A WAY TO BUILD ROADS THAT WILL STAY BUILT

H. M. Hayworth Writes at Length on Rouds Oregon Needs Editor Courier:-

I believe that as a matter of cooperative helpfulness farmers should make reasonable efforts to impart to each other such theories and such practical knowledge as they have gained by observation, experience or otherwise; and, on subjects that pertain to the weilfare of all classes all others should do likewise in such plain and easy terms that our children can readily understand them. Possibly each one may have in

some way gained some knowledge in one or more directions that many others have not, and so by writing it up for the free columns of The Courier, or otherwise imparting it, more or less good may be done. Feeling under obligations to farmers and society in general and having a good healthy interest in the wellfare of all and in good roads, good laws and good times and good things generally, I am willing to do what I can as time and health may permit.

I am inclined to first take up the matter of uniter-drainage in connection with farming and road building, as I was born and raised on black walnut soil from three to six feet deep in one of the richest and muddiest parts of Illinois and of the United States Oraggon's climatic conditions. ted States. Oregon's climatic condit. ions during winter and spring months are quite similar to those of the late fall and spring months of Illinois, and the mud ranges very much the same, so that what I write may be of local advantage. If so, well and good; my time will have been well

I will say first that to get the best results a thing must be done right; and to do it right it must be done according to certain underlying principles—for principles to us in all the activities of life are what the steel activities of life are what the steel rails and roadbed are to the great and almost all-powerful mogul that carries its great loads of precious human freight across the continent. They support its weight and guide its wheels and otherwise help—without these rails and roadbed its great power sould power he brought into power could never be brought into helpful activity. So it is with the un-derlying principles in all things. Road-building must be done according to certain principles to get the greatest and best results possible

The roads that we now desire are naturally of three parts: the road-bed, the foundation and the superstructure or surface work. No one is so ignorant as not to know that very much depends on both the roadbed and the foundation. The main thing in each of these is their power of re-sistance to heaft and this resistive power depends on weight or tonnage to natural wear on the solidity and compactness of each, and espec-ially of the subsoil and surface soil or roadbed. Water softens and loos ens the soil and so weakens it, hence the special need of under-drainage is greater than that of surface drainage; for the greater the quantity of under-surface water, the weaker the roadbed. Under-drainage will drain both the surface and subsoil, while surface drainage only cares for the

taken up by farmers and road authorities in Vermillion County, Ill., where I was raised in about 1872. The results were so marvelous that after a few years everybody was "doin it." So that when we came west in 1809 So that when we came west in 1809 the entire country was almost underdrained by an almost unbroken network of tiling, many farms being under-drained by tile put in every 10 to 15 rods on both high and low land alike, and from one to three tile ditches put in under the county roads. The whole country looked as if both on the farms and in the county roads. The changes were marvelous both on the farms and in the county roads. The changes were marvelous the land had been raised several feet higher. County roads that during spring thaws, ranging from the middle of Hebruary to the middle of March, were almost impassable to teams and light farm wagons, were being traveled at highest speed by driving rigs and fair loads were hauled by team and wagon on common ed by team and wagon on common dirt roads. Where two tile ditches were insufficient a third one was put in the center of the roads. Side sur-face ditches were made ample to carry off surface water during floods and all bridges and culverts were wi-

main six inch ditch of about 80 rods I would suggest here, therefore, that I put through a ridge at a depth of three feet at both the head and the outlet and seven feet through the centrol of the present of the prese ridge. I took up the fall until after the ridge was passed, when the natural fall was allowed. An adjoining neighbor then took it on across a county road to a total length of some 120 rods. The slough was drained perfectly by this ditch and a few laterals. The force of the flow was so great that I could not force a heavy two-inch oak plank down at the lower and of the tiling within less than two feet of the end of the tile. The

size of a lead pencil would spurt up, many of them to a height of two feet and some of them even three feet. Throut my many years of travel and some of them even three feet. Throut my many years of travel and some of them even three feet. Throut my many years of travel and some of them even three feet. Throut my many years of travel and some of them even three feet. Throut my many years of travel and some of them even three feet. Throut my many years of travel and some of them even three feet. Throut my many years of travel and some of them even three feet. Throut my many years of travel and some of them even three feet. Throut my many years of travel and some of them even three feet. Throut my many years of travel and some of them to a height of two feet and some of them even three feet. Throut my many years of travel and some of them to a height of two feet and some of them to a height of two feet and some of them to a height of two feet and some of them to a height of two feet and some of them to a height of two feet and some of them to a height of two feet and some of them and ton the farmer is right in his crop and giztared. That is he lacks sand and supervisors. Get it?

The one great weakness in the farmer is right in his crop and giztared. That is he lacks sand naturally, surface drainage is very colorado and other states, whose important. In my travels over a num-soils and climatic conditions are so ber of Willamette Valley counties and different from Oregon.

What Oregon should do is to find drainage is not nearly what is deducted and the state of the state manded, especially in times of heavy built upon its muddy road beds, will rains and floods. The smaller bridges and culverts are generally too narrow appearance, our likes or dislikes. and culverts are generally too narrow and often not high enough to let the water pass off quickly, and the results are wash-outs, roads overflowed and washed off, backwater and mud. The side culverts and bridges into farm gates are nearly always too low and too narrow. Where streams run down by the roadside roads is proof that we do not know what we want, what is best, what streams run down by the roadside roads is proof that we do not know their beds are often too narrow and shallow to carry flood water, and the cost, nor the durability of new surface drainage; invest good and spirit, while what he did do was the roadbeds being low there are heavy overflows and wash-outs as the re-

Hillside wet weather springs and eepages are allowed to come to the urface and run down the roadbeds, and often these continue to run until nidsummer. Under-drainage is the one remedy for this trouble. There one femedy for this trouble. There are but few if any hillsides or seepage anywhere that burnt tile properly put in will not drain perfectly, and it certainly would be well to complence experimenting at once. The principle is to cut seepage of onder ground above where it comes at the surface. o the surface.

