

ROAD BUILDING IN MASON COUNTY

Constructive Program Put Into Effect By Present Administration; More Than \$1,400,000 In Modern

Improved Highways Completed In Three Years Through Co-operation With State Department

Maysville and Mason County have a right to feel proud of the development of their road system carried out during the past three years.

Within that time, due to the well laid plans of the present Administration, the untiring and persistent efforts of the County Road Engineer, backed up by a competent Fiscal Court, a Bond Commission composed of some of the leading business men of the County and continued newspaper support, there has been formulated and put into effect a splendid program of highway construction that has placed Mason County in the front rank of the progressive road building counties of the state. The carrying out of this program with its resultant network of good roads stretching in every direction is bringing remarkable benefits to the people of the county. It is fast giving them easy and convenient access anywhere they wish to go. It is serving to enhance greatly Mason County's attractions to tourists. It is proving a wonderful stimulus to agricultural and industrial development.

Mason County highways of improved and various high types, now lead out in all directions from the County seat of Maysville to the bordering counties, and when this extensive road program is finally completed good roads will extend out and connect up with the entire trunk line system of Kentucky.

In carrying out this road program the Mason County Road Department has passed from an almost insignificant annual expenditure of \$57,000 to a permanent investment in county highways which represents an expenditure of \$1,350,000. In addition, the maintenance problem which would have required \$100,000 per year or twice the amount of money previously available annually from the usual county levy of twenty-five cents on the \$100 has been passed on to the State Highway Department of Kentucky, thus leaving the county levy to be expended upon the cross roads throughout the county.

In the expenditure of this \$1,350,000 the following types of roads have been built with the cost of each road as shown below:

Types And Costs

The Maysville-Germantown Road, formerly known as the Mason and Bracken Road, now known as the Ingles trail, was built at a cost of \$350,466.75. It is a 16 foot roadway of concrete of the Illinois type. This road is 11.8 miles in length and leads to the Bracken County line on the west.



R. P. DUVALL

Mason County Highway Engineer and
Pioneer Road Builder

R. P. DuVall is the man who has taken Mason County "out of the mud". As highway engineer during the past three years he has carried out with distinction the far reaching road program of the present administration, that has given the county its rightful "place in the sun" among the progressive road building communities of the state.

Mr. DuVall is an able engineer of wide experience in construction and highway work. He is a native of Scott County, Kentucky, and was graduated in Civil Engineering from the University of Kentucky with the class of 1906. For the next year he served with the engineers of the federal government in the construction of Fort Morgan in Alabama. From 1907 to 1912 he was engaged in railroad location work in the west. Then he spent three years in mining engineering in the coal fields of Eastern Kentucky.

In 1916 he took up road construction work, becoming one of the pioneer builders of modern highways in Kentucky. He has been since identified prominently with the good roads movement in the state. He has been resident engineer of the state highway department in Garrard and Harrison Counties and county engineer of Scott and Franklin Counties.

Mr. DuVall came to Mason County in 1925 as resident engineer for the completion of the Maysville-Lexington road to the county line. His work on this project attracted the attention of the people of the county, and when a sound forward-looking program for building up the road system of Mason County was formulated by the present administration, he was selected as the man to put it into effect. The high order of his work as county engineer has been one of the greatest factors in the development of a superb road system for the county, and in advancing plans for the progressive continuation of this work.

Mr. DuVall since coming to Mason County, has taken a very active interest in civic development in every way. He is a director of the U. S. 68 Historic Highway Association, and a member of the Maysville Rotary Club.

The Maysville-Flemingsburg Road, designed as the "Fields Highway", was constructed at a cost of \$231,135.37. It is a 16 foot roadway of Penetration Macadam type. This road is 11.2 miles in length and leads to the Fleming County line to the southeast.

The Maysville-Lexington Road, known as the U. S. 68 Historic Highway, copyrighted as the "Main Street of Kentucky", was built at a cost of \$214,017.60, with three years maintenance of \$49,691.74. It is a 16 foot roadway and a water bound macadam, surface treated type. It is 16.5 miles in length and leads to the Fleming County line on the southwest and connects up with all roads leading into central Kentucky and the trunk lines leading to the south.

