

# Ford Pyroxylin Finishing



*Ford Motor Company*

Detroit, Michigan

THE application of Pyroxylin finish to automobile bodies has many advantages over the use of paint and enamels. Pyroxylin unlike paints and enamels is a gun cotton product and is not affected by the extremes of heat and cold, light and darkness, moisture and dryness, that tend to break down, and in a comparatively short time destroy even the most costly varnished surfaces. Neither is a Pyroxylin surface easily affected by oil, grease, etc., and since it is not readily scratched it can be dusted off without harming the finish. In fact rubbing and polishing tend to improve the original lustre.

These qualities have created a popular demand for Pyroxylin finish, particularly since it can be applied in a few hours, at a comparatively low cost.

In addition, Pyroxylin finish affords the Ford owner an opportunity to maintain the satisfactory appearance of his car at very little expense.

Dealers generally will find it advantageous to install the equipment necessary to handle this class of work in their own shops. The finishing of customers' cars as well as the reconditioning of used cars by this quick process opens a very profitable field to our dealers.

The following pages contain detailed instructions on the application of Pyroxylin finish to Ford cars.



*Fig. 1*

### **Section A GENERAL Finishing Rooms**

Satisfactory Pyroxylin finishing, like any kind of painting, can only be performed under cleanly conditions. For this reason, it is advisable to provide a finishing room. This may be a space, preferably at the extreme end of the Service Station, separated from the rest of the building by sheet metal partitions.

Every precaution should be taken to eliminate dust and lint in the finishing room. To accomplish this, the floor should be kept sprinkled with water, or preferably, oiled. The temperature of the room should be maintained at 80° Fahr. Also, it should be very well ventilated in order to eliminate toxic vapor of a very low flash point.

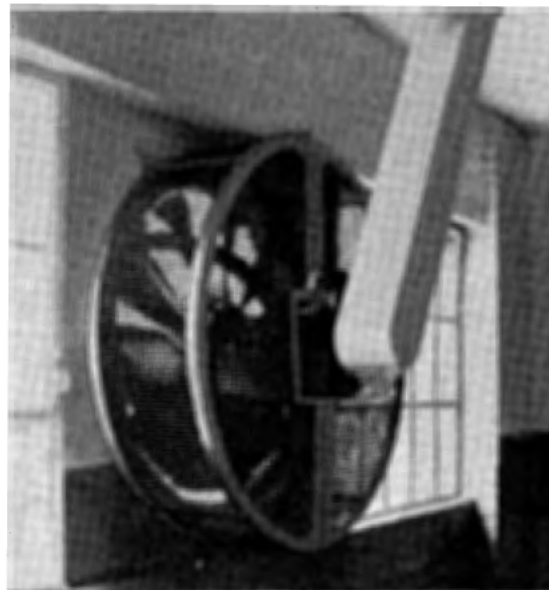
An ideal and inexpensive method of ventilation for a small finishing room is to have an exhaust fan at the rear end of the room, with the motor located outside the finishing room. Thus fire hazard, due to sparking motor brushes, short circuits, etc., is eliminated. See Fig. 1.

In the event that the fan is belt driven, the belt should be grounded so as to eliminate the possibility of static electricity causing trouble. See Fig. 2.

For particulars as to prices and name of manufacturer of such equipment, communicate with the local Ford Branch.

