different case and shifting mechanism to accommodate the new position.

In late 1921, Partridge, Singer & Baldwin began advertising the transmission as a Warford. While the derivation of the Warford name is unknown, it possibly came from the Warren Gear Products Company [War(ren) - Ford], a well-known gear manufacturer that had been contracted by Partridge, Singer & Baldwin to produce its transmissions.

In 1923, Partridge, Singer & Baldwin, Inc. changed the name of the company to the Warford Corporation.

In 1925, Warford began offering a power-take-off as an option.

6 SPEEDS FORWARD

FOR ALL FORDS EQUIPPED WITH A CONORD 6 SPEED AUXILIARY TRANSMISSION

*Over and Under Drive,
Speed and Power*

*All Combined in One, a Gear
for Every Road and Load*

When Clutch C engages internal Clutch CA car. is in the regular Ford speeds.

When Gears O and OA are in mesh, the car is in the over drive.

When Gears U and UA are in mesh, the car is in the under drive.

Gears as shown are in the free neutral position.

Write for Descriptive Circular

Patented June 19, 1917

THE ABOVE CUT SHOWS THE CONORD GEARING. NOTE ITS SIMPLICITY

BROADWAY TOOL & MACHINE COMPANY, Inc.
717 LIVINGSTON STREET, ELIZABETH, N. J.

FOR ALL FORDS

Bad Roads Made Good
Good Roads Made Better

CONORD AUXILIARY TRANSMISSION

THE ONLY FORD Auxiliary Transmission combining OVERDRIVE (for speed) UNDERDRIVE (for power) in ONE UNIT. All for the price of one. Six speeds forward and three reverse. Positive neutral.

ATTACHED TO FORD TRANSMISSION

Patented in U. S. A. June 17, 1917

Patented in England and Canada

Does NOT Overload Rear Axle. Built of Best Materials. Fully Guaranteed.

Pleasure Cars.....\$100
Trucks\$110
(Plus War Tax)

LIVE DEALERS WANTED
Wire or Write for Proposition

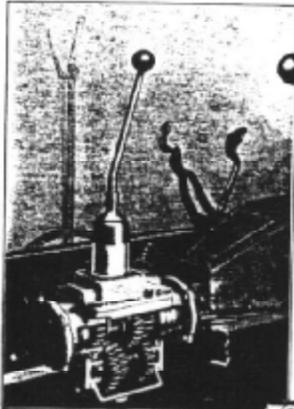
Partridge, Singer & Baldwin, Inc.
44 Whitehall St., NEW YORK

Selective
Type

Warford

Auxiliary Transmission

Six
Speeds



No hill or bad road can stop the Ford equipped with a Warford Transmission—and on level roads you can "hit it up" without racing the motor. It puts the Ford in a class by itself. It will out-perform anything else on the road. The Warford gives you a selective shift and six speeds forward—there's nothing else like it.

Warford is installed at the universal joint flange, without any change in standard Ford construction. You have the regular Ford pedals and standard Ford speeds always at your command.

For Any
Ford Car,
One-Ton Truck
OR CAR WITH
TRUCK
ATTACHMENT



Distributed by
Motor Specialties Co.,
Denver, Colo.
Cooper Sales Co.,
Chicago, Ill.
McGee-White Corp.,
Minneapolis, Minn.
Sieg Company,
Davenport, Iowa
Transmission Sales Co.,
Stockbridge, Mich.
Houshille-Pink Co.,
Dallas, Tex.
Auto Accessories Ass'n.,
Baltimore, Md.
Warford Pacific Co.,
San Francisco, Calif.
Ohio Never Fail Ty. Co.,
Cleveland, Ohio.
E. W. Jay,
Vancouver, B. C.
Alexander-Seward Co.,
Atlanta, Ga.
Price Auto Service Co.,
Wichita, Kans.



PARTRIDGE, SINGER & BALDWIN, Inc.
Dept. F. D. 44 Whitehall St., New York.

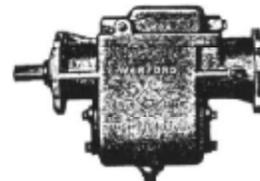
Built Right!
Roller Bearings
Nickel Steel
Gears
Precision Machining
Vanadium

Steel Shafts
Aluminum Housing
Oil Bath Lubrication
Positive Shift Lock

Warford

AUXILIARY TRANSMISSION

The Warford Transmission is attached in a few hours with no change in the Ford design or engineering.



Full 2-ton on board, or hardly any practical limit with trailers—

The low-priced, high grade, economical Ford truck will do it easily, when equipped with Warford Auxiliary Transmission. No truck built has a better transmission. Puts six speeds forward in the Ford; gives brute pull that can't be stopped by any grade, load or road. Gives intermediate speeds that let the Ford engine PLAY ordinarily. Gives OVERSPEED for fastest, easy, economical hauling on pavement. Makes the empty return run economical!

The savings in operation pay for Warford over and over—and think of the extra earnings of a 2-TON Ford! Thousands of owners KNOW.

Write for sure, sane, dealer proposition.
Put Ford dealers into the big 2-ton market.

The Warford Corporation, 44 Whitehall St., New York.

Johnson Transmissions

The Taylor Machine Company of Cleveland, Ohio, introduced its compact two-speed (no reverse) auxiliary transmission in 1926. The company offered two versions - one for cars and one for trucks.

Designed by Mr. J. P. Johnson, an automotive engineer, the transmission contained only seven parts and was only 6 3/8 inches in diameter and 6 1/2 inches long. The transmission worked in conjunction with the standard Ford transmission, providing four forward speeds and two reverse.

Jumbo Transmissions Jumbo Giant Transmissions

The Price-Hollister Company in Rockford, Illinois, began producing auxiliary transmissions for Model Ts in 1923.

The first model offered was the Jumbo Transmission of the selective sliding gear variety. The transmission had three forward gears and one reverse. Designed to work with the standard Ford transmission, the Jumbo provided seven speeds forward (double reverse gave the seventh forward speed) and up to five speeds in reverse. A handle attached to the transmission actuated the standard emergency brake. Both car and truck versions were offered.