The Washington-Sardis Road, is now under construction and when completed will cost \$112,233.55. It is a 16 foot roadway and is what is known as a traffic bound type. It is 13 miles in length and leads to the Robertson County line on the west and connects with the road leading to Cynthiana, Georgetown and Frankfort, Kentucky.

The Mayslick-Wedonia Road, was constructed at a cost of \$54,358.46. It is a 16 foot roadway and is also a traffic bound type. It is 6.5 miles in length and connects the U. S. 68 Historic Highway with the Fields Highway and passes through a section of the richest farming land in Kentucky.

The Mason-Lewis Road, known as part of the "Ingles Trail" is now being resurveyed and will be constructed at an estimated cost of \$250,000. It will be a 16 foot roadway and either concrete or penetration macadam.

This road is 8½ miles in length and leads to the Lewis County line on the west, and will accommodate all traffic to and from the Eastern Kentucky section through Ashland and on into Virginia to the Atlantic coast.

The Kentucky State Highway Department has agreed to let a contract on this road as soon as the rights of way can be secured. This will complete the road program as laid out for Mason County by the present Administration.

History Of Financing; Issue Of Bonds And Plan Of Expenditure

Until August, 1925, with the rapidly increasing automobile and heavy motor traffic, Mason County was unable, with its limited funds for road purposes to cope with the road situation. It was decided that this problem should be submitted to the taxpayers of Mason County, and that they should determine whether



A Scene of Rare Beauty in Mason County,—Maysville-Germantown Highway

bonds should be issued to carry out a building program that would give the County a first-class road system. In the referendum the proposal for a bond issue of \$350,000 for road improvement was carried by a vote of better than eight to one.

The principle of the State Highway Department in aiding counties in their road building programs has provided that the counties issue bonds and place the resultant funds to the credit of the Highway Department. The present County Judge was not willing to do this and pay interest on the bonds, when the State Highway Department could only make gradual use of the funds. By the use of a good deal of persuasion the consent of the Highway Department was obtained for placing the proceeds of these bonds in escrow in local banks and issued only as the Highway Department needed funds to meet monthly estimates on construction under way. This effected a saving in interest alone of between \$40,000 and \$60,000 on these bonds to the

taxpayers of Mason County.

However, despite the fact that this bond issue was made for the purpose of obtaining funds for the building of its road system, Mason County has been in effect, largely paying for its roads out of current funds as these roads have been constructed,—for the county has been doing the heretofore unheard of thing of buying its own bonds. Today, though only three tax paying periods have passed since the issuance of the bonds, the county owns \$108,000 of the \$350,000 issue.

At the time that these bonds were issued, it was planned to build only three roads,—a total of 33 miles at a cost of \$250,000,—leaving the remaining \$100,000 for expenditure upon the county's 240 miles of cross roads. But later it developed that because of legal technicalities, none of this money could be used for repair and maintenance work.

This \$100,000 was then appropriated for the construction, with the assistance of the State Highway Department, of



A View Along the Maysville-Lexington Highway,—County Road Engineer DuVall is Pictured in the Foreground

19½ miles of additional state highways. In the construction of all of these roads, the state has given to the county three for one, so that when the Mason and Lewis road is completed, the county will have received \$1,350,000 worth of high-grade improved roads for the \$350,000 of its bond issue. It will further have a credit of some \$57,000 with the State Highway Department, which may be used at a future date in the construction of the Mt. Carmel Highway which already has been designated as a state road. Thus, in the end, the \$350,000 bond issue investment will have returned something better than \$1,400,000 in road value.

CROSS ROADS PROBLEMS

A Gigantic Task

Prior to the carrying out of the above outlined road program Mason County had a total of 270 miles of county roads.

But with the completion of the state road program this will take a total of 52 miles, leaving a total of 218 miles of cross roads to be maintained out of the small sum of \$57,000 annually or the sum of \$261 per mile.

At the same time that Mason County undertook the State Road program the administration also undertook to bring up the cross roads and laid out a well arranged plan upon which to operate.

An engineer was employed to make a thorough survey of all roads and bridges in order to ascertain the real condition of the road situation from a cross road standpoint and to determine the most feasible and most practical plan to meet conditions with the small sum of \$260 per mile. This survey was carried out over a period of three months and a final report was made to the Fiscal Court and the advisory board of the Mason County Bond Commission.