### **Lighting Finishing Rooms**

Because of the character of the work performed, it is particularly desirable that the finishing room be well lighted. Artificial lighting should be restricted to electricity. Gas lighting, etc., is dangerous and must never be used



*Fig. 2*

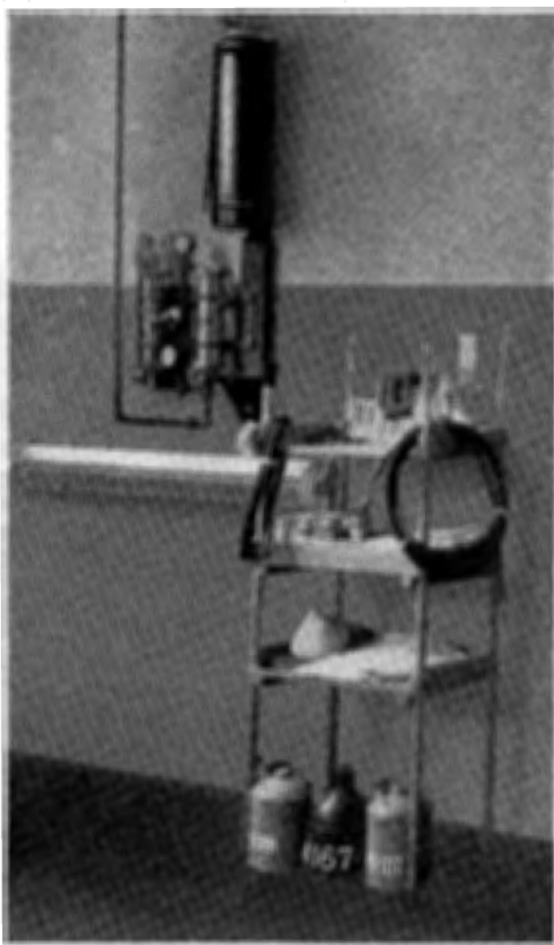


Fig. 3

under any circumstances. The shades enclosing the bulbs should be provided with glass fronts. This will protect the bulbs from accidental breakage with its accompanying spark, which might cause serious fire.

### Section B EQUIPMENT

The following equipment is necessary for the work of spraying Pyroxylin:

1. Air brush with a quart feed cup (45 lb. pressure gun)
2. Rubber hose for above
3. Air transformer (water and oil separator)

4. Touchup air brush
5. Rubber hose for above

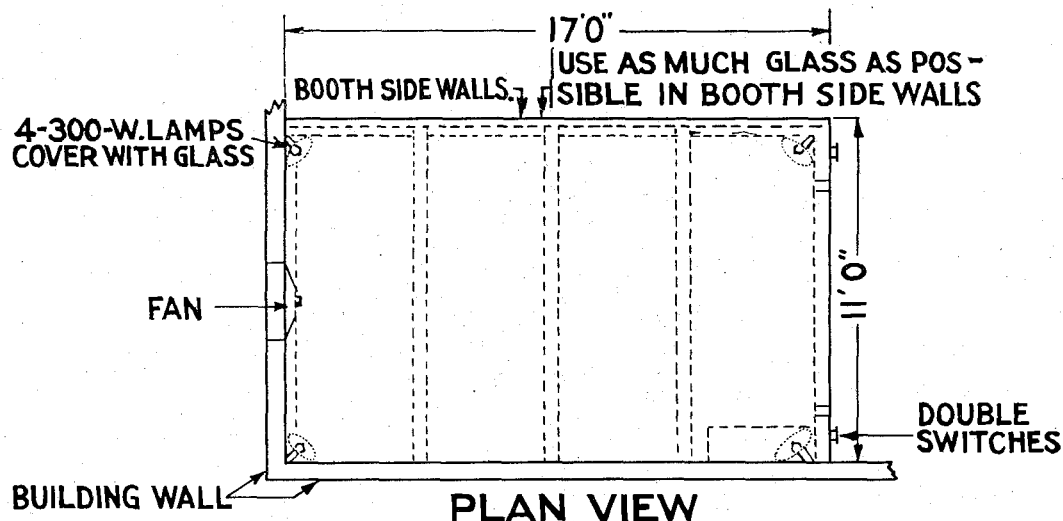
One of the principal components of the spray equipment has not been mentioned in the above list, i.e., the air compressor. Practically all Ford Service Stations are equipped with a tank air compressor. The air transformer mentioned can be attached to the air line in use at the Service Stations and utilized to advantage without the necessity of purchasing a special compressor for the purpose. However, Service Stations not equipped with compressors should secure a complete spraying equipment which includes motor, compressor, air brush, tank, separator, etc.