In 1924, the Jumbo Giant was introduced. This unit was principally a heavy-duty version of the Jumbo and was directed toward the truck market.

Price-Hollister introduced a rear mounted planetary transmission in 1926. See "Rear Mounted Transmissions" for a description of this unit.

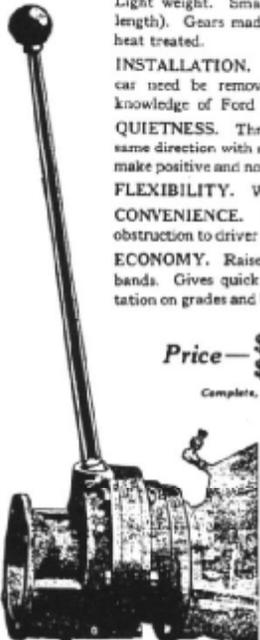
Mohawk Transmissions

Did Rockford, Illinois, boast of having two auxiliary transmission manufacturers? In addition to Price-Hollister and its Jumbo brand, The Mohawk Corporation of Rockford, Illinois, is also shown as marketing a selective sliding gear transmission with three forward speeds and one reverse. Depending on whether the standard Ford transmission was utilized, the Mohawk could provide as many as seven forward speeds and up to five reverse speeds. The authors know little about this model, but it bore a strong resemblance to one of Price-Hollister's Jumbo models. It may, in fact, have been a Jumbo model that was marketed as a private brand under the Mohawk name.

JOHNSON

Internal Gear Six Speed TRANSMISSION FOR FORDS

Patent Pending.



SIMPLICITY. Only seven major parts. Minimum wear. Light weight. Small dimensions (only 6½ inches overall length). Gears made of highest grade alloy steel carefully heat treated.

INSTALLATION. No cross members or other parts of car need be removed. Any mechanic with reasonable knowledge of Ford car can install without special tools.

QUIETNESS. Three internal gears, all revolving in the same direction with many broad faced teeth always in mesh, make positive and noiseless operation.

FLEXIBILITY. Widest practical range, Six Speeds.

CONVENIENCE. Short shift lever close to seat. No obstruction to driver or other occupant.

ECONOMY. Raises load capacity. Saves fuel, tires, brake bands. Gives quick pick up in traffic and easy transportation on grades and bad roads —

**Price — \$65.00 for Passenger Cars
\$69.50 for Trucks**

Complete, ready for immediate installation
F. O. B. Cleveland

QUICK ACTION NECESSARY
Dealer's franchise being allotted. Increasing demand results from substantial construction, light weight, small dimensions, low price, proved efficiency and durability. Send for new bulletin with discounts, or wire for complete unit for trial.

THE TAYLOR MACHINE CO.
1917 East 61st Street
CLEVELAND, OHIO
Makers of High grade Gears and Transmissions since the beginning of the Automotive Industry.

MOHAWK

Sliding Gear Transmissions for Ford Cars and Trucks~



6 SPEEDS FORWARD 2 REVERSE

The MOHAWK TRANSMISSION is SUPERIOR in its field. It is the only complete unit with Extra Universal Joint which positively aligns the transmission, thereby preventing the transmission from coming out of gear and the premature wearing of parts.

The MOHAWK provides either three speeds forward and one reverse or six speeds forward and two reverse at the driver's option. Right hand emergency brake adds to efficiency of operation.

DEALERS: The MOHAWK agency is available. Some territory is still available. Write quick.

Pays for itself in road construction and all heavy duty work by elimination of planetary trouble and saving in cost of hand replacements.

The MOHAWK is increasing Ford truck sales for dealers. It makes possible a standard equipped truck for much less than the original cost of other economical trucks. Combined with the powerful Ford motor the MOHAWK TRANSMISSION is unbeatable by anything near the price.

THE MOHAWK CORPORATION
Dept. D—ROCKFORD, ILLINOIS.



The JUMBO Giant

Only Transmission that combines
Over-Drive, Direct and Under-Drive,
with a Reverse Gear

THE JUMBO Giant is needed in road building and general contracting, farm and dairy hauling, industrial and municipal fleets, coal and ice hauling, lumbering and mining, oil field and tank delivery — wherever heavy-duty service is required, at low equipment and operating costs.

With its 7 speeds forward and 3 speeds reverse, the Giant does more than any other transmission can do. Enables the one-ton Ford truck to out-perform trucks that sell at more than twice the Ford price! Transforms a good light truck into a still better run-on job with greater speed when traveling light, and greater pulling power and dependability when loaded, than any other truck of equal capacity. Passenger car speed in over-drive, and super-power in under-drive — without over-taxing the Ford motor!

THE PRICE-HOLLISTER COMPANY
ROCKFORD, ILLINOIS

Consider JUMBO'S advantages. Consider its sales possibilities. Consider yourself as the logical dealer in your locality to handle the sale of this most unusual Ford equipment. Write for descriptive literature and name of nearest JUMBO distributor.

Doubles pulling power of Ford one-ton truck and delivers 35% more speed than Ford high.

Provides 7 speeds forward and 3 speeds reverse — a speed for every road and load condition.

Lowers Oil and Gas Consumption — reduces planetary band replacement, upkeep cost and tire wear.

Attached by through-bolts, sligged with special universal joint, supported by cross member.

JUMBO Low also includes Transmission for Ford Trucks and Cars — \$75.00 and \$67.50 respectively. These well known models have not been changed except by addition of a superior member — a NEW INSURANCE.

LIST \$110
With Complete Attachments

JUMBO Giant

For FORDS TRANSMISSIONS

More Power and Speed for your FORD

4 speeds forward
2 speeds reverse



TWO Ton Performance at Ford ONE Ton Cost

FORD TRUCKS equipped with JUMBO Power and Speed Transmissions are actually outworking two ton trucks in heavy sand, mud and up the steepest grades. For heavy farm trucking, road and miscellaneous hauling, the JUMBO Equipped Ford earns more and costs less to maintain. A Ford Truck completely equipped with body, cab and JUMBO Power Transmission will not average over \$700. Why pay more?