The facts obtained as the result of this survey showed that the total mileage of Mason County to be 270 miles as given above. And it furthermore proved that these roads were bought in 1896 at a cost of \$60,000 and that bonds were issued for this amount of money and this bonded indebtedness was eliminated in the year 1918, twenty-two years later, thus with a first cost of \$60,000 plus the interest over the entire period of 22 years showed the total cost of Mason County's original investment in roads to be \$120,000.

The report further developed the fact that while there had been some effort in almost each and every case to combat this problem conditions indicated that the funds used for this purpose were entirely insufficient. That there was a lack of side drainage as well as cross drainage, further the surfaces of most of these roads were entirely gone and that viewed from all angles that this was another problem facing the administration of Fiscal affairs which was equally as perplexing a problem as that of the main highways which had been provided for out of the Bond Issue of \$350,000.

The report further revealed that to bring the cross roads up to standard that a long period of time would be required and that the cost would be astounding.

A final summary of these costs showed as follows on 220 miles of road.

Cost of Ditching -----	\$ 37,428.59
Cost of Surface Stone ----	359,590.98
Cost of Culvert Pipe -----	15,705.50
Cost of Bridges -----	77,963.70
Cost of Excavation -----	5,718.50
Miscellaneous Structures ---	5,359.30

Total required -----\$501,766.57

Just here it might be well to state that Mason County's tax money is distributed as follows:

State Tax—\$.30 on the \$100.00—21.4 per cent.

County Tax—

General Claim—\$.21 on the \$100.00—15.1 per cent.

Infirmity—\$.04 on the \$100.00 —02.9 per cent.

Bonds—\$.20 on the \$100.00—14.2 per cent.

Schools—\$.40 on the \$100.00—28.6 per cent.

Roads—\$.25 on the \$100.00—17.8 per cent.

Total—\$1.40 on the \$100.00—100 per cent.

In other words the administration saw before it over a half a million dollars worth of work to do with a fund of \$57,000.00 annually available with which to do the work. With this gigantic task in view the County Judge prevailed upon the Fiscal Court, composed of three Commissioners, to employ a competent, qualified Civil Engineer, to qualify under the road laws of Kentucky to supervise all operations and to have control of the entire situation from beginning to end.