To secure satisfactory results, a compressor should be capable of delivering at least 6 cubic feet of air per minute. Refer to page 44 of August, 1926, issue of Ford Service Bulletin for chart showing capacities of various size compressors at different speeds.

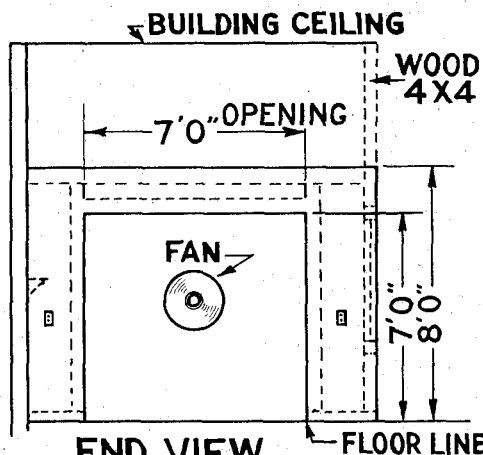


Fig. 4

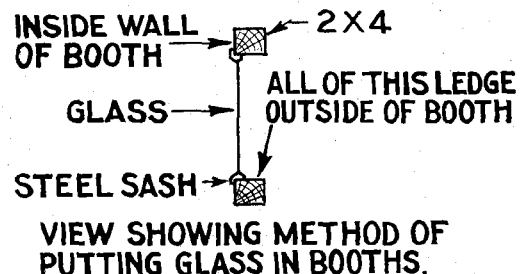




COVER BOOTH WALLS INSIDE & OUTSIDE WITH SHEET STEEL



END VIEW  
ROOF BOOTH AS SHOWN. ALTERNATE  
PLAN, BOOTH SIDE WALL RUNNING TO  
CEILING AS SHOWN BY DOTTED LINE.



*The diagram shown above gives all necessary details for the construction of a spray booth. The most advisable place to build the booth is in a corner of the building where there is ample light. The building walls inside the booth should be sprayed with lacquer, and if a false ceiling is used, a sprinkler system should be installed inside the booth.*

The Finishing Room should also be supplied with the following equipment:

1. Water Tool Brush
2. Set of Rubber Gloves
3. Half-inch Camel's-Hair Brush
4. Two Glazing Knives, 4-inch

5. One 1½-inch Putty Knife  
(See Fig. 3)
6. Two Small Striping Brushes
7. One L. L. Hydrometer
8. One H. L. Hydrometer
9. Steel Wool
10. Rubber Skiver

### Section C

#### MATERIAL REQUIREMENTS

The Finishing Room should be supplied with the necessary amount of the following:

- (a) 1. Sandpaper Nos. 150 Aluminum Oxide cloth, No. 240 Aluminum Oxide Waterproof Paper and No. 280 Aluminum Oxide Waterproof Paper
- 2. Adhesive tape (F. O. S.) one roll. (Special tape for Pyroxylin work.)
- 3. Cheesecloth
- 4. Respirator
- (b) 1. Paint Remover
- 2. Alcohol (for making M-107)
- 3. Tack Rag Varnish (M-401)
- 4. Top Dressing (M-255)
- 5. Straw Pyroxylin for Wire Wheels (M-627)
- 6. Casino Red for Wire Wheels (M-628)
- 7. Emerald Green for Wire Wheels (M-629)
- 8. Gun Metal Blue Pyroxylin (M-631)
- 9. Black Pyroxylin (M-632)
- 10. Highland Green Pyroxylin (M-633)