**Doubles the Power
Increases the Speed**

JUMBO actually **DOUBLES THE PULLING POWER**. A Power and Speed for every road or hauling condition. Special heat treated gears make it virtually unbreakable. The JUMBO is **ABSOLUTELY SAFE** because it cannot be placed or left in neutral, thus both planetary and emergency brakes are always effective. Practically eliminates planetary band replacement.

For the Truck—

The Ford Model JUMBO is designed especially for the work it has to do. Overize construction. Complete with all attachments at \$75.00. War tax paid.

For the Passenger Car—

JUMBO makes the Ford passenger into a fast, snappy job that will out-perform any light car. Provides 20 miles per hour faster in high gear with Jumbo 3 to 1 Ring and Pinion gears.

See Your Nearest Dealer
Distributed by

FORD TON TRUCK MODEL
\$ 75
with complete attachments

JUMBO Passenger Car Model complete
\$ 67 50

JUMBO For FORDS POWER SPEED TRANSMISSIONS

- Abrahamson & Sons Co., Chicago, Ill.
- Acme Sales Co., Chicago, Ill.
- Adair Sales Co., Chicago, Ill.
- Adair Sales Co., Chicago, Ill.
- Adair Sales Co., Chicago, Ill.
- Adair Sales Co., Chicago, Ill.
- Adair Sales Co., Chicago, Ill.
- Adair Sales Co., Chicago, Ill.
- Adair Sales Co., Chicago, Ill.
- Adair Sales Co., Chicago, Ill.

Manufactured by
The Price-Hollister Co.,
ROCKFORD, ILLINOIS

Muncie Transmissions

The Muncie Gear Works of Muncie, Indiana provided a selective sliding gear transmission with three forward speeds and a reverse gear. Up to seven forward speeds and five reverse speeds could be obtained if used in conjunction with the standard Ford planetary transmission.

Twin-High Transmissions

Twin-High Transmission Company (name changed to National Twin-High Sales Corporation in 1925) of Syracuse, New York, first produced a front mounted unit with two forward gears, reverse, and no neutral. The transmission was designed to be used with the standard Ford transmission, which resulted in having six forward speeds and three reverse. The advantages of this unit were its ease of shifting and no danger of losing braking if "stuck in neutral. A rear mounted version was offered in 1926.

Warford Transmissions

See *Conord transmissions*.

Woodward Transmissions

Woodward & Rowe of Chicago, Illinois, manufactured three different versions of a two-speed selective sliding gear transmission. Unlike other manufacturers, Woodward & Rowe sold gear sets separately in order that the owner could use the same case and change the gear ratios to suit conditions or uses.

Note: The Woodward Truck Attachment Company in Los Angeles offered a rear mounted two-speed transmission. See "*Rear Mounted*" section for a discussion of the Woodward transmission produced by the Woodward Truck Attachment Company of Los Angeles.



"There is no light Car
as good as a
Twin-High equipped Ford
- at any price!"

IS there any reason why any one should pay more for a light car than he pays for a Ford, plus the slight cost of a Twin-High?

The world knows that the Ford provides dependable transportation at lowest initial cost, that the cost of repairs and parts is lowest and that the depreciation is small.

Tell Ford owners to keep their Fords, or, if they need new cars to buy Fords. Tell them to equip them with Twin-High, the simplest internal gear transmission to operate. They will then experience the thrill that comes from four speed performance—climb the steepest hills and travel over the roughest roads in high; have remarkable performance in traffic plus the joy of a noiseless auxiliary transmission.

A Twin-High equipped Ford is the equal or superior of other light cars that sell for much more money.

National Twin-High Sales Corp'n
Denison Building, Syracuse, N. Y.

You'll Marvel at the Simple Shift
To use Twin-High pull the hand lever all the way backward—our simple shift that works automatically without any possibility of ending neutral. To disengage Twin-High throw the hand lever all the way forward. The operation is so simple and easy that Twin-High drivers marvel at it from the start. They drive away in new pleasures after receiving the very briefest of instructions.

More Power! Increased Tonnage! Quiet!

Vacation Trips
Only make you the more sure they are
A Necessity
—
SAVES
Pushing your car up hill in low, makes it in **SECOND** and not so slow.
DON'T WAIT—LET'S GO

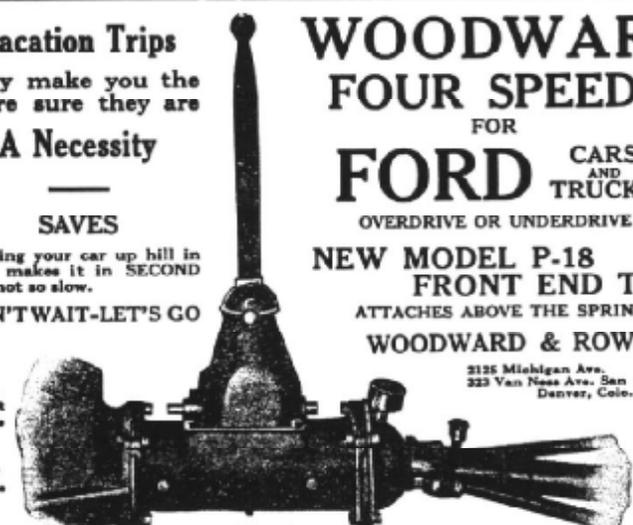
WOODWARD
FOUR SPEEDS
FOR
FORD CARS AND TRUCKS
OVERDRIVE OR UNDERDRIVE
NEW MODEL P-18
FRONT END TYPE
ATTACHES ABOVE THE SPRINGS
WOODWARD & ROWE