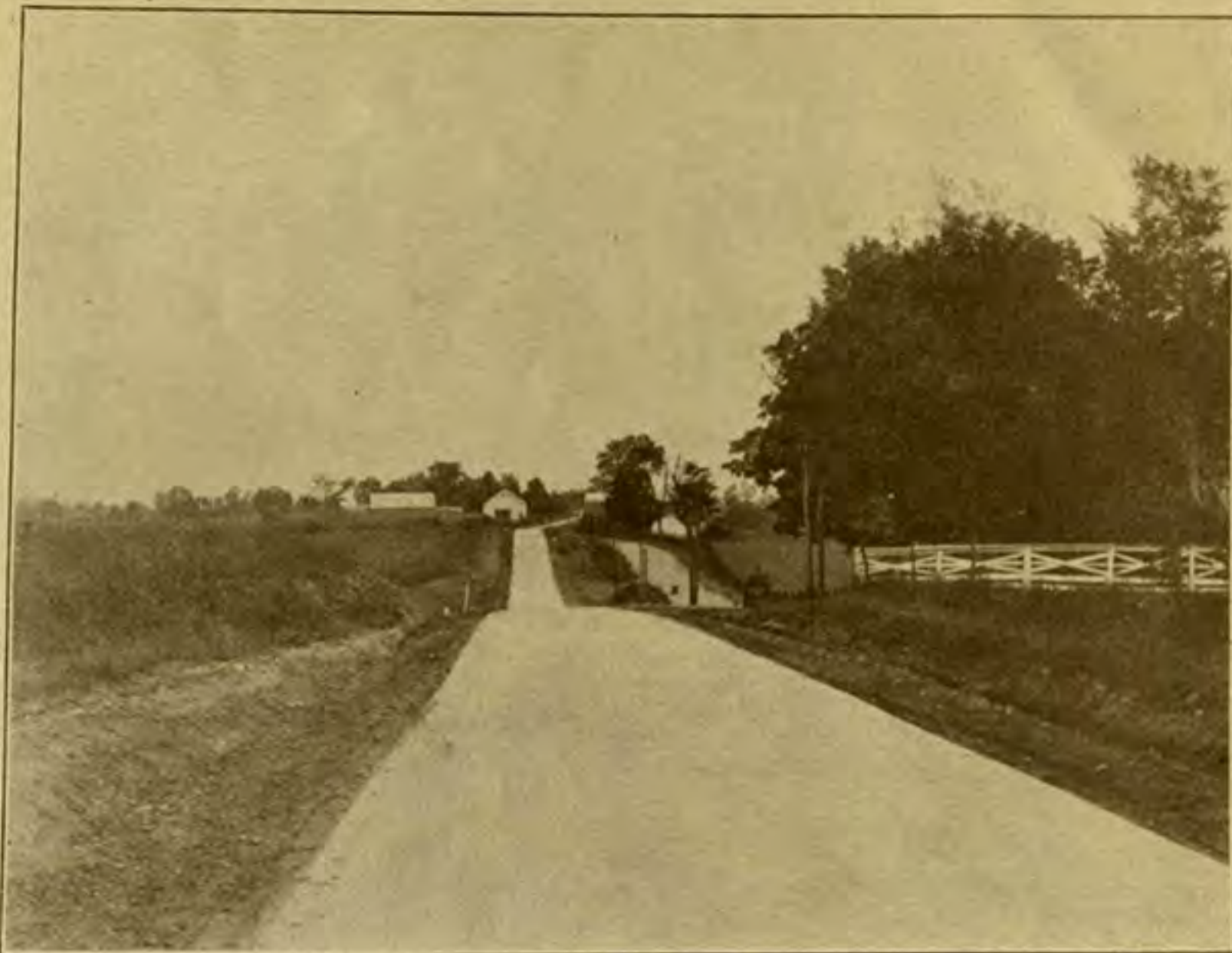
They fully realized that while these roads had been lightly constructed and were in a bad condition that they would have to carry all traffic while the main highways were being constructed. So they immediately proceeded to take an inventory of all equipment and junked and discarded all machinery that was in bad repair or too antiquated for modern use.

Three new International Trucks of the Heavy Duty Type, four Ford Dump trucks of one ton capacity, an air compressor, two motor graders, three Fordson Tractors, were purchased new at a cost of \$20,000.00 and with the remaining machinery salvaged from what was already on hand the road equipment was whipped into shape.

Accounting System Installed

Because the funds with which to do the work were inadequate the engineer in charge deemed it all the more necessary that a strict accounting system be installed in order that each and every penny of the taxpayers money could be accounted for in detail. So today any one interested can walk into the office of the County Road Engineer in the County Building and inform himself accurately as to the amount of money expended upon any road in the county, to whom paid, the date upon which it was paid, for what purpose and whether it went into material or labor, even to as small an item as a gallon of gasoline or a quart of oil. Monthly typewritten reports are made to the Fiscal Court at their regular meetings and filed in the office of the County Clerk for "Public Inspection".

To do this it is necessary to start with a time card on each man and each machine and showing the classification of the work done, the name of the person or



A Long, Straight Stretch of Perfect Roadway,—Another View of the Maysville-Germantown Highway

machine employed, the number of hours of service rendered and the rate paid. This in turn is paid at the end of every two weeks by checks drawn on the County Treasurer, bearing serial numbers and these checks are signed by the County Road Engineer and countersigned by the County Judge.

In addition to this a cost sheet is kept on each road, showing by items all kinds of work done upon each particular road and finally the total cost.

Furthermore, there is a ledger kept showing a complete record of all men employed and containing all the accounts of individuals and the various business firms with whom the Mason County Road Department deals. By turning through the pages of this ledger one can readily determine the amount of money paid out to any individual or firm and he can readily tell what volume of business any one merchant has gotten at the hands of the Department.

At the end of the year a final summary is made showing in detail the whole ex-

penditure for the year, which report is published for the benefit and information of all concerned.

Methods Of Operation

The County's road work is done by two methods. That is to say, that on some pieces of construction the necessary labor is employed directly; others are let by contract. When done by contract the law requires that sealed bids be received and bids awarded according to the judgment of the Road Engineer, with the approval of the Fiscal Court.