Fig. 5



Fig. 6

- 11. Phoenix Brown Pyroxylin (M-634)
- 12. Fawn Gray Pyroxylin (M-635)
- 13. Pyroxylin Primer (M-638)
- 14. Pyroxylin Glaze (M-639)
- 15. Pyroxylin Surfacer (M-640)
- 16. Orange Pyroxylin Striping (M-641)
- 17. Cream Pyroxylin Striping (M-643)
- 18. Pyroxylin Thinner (M-647-S)

### Section D

#### PYROXYLIN FINISHING

##### Operation No. 1

##### Washing Body.

Before a car can be refinished, it must be thoroughly washed with soap and hot water. Where the equipment is available, it is preferable to steam the car thoroughly so as to remove all grease, sand and dust from the chassis, underneath the fenders, etc.

##### Operation No. 2

##### Removing Old Paint (Optional)

Unless the old paint is badly checked or marred, it is not necessary to remove it unless the car owner so desires.

NOTE—Goggles and rubber gloves should be worn while performing this operation.



Fig. 7

Spread paper on the finishing room floor and place the car in the center of the floor. Fill a quart cup with paint remover, and apply with a water tool brush, beginning with the upper back (see Fig. 4). The paint remover loosens the paint from the body (see Fig. 5), and it may be easily scraped off with

a glazing knife (see Fig. 6). Clean up, using steel wool (see Fig. 7). It is advisable to work from top down.

### Operation No. 3

#### **Sanding Bare Metal. Use No. 150 L. W. A1 Oxide Cloth.**

After all the paint has been removed, the body should be dry sanded with No. 150 L. W. A1 oxide cloth, to a good smooth surface (see Fig. 9). Use compressed air to blow out all foreign matter dislodged by the sandpaper (see Fig. 10). Sand the fenders (see Fig. 11), running boards, radiator shell, hood, lamps, etc., making sure to remove all rust, grease, etc., as Pyroxylin will not adhere to a greasy surface.

### Operation No. 4

#### **Preliminary Washing.**

Starting with upper back, wash the upper part of the body, a small area at a time, with a sponge or towel, soaked in gasoline or benzol (see Fig. 12). Next wash the lower part (Touring car and Roadster to be treated same as lower part of a closed body), particularly in

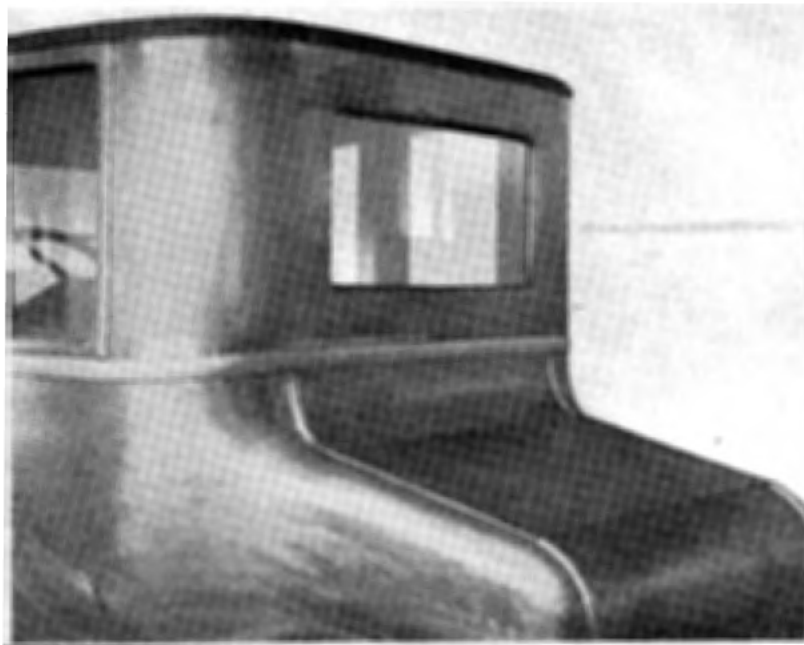


Fig. 8

and around the door hinges, under the belt mouldings, T-mouldings, side-sills, door jambs and heel boards. Use a water tool brush in the inaccessible places. Utmost care must be exercised in removing the last vestiges of grease, oil, etc. Dry the body with clean towels.