2126 Michigan Ave. Chicago
323 Van Ness Ave. San Francisco
Denver, Colo.

Price **\$60**
Agents Wanted

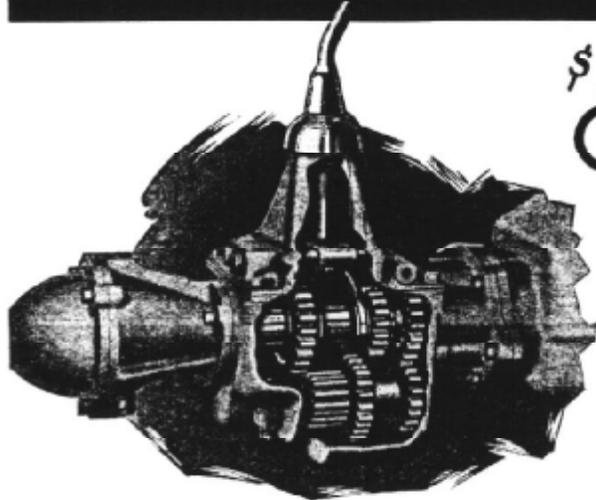
Simple Efficient Durable
—
Write for Descriptive Circular

PATENTED 57,11



The MUNCIE

*Gear Shift Transmission
for Ford Trucks and Cars*



\$**84.50**

*Reverse Gear
Universal Joint
Transmission
Support*

7 Speeds }
Forward } *Combination*
5 Speeds }
Reverse }

*Hyatt Roller Bearings
on Counter Shaft*

*Annular Ball Bearings
on Main Shaft*

HERE is a *better* gear shift transmission for Ford trucks and cars—at a much *lower* price. No sir, not a small transmission—not a makeshift or second-rate product, but point for point the *best* transmission for Ford trucks and cars, built—and guaranteed—by a manufacturer with eighteen years' successful experience in making of gears and transmissions.

The Muncie Gear Shift Transmission not only makes a one ton Ford truck do the work of a two ton truck, but do it more economically and satisfactorily than most expensive two ton trucks. It is a great profit producer for Ford truck owners, and the remarkably low price makes it a ready seller and splendid profit maker for the Ford dealer.

For descriptive literature and full particulars of our liberal dealer proposition, ask your jobber or write us direct.

The MUNCIE GEAR WORKS

Manufacturers of Transmissions Since 1907

MUNCIE, INDIANA

REAR MOUNTED TRANSMISSIONS

Conord Transmissions

See Conord in the "Front Mounted" section.

Fuller or Fullford Transmissions

Fuller & Sons Manufacturing Company of Kalamazoo, Michigan, produced a rear mounted two-speed selective sliding gear transmission for use in trucks. The transmission had no neutral and was designed to work with the standard Ford planetary unit. With the Fuller or Fullford transmission, the owner derived the benefit of four speeds forward and two in reverse. There appears to be no difference between the Fuller and Fullford models - except in name. Note: The Fullford name was used first and then changed to Fuller circa early 1926.

Jumbo Planator Transmissions

Introduced in 1926, the Jumbo Planator auxiliary transmission was one of the most interesting of the accessory transmissions. Rather than the popular selective sliding gear concept used in the Jumbo and Jumbo Giant models and by most other companies, Price-Hollister developed a rear mounted two-speed planetary transmission. Advertisements claimed that 80% of its gears were standard Ford parts. The unit offered two forward speeds and, when combined with the standard Ford transmission, provided four forward speeds and two reverse. Both overdrive and underdrive models were offered. See *Jumbo and Jumbo Giant Transmission discussion in the "Front Mounted" section for more information on the other Jumbo models and the manufacturer.*

6 SPEEDS FORWARD

FOR ALL FORDS EQUIPPED WITH A CONORD 6 SPEED AUXILIARY TRANSMISSION

Conord Equipped Fords Have 6 Forward and 2 Reverse Speeds, an Overdrive for Speed and Good Roads, 2 Intermediate Drives for Hills, Mud and Sand, an Underdrive for Power and Heavy Pulling, and a High, Low and Intermediate Reverse, all Combined in One Case Ready for Instant Use.

Conord Equipped Fords are the Most Flexible Cars in the World. They are the Easiest to Operate and can go any Place with Perfect Ease. They Have a Gear for Every Road and Load.

Conord Transmissions are Very Simple and Work in Conjunction with the Ford Transmission. They are Very Easy to Install, no Machine Work or Cutting of Shaft or Tube. They are Shipped with Shaft and Tube Fitted as Shows in Cut.

Write for Descriptive Circular. Agents Wanted.
Patented in United States, Canada and England.

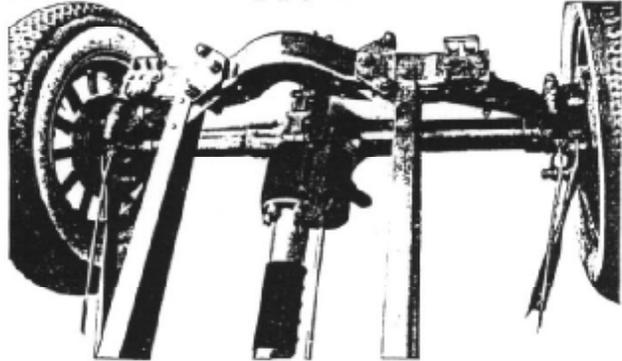


Patented June 19, 1917.

Manufactured By

BROADWAY TOOL & MACHINE COMPANY, Inc.
717 Livingston Street, ELIZABETH, N. J.

FULLER ANNOUNCES



FULLFORD

AUXILIARY Transmission

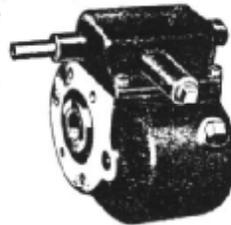
For Ford Trucks

A HIGH grade Auxiliary Transmission for the sturdy One-Ton FORD Truck, giving greater flexibility and operating economy at the lowest price yet offered, \$60 to the truck owner.

The FULLFORD is operated by a simple forward or backward movement of the control lever and, with the Ford transmission, gives four speeds forward and two reverse. It has no neutral position so that both brakes are always available.

Installation — 2½ hrs. No special tools required. No cutting of drive shaft. Installation and operation extremely simple.

FULLER & SONS MFG. CO. are the largest exclusive manufacturers of truck and bus transmissions in the world. The FULLFORD is the latest product of their experience and ingenuity. The Fuller reputation backs every FULLFORD unit. Send for literature which tells the remarkable FULLFORD story.



DEALERS

Get the FULLFORD proposition. It means more truck sales, better satisfied owners and a substantial addition to your accessory and shop profits.