For the crushing of stone both portable and stationery plants are used. Where stone has to be quarried central crushing plants are installed at some convenient point to several roads and the stone is contracted for at a price in the bin. County owned trucks, operated by expert drivers handle this stone from the bins to the various roads undergoing repairs. The stone is weighed and paid for by the ton at the bin.

The portable type of crusher is used



Maysville-Flemingsburg Highway. A Unit of the Primary Road System of the State



Mason County's Road Machinery,—Present Equipment of the Road Department is Valued at \$35,000

mostly in the vicinities where surface stone is used and is either stacked in piles or strung along the roads in the more remote sections where traffic is lighter and large quantities are not available.

The cost per ton of crushed stone in place upon the road in Mason County from the quarries is \$2.00 per ton or \$7.20 per rod.

The cost of surface stone from the fields is a little cheaper but in most cases the stone is not available in large quantities due to the fact that it is hauled by the land holders during idle times between seasons and when their crops require their services the road work would have to be left undone.

The cost of ditching road properly, taken on an average would run into a cost of \$500.00 per mile. This work is done by first loosening the earth and pulling it upon the surface of the road and it is then loaded into trucks to be hauled away. Corrugated iron pipe is most used for side and cross drainage. It requires about 120 feet of pipe per mile in Mason County. This pipe cost on an average of about \$2.25 per foot in place upon the road.

Rolling stone or dragging until it is bonded cost about 20 cents per ton. Therefore the cost of an average mile of cross roads in Mason County would be as follows,—(Hauling cost is based upon an estimate of 2½ miles average haul).

Crushing 2,000 T @ \$1.29 per ton	\$2,580	49%
Hauling 2,000 T @ .50 per ton	1,000	19%
Rolling or Dragging 2,000 T @ .20 per ton	400	8%
<hr/>		
Total cost per ton	\$1.99 per ton	
Ditching per mile	500	9½%
Cost of placing pipe per mile	270	5%
Cost of bridges per mile	500	9½%
<hr/>		
Total cost per mile	\$5,250	

It can be readily seen how far one can get in one year with \$57,000.00 when an average mile of road would cost \$5,250. In other words you could build approximately 10 miles of road and with a total

mileage of 220 miles of cross roads to care for, it would mean that it would require exactly eleven years with no maintenance fund left to care for the roads built each year.

These are the facts that should be brought home to the taxpayers of Mason County now. Experience has shown that about 49 per cent of the cost of a mile of road goes into the crushing of the stone. This means that out of the annual road fund of \$57,000.00 per year for cross road purposes that \$27,930.00 goes for the crushing of stone alone. The average crusher will crush a daily output of about 125 tons. Basing our calculations on the price of \$1.29 per ton in the bin it would mean that the money would be spent at the rate of \$161.25 per day. Therefore it would require a period of 173 working days to spend the entire road fund available. Assuming that each part of the county would feel that it was entitled to an equal share of the road fund this would mean that if four outfits of equal capacity were employed that the work would be completed at the rate of