#### Operation No. 5

**Final Body Wash, M-107 (necessary only when paint has been removed, Operation No. 2)**

Wear rubber gloves.

Wash the entire car body with M-107 in the same manner as Operation No. 4. Wipe dry as before and tack rag the entire body. (See Fig. 14.)

#### Operation No. 6

**Protecting Windows, Windshield glass, etc.**

When the body has been sanded down, the windows should be closed and covered with paper. For this purpose adhesive tape (F. O. S.) may be used. One may accomplish good results by applying a thin coat of grease with a small brush in place of covering the glass with paper. Cover the engine with papers. Grease the hub caps,



Fig. 9



Fig. 10

headlight and tail light lenses, license plates, etc. (See Fig. 13.)

#### Operation No. 7

**Prime, Using M-638 Pyroxylin Primer.**

(A) If the old paint has not been removed from the car, and Pyroxylin is sprayed over it, the Pyroxylin may act as a paint remover. Consequently the old paint must be sealed. Furthermore, Pyroxylin will not adhere to bare metal spots, therefore, it is imperative to prime with M-638 Pyroxylin Primer.

(B) In cases where the old paint has been removed because of a checked surface, the bare metal should be primed. Therefore, the body should be sprayed with M-638 Pyroxylin Primer. (See Fig. 15.)

#### *Always Use Respirators During Spray Operations*

Fill the cup attached to the air brush with the desired Pyroxylin Primer, thinned with its own volume M-647-S. Attach the air hose from the air and water separator connected with the air



Fig. 11

compressor to the air brush and spray the entire surface of the body with a good solid coat, beginning from the top down.

The amount of air used in different air brushes depends upon the make and type of brush, and the operator is referred to the instructions enclosed with the air brush in use.

The air brush must be held 7 inches to 10 inches away from the surface being sprayed, and the nozzle should be adjusted in such a way as to have air holes in the same plane in which the air brush is being used. This means that the fanspray emitted from the air brush must be at right angles to the plane at which the material is being sprayed. When the car has been sprayed with Pyroxylin Primer (M-638), check the surface for skips, etc., and if necessary, spray again.

(C) Fenders, running boards, radiator shell, hood, headlights, etc., should

also be carefully primed around edges over bare metal spots, etc.

*Clean Air Brush with M-647-S immediately after use*

(Figure 16 shows a primed body and hood.)

### Operation No. 8

#### Air Dry.

Pyroxylin Primer should be air dried at room temperature for 15 minutes.

While the following operations are not necessary, the quality and appearance of the finished job can be greatly improved by performing them before proceeding to operation No. 9.

#### (a) Sand, using No. 240 A1 Oxide Sandpaper.

1. Lightly dry sand prime coat with No. 240 A1 oxide sandpaper, to a good smooth surface.
2. Tack rag the entire body.

#### (b) Spot-glaze, using M-639 Pyroxylin Glaze.

1. Spot glaze the body where necessary. The glaze is applied with a 1½-inch glazing knife, in a



Fig. 12



Fig. 13

semi-paste form, using at glazing consistency.

2. Air dry spot glaze 10 minutes at room temperature.
3. Feather out edges of spot glaze,



Fig. 14

using No. 240 A1 Oxide Sandpaper.

4. Tack rag entire surface.

**(c) Spray M-640 Pyroxylin surfacer.**

1. Spray a solid coat of M-640 Pyroxylin surfacer, thinned with its own volume of M-647-S Pyroxylin Thinner.
2. Air dry same for 2 hours at room temperature.
3. Water sand surfacer coat with No. 240 A1 Oxide sandpaper.
4. Wash with water and wipe dry with clean towels. Let air dry 30 minutes.
5. Tack rag the entire surface of car body.