\$ PRICE To Truck Owner

60 F.O.B. Kalamazoo
(West of Rockies \$2.00 Additional)

Fuller & Sons Manufacturing Company
Kalamazoo Michigan

New 4

Forward
Planetary
Speeds for
Fords
\$49.50



7 Big Points

1. It is PLANETARY.
2. Eighty per cent of the gears are standard Ford parts.
3. Priced the Ford way.
4. Simplest design.
5. Installed EASILY in 1½ hours.
6. Operated perfectly by any Ford driver five minutes after installation.
7. Invented by Charles E. Starr, famous axle and transmission expert.

A single, simple unit to bolt right ahead of the differential housing.



A Big New Field of Profit for You

At a price clear under other transmissions, Jumbo now offers you a planetary gear shift that is the last word in performance. It provides a 4-forward, 2-reverse speed selection. It exactly doubles the Ford's power.

Consider Jumbo Planator's advantages. Consider its sales possibilities. You *know* it will sell—and in volume. Every foresighted man knows it. Consider yourself as the logical dealer in your locality to cash in right now while the season is on. \$49.50 for passenger car type—\$69.50 for truck type. You can see what those prices mean, in volume!

Use the coupon below as a reminder—rip it out and let it start the full details moving to you now.

JUMBO 
PLANATOR for FORDS
GEAR SHIFT

THE PRICE-HOLLISTER CO., Dept. C., Rockford, Illinois.
I am interested in details of Jumbo-Planator Transmissions for Ford cars and trucks. Without obligation, send me descriptive details.

NAME _____
ADDRESS _____
CITY _____ STATE _____

Langbein Transmissions

Claimed by its maker to be the "original of the sliding gear auxiliary transmissions for Model Ts, the Langbein transmission was produced in Los Angeles by a company using the name American Gear & Transmission, and several other names. Rear mounted, this unit was of the two-speed, no reverse or neutral, sliding gear variety. Several different gear ratios for the Langbein were offered to fit nearly every application.

Lincoln Utili-TT Transmissions

The Lincoln Transmission was actually the Moore Transmission that had been built by The Tractor-Train Company of Indiana. When Rocky Mountain Steel Products Inc acquired The Tractor-Train Company in Los Angeles, The Tractor-Train Company of Indiana changed its name to Lincoln Manufacturing Company and continued building the Moore truck transmissions. In 1926, the transmission was renamed the Lincoln Utili-TT Transmission. See *Moore Transmissions and Rocky Mountain Transmissions*.

Moore Transmission

The Tractor-Rain Company of Los Angeles and The Tractor-Train Company of Indiana in Connersville, Indiana, produced one of the more popular two-speed, selective sliding gear, rear mounted transmissions for Model T cars and trucks. The transmission did not have a reverse gear and worked with the Ford planetary transmission, providing four forward speeds and two reverse. The transmission had a neutral position and Moore offered an external contracting rear hub brake as an option. See *Lincoln Transmissions*.

Reduces the Wear on the Car

Langbein 4 Speeds for Ford Cars and Trucks

You have an intermediate that makes it easy to drive with only a very little use of the Ford low, when you equip with

"THE QUALITY TRANSMISSION"



Patents Pending

BUILT FOR SERVICE

Agents Wanted.—Territory Open.—Write for Description

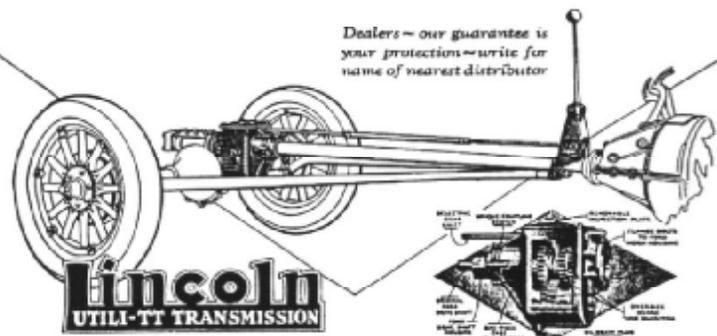
PACIFIC AUTO SALES CO. 1111-13 West Pico Street, LOS ANGELES



Power Plus Flexibility

Regardless of conditions—the LINCOLN UTILI-TT TRANSMISSION makes it easy for the Ford truck to give its usual performance under seemingly impossible circumstances. This combination gives big truck advantages plus all the distinct Ford economies. Lincoln Utili-TT Transmissions are desirable from the selling angle because in addition to worth-while profits they are dependable in user's hands.

Dealers—our guarantee is your protection—write for name of nearest distributor



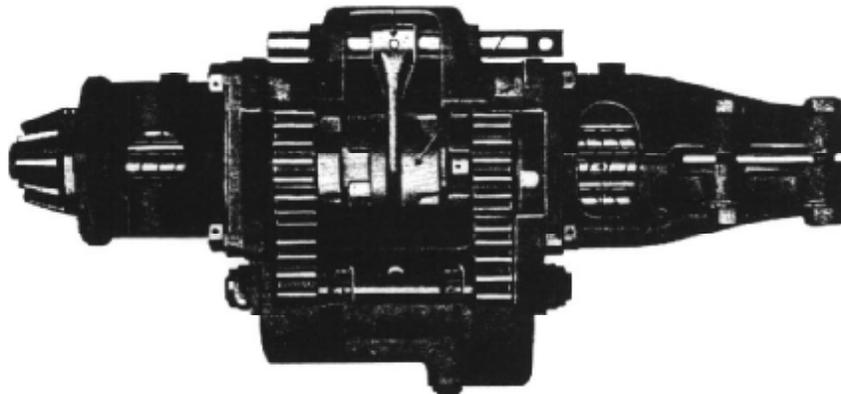
Lincoln
UTILI-TT TRANSMISSION

BRAKE EQUIPMENT COMPANY

3609 GRATIOT AVENUE, DETROIT MICHIGAN

Sales Dept. for LINCOLN MANUFACTURING CO., Connersville, Indiana

"MOORE POWER"



For All Ford Cars, Trucks and Truck Attachments

is obtained through the "MOORE" TRANSMISSION.