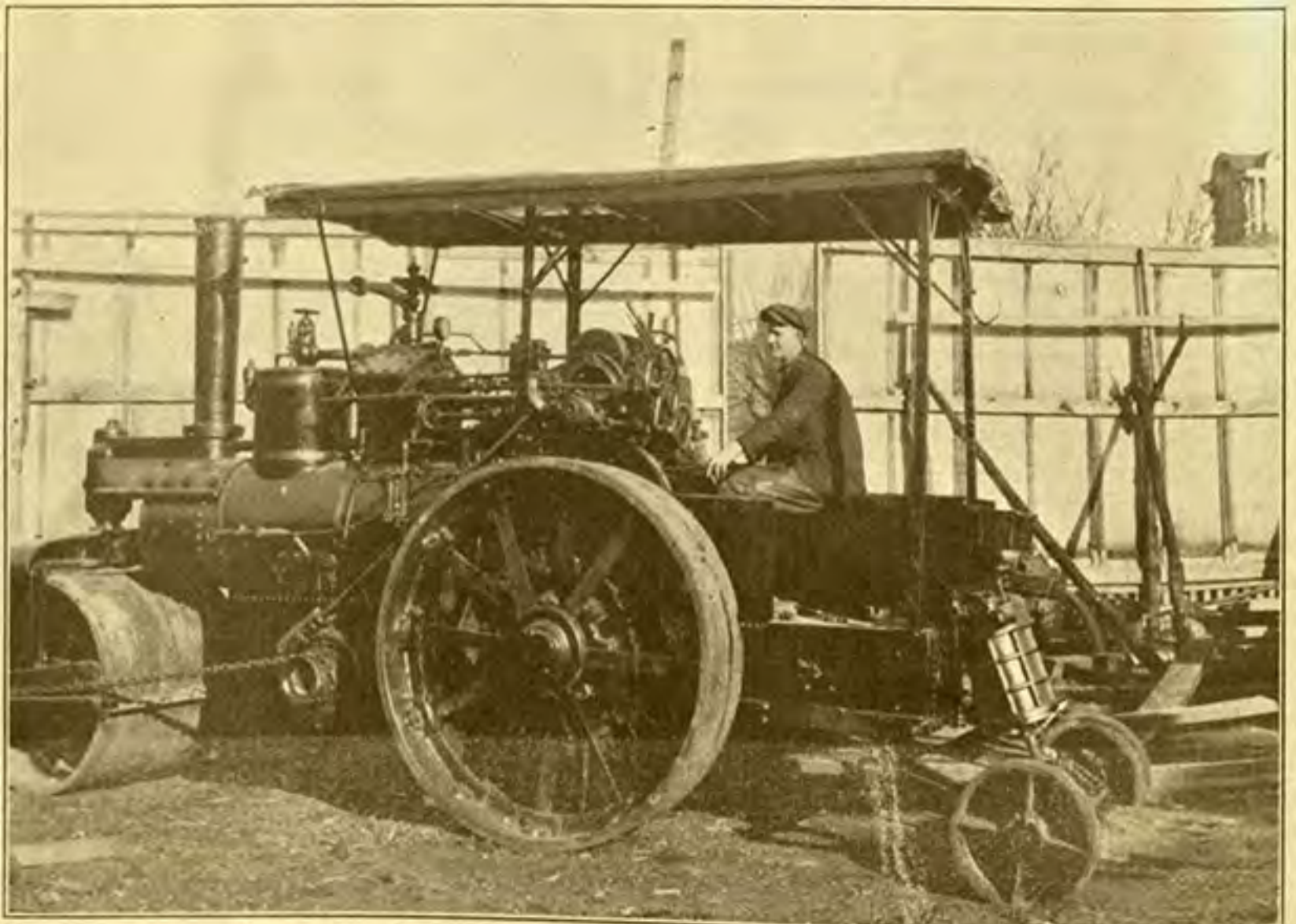
500 tons per day at a cost of \$645.00 per day and that approximately 11 miles would be completed in a period of 43 working days and the road fund of \$57,000.00 would have been expended before the public had realized that the equipment was ever working.

Taking into consideration that 180 working days is looked upon as a maximum average working season taken over a period of years, we can readily see that if we only worked for a period of 43 days that 137 days out of the working period would be lost and all men would have to be discharged, the equipment would lie idle and be eaten up by depreciation and interest on the investment. The effect of efficient organization would be lost, and the economic loss to the merchants throughout this county who benefit from the daily payrolls of road labor as well as the loss to the farming communities from a marketing standpoint would be great.

To relieve this condition there should be at least \$200,000.00 per year available for road purposes. 44 miles of road could be constructed the first year and then there would yet remain a total of 174 miles at the beginning of the second year. \$44,000.00 could be set aside for maintenance and \$156,000.00 would be available for construction each year thereafter out of which 30 miles could be built and maintenance cared for, thus requiring a period of 5 years for completion and surface treatment of the entire system.

As means of securing the necessary funds for carrying out the program of road improvement as outlined here, two methods are suggested. First,—proper legislation could be secured authorizing the levying of a two cent per gallon gasoline tax by the county; or, Second,—a twenty cent special road tax could be voted with the approval of the taxpayers.

Either of these methods would yield the necessary revenue to complete the desired program within the five year period suggested above. At the end of that time, so large an annual road fund would not be necessary, and the tax for this purpose could then be repealed.



Monarch Road Roller Used in Road Building in Mason County