**Operation No. 9**

**Spray M-632 Black Pyroxylin.**

1. Spray a coat of M-632 thinned with its own volume of M-647-S Pyroxylin thinner, over fenders, running boards, radiator shell, headlights, chassis, etc. (See Fig. 17.) Repeat immediately with a second coat of the same.



Fig. 15

2. Jack up the rear end. Revolve each wheel with hand and spray a good solid coat of M-632 Black Pyroxylin on both sides.

3. Jack up the front end and spray the two front wheels with M-632 Black Pyroxylin in the same manner. (See Fig. 18.) Air dry M-632 Black Pyroxylin about 10 minutes at room temperature. (Figure 19 shows a primed car body with fenders, etc., sprayed in Black Pyroxylin. The car is ready for papering.)

#### Operation No. 10

**Papering fenders, running boards, dust shields, etc.**

It is necessary to cover the running boards, fenders, dust shields, etc., with paper in order to protect their surface from fogging when the car body is sprayed in colors. (Figure 20 shows these parts covered with paper preparatory to spraying body in colors.)

#### Operation No. 11

**Pyroxylin First Double Header.**

The term "double header" implies two single coats, one sprayed **horizontally**, the other sprayed **vertically**.

Spray this coat on primed car body. But if an exceptionally good job is de-



Fig. 16



sired and body has a coat of M-640 Pyroxylin Surfacer that has been sanded, fill air brush cup with Pyroxylin of desired color, thinned as suggested below. Proceed to spray **horizontally** the entire exterior surface of body above and below the belt moulding, including the door jambs, edges of Coupe and Roadster deck lid and side sills with the **first single header** of the Pyroxylin of specified color.

Repeat immediately with **first double header** of the same materials sprayed **vertically**. (See Figs. 21 and 22.)

Unless otherwise specified the Pyroxylin should be cut as follows:

Pyroxylin (any color) 1 part by volume.

Pyroxylin thinner (M-647-S) 2 parts by volume.

#### Operation No. 12

##### Air Dry.

Air dry Pyroxylin for 5 minutes in the finish room.

#### Operation No. 13

##### Pyroxylin Second Double Header.

Fill the air brush cup with Pyroxylin



Fig. 17



Fig. 18

of same color as sprayed before and proceed to spray **horizontally** the entire surface of body above and below belt moulding with the second single header.

Repeat immediately with the **second double header** of the same material, sprayed **vertically**.

Spray a coat of the Pyroxylin on roof rail as well. As usual, cut Pyroxylin with M-647-S as recommended above.

#### Operation No. 14

##### Air Drying.

Let body air dry at room temperature for 10 minutes.

#### Operation No. 15

##### Spraying Hood.

The primed hood shown in Fig. 16 may be sprayed at this stage with two double coats of Pyroxylin to match the Pyroxylined body while the body air dries. (See Fig. 23.)

#### Operation No. 16

##### Inspect and Repair.

Inspect the body with spot light for





Fig. 19

bare spots, sags, off color spots, etc. These must be repaired. (See Fig. 24.)

Spot glaze scratches with M-639 Pyroxylin Glaze with 1½-inch putty knife, being careful to use just enough to cover bare metal, as it should not be sanded unless necessary. If necessary, feather out edges with No. 240 A1 Oxide Sandpaper. Tack off and apply Pyroxylin of desired color with air brush.

Sags may be allowed to dry, when they can be cut with a razor blade and sanded to a smooth surface with No. 240 A1 Oxide Sandpaper. Such sanded spots should be tacked off and given a solid coat of Pyroxylin to match. Air dry at room temperature for 10 minutes.

NOTE—The body thus finished has a matt surface which may be made glossy as follows:

(a) Water Sand Pyroxylin with No. 240 A1 Oxide Sandpaper.