The "MOORE" is a compact set of gears installed between the Ford transmission and differential, without altering the design or control of the Ford, and operated with a separate control lever.

The "MOORE" adds an Intermediate, an Emergency Low and Emergency Reverse to the Ford High, Low, and Reverse, and by the addition of these two extra speeds forward and one reverse, the "MOORE" doubles the power of the Ford car, truck or truck attachment.

For further information write our nearest Factory, and specify the type of Ford you are interested in equipping.

TRACTOR-TRAIN CO., 1346 Wall St., Los Angeles, California

TRACTOR-TRAIN CO. of INDIANA, ^{10th and}Conwell Sts. Connersville, Ind.

Rocky Mountain Transmissions

In about 1922, The Tractor-Train Company, manufacturer of Moore transmissions, brakes, and other accessories, was acquired by, or its name changed to, Rocky Mountain Steel Products, Inc. In 1923, Rocky Mountain began selling its three-speed, rear mounted, selective sliding gear transmission. This unit was significantly different from the Moore transmission offered by The Tractor-Train Company, Rocky Mountain's predecessor. This new model offered an additional forward speed and had no neutral position.

Universal Transmissions

Universal Transmission Company of Seattle built a three-speed, rear mounted selective sliding gear transmission for trucks. Used with the standard Ford transmission, the Universal provided six forward speeds and three reverse.

Woodward Transmissions

Not to be confused with the Woodward & Rowe transmission that is discussed in the "Front Mounted" section, Woodward Truck Attachment Company of Los Angeles sold a rear mounted transmission for cars and trucks. The rear mounted Woodward was a two-speed, selective sliding gear model, with no reverse but with a neutral position.

"Rocky Mountain" 6 Speed

TRANSMISSIONS FOR FORD CARS AND TRUCKS



Ton Truck Model

"The Transmission With Gears Always in Mesh"
85% More Power—30% More Speed
Power and Speed Combined

This transmission combines the features of both Power and Speed in one Transmission Gear case, installed at the rear end of the drive shaft. A decided advantage over all other forms of transmissions. In direct drive the original Ford speeds remain unchanged. The power or underdrive ratio gives 85% more power and the speed or overdrive ratio will cut down the engine speed 30% or increase the road speed of car or truck. **Rocky Mountain Gears are always in mesh.** It is the latest and last word in adapting the Ford Truck to any road.

ROCKY MOUNTAIN STEEL PRODUCTS, INC.
Mfgs. of Rocky Mountain Brakes
 SUCCESSORS TO TRACTOR TRAIN COMPANY

1344-46 Wall Street 357 Van Ness Avenue
 Los Angeles, California San Francisco, Calif.

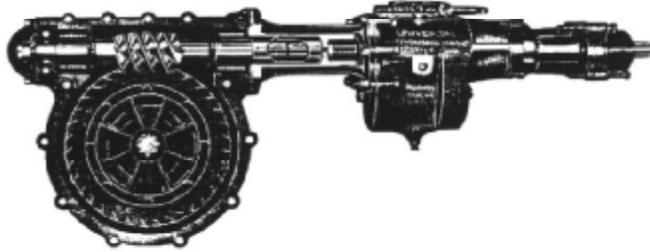
Oh, Boy! Here Is A New One!

DIVIDENDS TO THE READER

The Universal Four Speed Auxiliary Transmission

For Ford Cars and Worm Drive Trucks

BAD ROADS AND HEAVY LOADS MADE EASY.



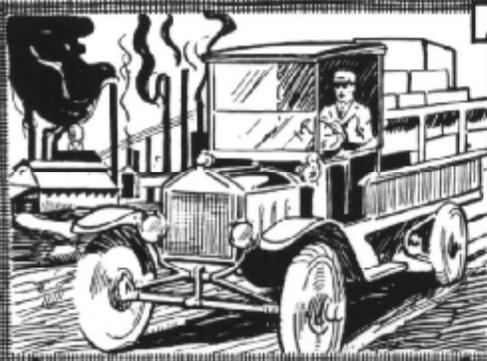
Doubles your power or speed—four speeds forward and two reverse. Consists of the finest materials obtainable.

GEARS—Alloy steel, one inch face, heat-treated and oil tempered.
 BEARINGS—Hyatt roller bearings throughout.
 CASE—Manganese bronze, same material as used in all propellers on battleships—practically unbreakable.
 LUBRICATION—Runs in a bath of oil continuously.

Fully guaranteed against defective materials and workmanship.
 Literature giving full information and prices mailed on request.

LIBERAL DISCOUNT TO FORD DEALERS.

UNIVERSAL TRANSMISSION CO.
 1206 L. C. Smith Bldg. SEATTLE, WASH.



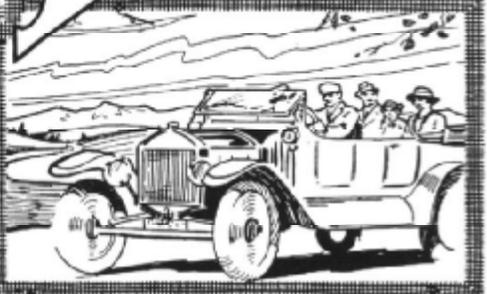
Four speeds for Fords

FOR FORD TRUCKS

FOUR FORWARD SPEEDS

NOTE THESE GEAR RATIOS:
Low, 21 to 1; Second, 12 to 1; Third, 6 1/2 to 1; High, 3 7/11 to 1.

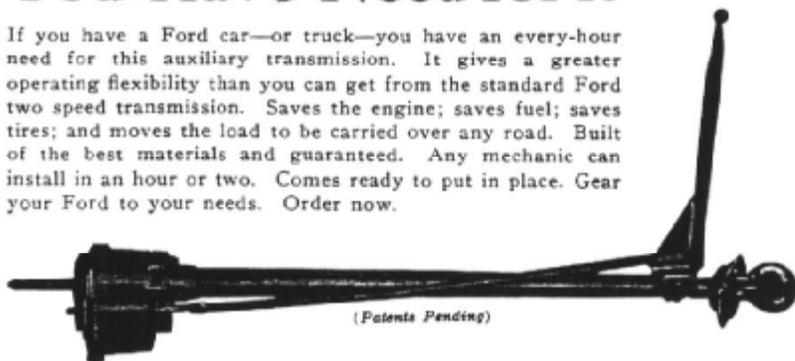
A gearing for every load, road, or speed condition.