If the finishing room is to be used for brining up some other bodies in Pyroxylin, the body may be taken to the wash rack for the water sanding opera-

tion. Immerse a sponge in a trough of clear, running water and wet a small area at a time.

Dip a quarter sheet of No. 280 A1 Oxide Sandpaper in water, and water sand lightly to a smooth surface. Use edge of a rubber skiver 2 x 3 inches on the wet, sanded surface to see whether or not all orange-peel effect, dirt, sags, etc., have been eliminated. If nice,



Fig. 20

smooth surface has been obtained all over, wash body with clean water and wipe dry with laundered towels.

(b) Spray finish coat. This coat consists of 25% Pyroxylin Color and 75% Pyroxylin Thinner. Spray the entire surface of car body with a wet coat.

The above finish coat has a tendency to level out the Pyroxylin surface, leaving same smooth and glossy.

(c) Air dry body at room temperature for 10 minutes.

### Operation No. 17

#### Striping, Touchup of Roof Rail and Top Dressing.

##### (a) Striping colors for:

Gun Metal Blue Body,

Use M-641 Orange Pyroxylin Striping

Highland Green Body,

Use M-643 Cream Pyroxylin Striping

Phoenix Brown Body,

Use M-641 Orange Pyroxylin Striping

Fawn Gray Body,

Use M-643 Cream Pyroxylin Striping

Thin stripe material with M-647-S Pyroxylin thinner on a glass plate, using a Sword striping brush. Hold brush between thumb and index finger, using the other three fingers along the



Fig. 21



Fig. 22

lower edge of the moulding to serve as a guide.

The stripe must be solid in color and not less than  $\frac{3}{32}$  inch and not more than  $\frac{3}{8}$  inch below the lower edge of belt moulding.

It must not be less than  $\frac{1}{16}$  inch or more than  $\frac{3}{32}$  inch wide and must be placed around the entire body, across side of "Coupe pillars" in line with body stripe, down side of pillars  $\frac{3}{8}$  inch from the edge, across bottom of the pillar  $\frac{3}{8}$  inch up. Stripe should come up sharp to, not over, beading or T-moulding. Stripe must also be carried across the cowl. Air dry 10 minutes.

(b) Brush a coat of M-255 on the top and sun visor. Air dry 10 minutes. This dressing may also be used on cushions and other trimmings of the open car bodies. (See Fig. 26.)

### Operation No. 18

#### Cleaning Windows, Windshield, Hub Caps, Tires, etc.

Remove all paper from windows, windshield, etc., and wipe off the grease with a towel. Wash the glass clean with towel dipped in benzol or gasoline.

Remove grease from headlamp lenses with putty knife and wash same with a towel dipped in gasoline or benzol.



Fig. 23

License plates and radiator cap may also be cleaned similarly. Tires may be cleaned with a towel soaked in M-647-S.

**NOTE**—Do not let towel soaked in M-647-S come in contact with Pyroxylin finished surface, as it will destroy the finish at point of contact. (Figure 27 shows a used car refinished in Pyroxylin.)

## Section E

### REPAIRING PYROXYLIN

A Service Station will frequently be called upon to touch-up accidental scratches, bump out and repair panels, etc., either on new cars or cars not in use long enough to show any wear of the Pyroxylin. The information that follows will enable an operator to do all repair work successfully.

If the body needs bumping out, it should be taken care of by the dealer, using standard bump out tools.

(a) **PATCHING**—It is usually possible to patch Pyroxylin. As a general rule any area smaller than the size of an open hand should be patched. In cases where much patching has to be done on the same panel, it is advisable to refinish the whole panel. To accomplish this, proceed as follows:

- (1) Water sand the spot to be touched up with No. 280 A1 Oxide Sandpaper. If necessary, sand the entire panel lightly.
- (2) Wash same with water; wipe dry and tack rag.
- (3) Spray a coat of Pyroxylin primer



Fig. 24

over the bare spot, merging same with the surrounding Pyroxylin with a touch-up air brush. Air dry 5 minutes.

- (4) Spray Pyroxylin to match over the spot primed, using a touch-up air brush. Air dry 5 minutes.
- (5) Spray the entire panel with the same Pyroxylin; this would help eliminate the mismatching of color in patching. Air dry 10 minutes.

**NOTE**—If desired, water sand the whole panel very lightly. Spray Finish Coat as recommended in Section D. If necessary, stripe the panel.

(b) **TOUCH-UP** — Small scratches, bare metal and off color spots may be touched up as follows:

- (1) Sand the spot lightly, making sure to remove all rust, etc.
- (2) Wash same and wipe dry.
- (3) If necessary, spot glaze, applying same with 1½-inch putty knife. Care should be taken to use just enough of it to cover the bare spot.
- (4) If necessary, dry sand putty to feather out edges, using No. 240 A1 Oxide Sandpaper.
- (5) Tack off. Spray Pyroxylin to match, using touch-up air brush. Air dry 10 minutes.



Fig. 25



Fig. 26

- (6) Spray M-647-S on the spot if so desired.

**NOTE**—Bare spots that are not very prominently located may be lightly sanded and touched up with Pyroxylin, using a striping brush.

## Section F

### REFINISHING FENDERS

Fenders, dust shields, hoods, radiator shell, and apron should be examined and should their condition warrant refinishing, they may be sprayed with M-632 as recommended before. However, if the customer so desires, a new set of enameled fenders may be installed on the car.

When sheet metal parts are desired in Pyroxylin to match body, water sand the entire surface, being careful to remove all rust, grease, etc. Wash with benzol or gasoline. Spray a coat of M-638 Pyroxylin Primer and air dry in finish room for 10 minutes. Spray two double coats of desired Pyroxylin. Air dry 10 minutes.

## Section G

### MISCELLANEOUS

1. Refinishing wheels.

(a) Wooden wheels should be washed clean, sanded with No. 240 A1 Oxide

Sandpaper and sprayed with two coats of M-632 Black Pyroxylin. Air dry each coat 15 minutes.

(b) Wire wheels should be washed, cleaned, sanded, with No. 150 A1 Oxide cloth and given two coats of any of the following three Pyroxylin with an air brush. Dry each coat 20 minutes.

Straw Pyroxylin.....M-627

Casino Red Pyroxylin.....M-628

Emerald Green Pyroxylin.....M-629

from soldering, etc. This wash evaporates completely, leaving no trace of solids on the car body. Due to its containing almost half its volume of water, the Service Stations should make their own final body wash.

### CLEANING PYROXYLIN

Should the body or other Pyroxylin finished parts of the car become spattered with tar or other substances used



Fig. 27

Finish with a coat consisting of 75% M-647-S Pyroxylin Thinner and 25% Wheel Pyroxylin (any color), using an air brush. Dry Finish coat 20 minutes.

#### 2. Making a tack rag.

Dip 1½ yards of cheesecloth into tack rag varnish (M-401). Same should be wrung out and spread out to dry till it gets sticky (Tacky). Fold it up and keep in a damp cloth ready for use.

#### 3. Making M-107 final body wash.

Mix one gallon of 28% Ammonia Hydrate (Tech.) with 26 gallons of denatured alcohol, and add 25 gallons of clear water. This wash will neutralize any acid remaining on the car body

on roads, the spots can be easily removed with benzol or gasoline. If full strength gasoline or benzol is used, there is a possibility of softening the finish. It is accordingly suggested that the benzol or gasoline be mixed with one-third its own volume of motor oil.

Dip a clean towel into the mixture and, using one finger only, rub the spot gently until it has been removed. The rubbed spot should then be washed off with clear water.

Pyroxylin materials may be obtained from the Ford Motor Company in suitable containers and at reasonable prices.