FOR TOURING

You Have Need for it

If you have a Ford car—or truck—you have an every-hour need for this auxiliary transmission. It gives a greater operating flexibility than you can get from the standard Ford two speed transmission. Saves the engine; saves fuel; saves tires; and moves the load to be carried over any road. Built of the best materials and guaranteed. Any mechanic can install in an hour or two. Comes ready to put in place. Gear your Ford to your needs. Order now.



(Patents Pending)

Price \$45 F. O. B. Los Angeles

Your old drive shaft and tube exchanged.

SOME DESIRABLE TERRITORY STILL OPEN FOR LIVE DEALERS. WRITE FOR DETAILS.

WOODWARD TRUCK ATTACHMENT COMPANY
2035 W. PICO ST. LOS ANGELES CAL.

MULTI-SPEED AXLES

Austin Two-Speed Direct Drive Axles

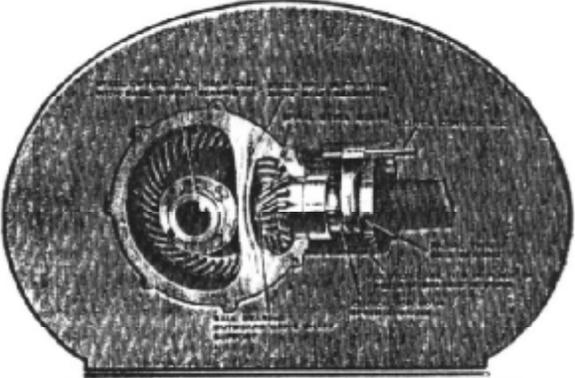
The Austin was an overdrive two-speed axle built in Cincinnati, Ohio, by The Two Speed Axle Company. Low range provided a 3.9 to 1 gear ratio and high range offered a 2.6 to 1 ratio.

This unit had bevel ring and pinion gears and special gearing and appears to have used a dog-clutch to get between high and low gears. Advertisements give no indication of price, but it could have been priced out of the market due to the expected high cost of producing a unit with these features.

Gould Double Reduction Axles

Produced by Gould-Detroit Axle Company in Detroit, this unit was a typical two-speed rear axle, providing a low-range gear ratio for added power in addition to the standard rear axle gear ratio.

Internally, the Gould gear case was a bit unusual. The left side axle housing was quite similar to the Ruckstell, and its design was neither new or startling. However, Gould used a bevel gear speed reduction, whereas Perfecto and Ruckstell used a spur gear system.



AUSTIN

**TWO SPEED
DIRECT
DRIVE**

FOR FORD CARS



The Austin Drive uses the same housing as the Ford axle. The installation is unusually simple and requires but a short time.

Were the Austin Two Speed Direct Drive designed merely for economy's sake, it would be worth much more than its cost. For the new axle obtains an actual saving in gasoline and oil consumption of 40% besides a marked reduction in repair bills and maintenance cost. It does this by giving two distinct gear ratios, one 3.9 to 1 which gives 10% more power to the present Ford ratio of 3.63 to 1, and a special direct drive of 2.6 to 1, which is 40% higher than the Ford.

But the Austin Drive does more. It entirely eliminates vibration. It adds a comfort and refinement to this popular car which can be secured in no other way.

We are signing agents in every part of the country. Sales are increasing daily. Write for our proposition.



Our booklet, "The Dawn of a New Era in Ford Driving," tells the complete story of the Austin Drive. It will be sent free on request.



A lever at the right of the driver controls the Austin. A movement of the lever brings the desired gear ratio into action. The Ford foot pedals are then used.

The Two Speed Axle Co.

11-15 West Second St. Cincinnati, O.

Buy a Ford—Own a Gould!

All cars need it, but it is built only for Fords



GOULD
Double-Reduction
AXLE

It Doubles the Power!

Twice as much power for climbing hills and going through heavy, muddy and sandy roads—that's what the Gould Double-Reduction Axle does for Ford cars and trucks!

How? By a simple method of gear reduction, which provides the Ford with an extra low speed, an extra high speed and an extra reverse speed.

For example, when driving on a muddy road, Gould low permits the motor to make 20 revolutions to a single revolution of the wheels—doubling its pulling power. The same advantage applies, of course, when driving in Gould High and reverse speeds.

By providing a graduated series of FOUR SPEEDS FORWARD and TWO

REVERSE, the Gould Axle greatly increases the Ford's flexibility and makes for ease of control in traffic. When driving in Gould low, the engine can be throttled down to about 1 mile an hour. And, when starting up, Gould high insures a snappy get-away.

Many other advantages also result from the use of a Gould Double-Reduction Axle. Send for literature giving detailed information. **DISTRIBUTORS:** An exceptionally attractive proposition is open in territories as yet unassigned.

FORD DEALERS: Let us tell you how the Gould Axle will help you sell more cars and trucks.

Gould-Detroit Axle Company

5625 McGraw Ave., Detroit, Mich.

Gould-Detroit Axle Company,
5625 McGraw Ave., Detroit, Mich.

Send detailed information and dealer proposition and distributor proposition.

Name

Address

I am a Ford dealer. I am a Ford owner.

Perfecto Two-Speed Axles Ruckstell 2-Speed Axles

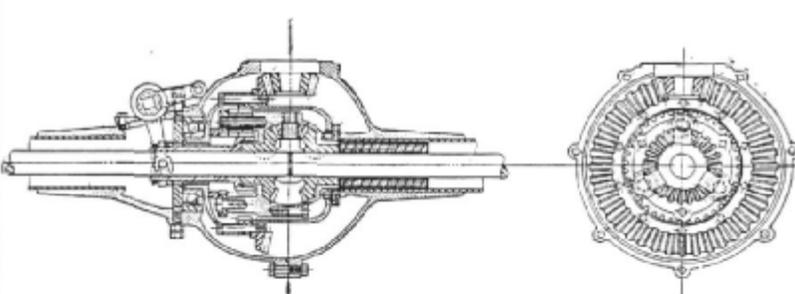
Both the Perfecto and the Ruckstell were two-speed axle units that utilized a sliding planetary gear built up with differential assembly. Both axles were manufactured by The Hall-Scott Company, perhaps more famous for their airplane motors.

For about three years (circa 1920-1922), the Perfecto Axle was marketed by the Perfecto Gear Differential Company of Bellingham, Washington, and the American Coin Register Company of Emeryville, California. In January 1923 (perhaps earlier), advertisements appeared for the Ruckstell 2-Speed Axle marketed by the Ruckstell Sales & Manufacturing Company in Berkeley, California, and the Perfecto name "disappeared."

The Ruckstell Axle was a simplified and less expensive version of the Perfecto, and few, if any, parts were interchangeable between the two models. (The only part known to be interchangeable between the Perfecto and the Ruckstell was a special ring gear and pinion - a 40/13 ratio, which Ruckstell continued to offer.) Two basic units were offered, one for cars and a larger, more rugged unit was offered for trucks.

Grover Ruckstell was an automotive engineer who, after World War I, went to work for Hall-Scott as head of the "airplane motor department." It is unknown whether Ruckstell actually designed the Perfecto or redesigned and renamed it the "Ruckstell."

IT IS HERE



The long anticipated all-planetary four-speed transmission, at last made possible by the

Perfecto 2-Speed Axle

All teeth constantly in mesh; impossible to clash the gears. Shift possible at high rates of speed. No extra weight on drive shaft.

GEAR REDUCTION INSIDE REAR AXLE HOUSING BETWEEN MASTER GEAR AND DIFFERENTIAL

Friction reduced to the minimum. Gives overdrive and underdrive. Additional applied power 60%. Saves fuel, oil, tire wear and upkeep. "Fool proof." Patented throughout the world. Mechanically and scientifically correct. Backed by an absolute guarantee. Can be installed in three hours without aid of machine tools. Gives the Ford two additional forwards and one reverse speed. Do not confuse PERFECTO 2-SPEED AXLE with an auxiliary transmission.

Price \$125.00 f. o. b. factory plus war tax. Write to-day for descriptive circular.

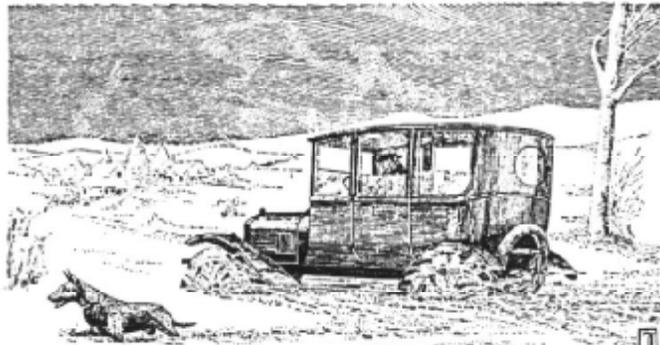
AMERICAN COIN REGISTER CO.
OAKLAND, CALIFORNIA

PERFECTO GEAR DIFFERENTIAL CO.
BELLINGHAM, WASH.

"A Power For Every Emergency"

Van Dorn 2-Speed Constant Service

The Van Dorn & Dutton Company of Cleveland, Ohio, produced a two-speed worm gear axle for trucks. Introduced in about 1926, the Van Dorn Axle was well built but came into the market a bit late.



Heavy Going Made Easy

Equip your Ford with—

A Ruckstell 2 Speed Axle

Snow, or mud or both—
You are bound to get into it some-
time this winter and when you do,
and are fortunate enough to be
driving a Ruckstell equipped Ford,
you'll go right thru it without
trouble.

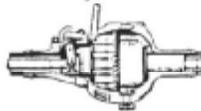
Because—
The Ruckstell Axle, which gives
the Ford an Intermediate High,

also provides the car with an
Emergency Low by means of which
55% more power is delivered to
the rear wheels than when driving
in Standard Ford low.

This tremendous power combined
with the slow speed at which the
rear wheels turn enables the Ruck-
stell equipped Ford to pull through
snow, sand, mud, out of holes and
up the steepest grades.

"No Ford Complete Without One"

\$62.40
f. o. b. Berkeley, Cal.
Tax Paid



Order through your
Ford Dealer
Send for Illustrated
Booklet A

RUCKSTELL SALES & MFG. COMPANY
819-821 Snyder Avenue, Berkeley, Cal.

Van Dorn

TWO DIRECT CONSTANT SERVICE AXLES
5114-5115-5116-5117-5118-5119-5120-5121-5122-5123-5124-5125

The doubled torque power produced is not thrust against the universal joint, drive shaft, drive shaft splines, worm or shaft splines, worm gear, the two annular bearings, or the thrust bearing. It is doubled and doubled only after the central torque has been transferred through those parts. Consequently this doubled torque power affects the Ford axle shafts only.

Two Direct Highs—a speed high and a power high

The Ford Truck with high speed gear installed gives the fastest practical wheel speed at the least engine speed in Ford Direct High (SPEED HIGH). Good for roadload and returning empty at speed.

"Van Dorn" installed on a Ford Truck with high speed gear gives the fastest practical wheel speed at the least engine speed in another "Van Dorn" Direct High (POWER HIGH). Good for double road load under all day constant service.

"Van Dorn" Two Speed Axle doubles torque power of transmission speeds also, and in no way conflicts with Ford planetary principle and design.

FORD DEALERS: "Van Dorn" is made only for Fords but it is as equally valuable to any other make of truck regardless of number of speeds in the transmission, or type of transmission. This now gives you the only truck on the market with TWO DIRECT CONSTANT SERVICE HIGH SPEEDS (A SPEED HIGH AND A POWER HIGH). Write for complete information including price list and discussion for dealer representation.

The Van Dorn & Dutton Co.
Gear Builders for more than a Quarter Century
Cleveland, Ohio