No hillside road should be finished n any way until it has been well unler-crained, nor should any other oad in Oregon on either high or low and probably with some little exceptions. Many side ditches are not of continuous fall and so long stretches f water are left standing after the low has ceased and in many places he roadbeds are covered during he roadbeds are covered during neavy rains and floods on this account. It is also a notable fact that ninature lakes and ponds and pudlles and stretches of water are al-lowed to accumulate right in the road and chuckholes are worn; and nothing is done to let this water off or chuckholes until what we term the roadworking season comes on.
All these defects ought to be remedied at once, and the remedial work
should be continuous. Supervisors should ever be on the watch with both funds and materials to rectify these conditions or rather to make use of the ounce of prevention.

The next thing that should be done to the roadbed after under-draining, grading, etc., would be to invent some kind of a tamping device, on the surface drainage only cores for the surface drainage only cores for the gether will do the work more quick-principle of the piledriver, and just hammer the roadbed down until it is hammer the roadbed down until it is ositively compact suppose this cannot be done, but to make the best possible roadbed it should be made as solid and dense as possible.

This brings us to the foundation itself, where the main strength of all really durable roads lie, and espec-ially where the bed has less resisting power than desired. It is my judgement that macadam with a founda-tion of large stones is the most dur-able, the most practical and most inexpensive of any kind of really permanent road now in use on wet and muddy roadbeds. The strength is in the foundation and the weaker road-bed will have or can be given proper resistive power to support a heavy stone foundation, properly put down. Strength can be added to the foundation by filling in with cement at comparative light cost.

Much is now being written about the "\$17,000,000 waste on Oregon county roads" within the past few years. Kindly allow me to forcibly impress upon the public mind that the gravel and stone that has been forced down into the muddy roads of and all bridges and culverts were widened sufficiently to not retard the flow of high flood water.

Our little Vermillion river that was 10 to 14 days reaching high water mark was always at high water and receeding within 30 hours and usually within 24 hours.

I tiled out my farm of 105 acres in about 1878 at a cost of \$500. One in about 1878 at a cost of \$500. One in graveling has not been lost. Oregon will give our roadbeds the

two-inch oak plank down at the lower and of the tilling within less than two feet of the end of the till. The water shot agit like the force of a cannon ball. I was young and very strong then, and was anxious to test the force of a ditch without fall except it is head.

Another 6 inch main ditch was six feet deep at the lower end and three at the head in another slough, and the fall was taken up in this ditch until I got to where I was sure of three feet at the upper end, while was probably three-fourths of its entire length, and I. presume that its force was about the same as the other one. My reason for putting these ditches in the way I did was to have a good outlet and to have them in my barn lot where a spring branch headed where I could have them under my control.

The first apring, in March, after these ditches were put in I planted my faster and much heavier over the ditche, and that is very early for early potatoes in Illinois. I noticed that crops grow, and the some faster and much heavier over the ditches, the distance on each side and the same faster and much heavier over the ditches in limit to be constituted its first and they can afford coming out in kid gloves, silk hats and automobiles, kild gloves, silk hats and automobiles, will that and they are to be commended for keeping so well within their means as compared with town and city gope, whose homes are under mort.

Some 47 years ago Vermillion.

Some 48 years and the town depth swith any anades well with the means as compared with town and city people, whose homes are under mort.

If it has not yet been discovered the introduce of the intermets parelly are real business from the grow of the present chart its force at the upper end, which is a with the same as the other one and the level. When I left the same as the other one and the product of the present chart

in Illinois. I noticed that crops grew faster and much heavier over the ditches, the distance on each side case with the stone foundation of ranging according to the depths of the ditches, and the soil pulverized most beautifully. When digging ginning Consequently it is only a these ditches streams of water the distance on each side case with the stone foundation of true and strength is on its surface rather than other systems are neither the fariers, nor are they our road supervisors. They did not organize our funds under our present road and other systems are neither the fariers, nor are they our road supervisors. They did not organize our funds under our present system, are gathered together at Salem and road systems and laws, nor are they our county seats, where buzzards can do they control or work them. All naturally have good picking. See?

strength will be broken and rebuild-|other systems and how abortive their | "WOE UNTO YE efforts have been to improve them Hard surfaced road, as I understand during the past few years. All know withstand heavy tonnage placed on Oregon's weak road beds must need and other systems are run and conessarily cost from \$12,000 to \$20,000 trolled by our state capital and counper mile. Can we afford such an out-lay by bonds or otherwise at this time?

fair of joy riders home-mortgaged this case the innocent are being pun-auto riders, auto clubs and Live ished for the deeds of the guilty. Wires.

No. It's just the affair of our good old long-headed "Uncle Reube."

MASE HEIGHT 3 FEET BINCHES

DOCTORS AND DRUGGIST" the dissipation went on.

Lady Voter Asks Why Irish was the Only Man Advertised

After several weeks of feeling haunted by a neglected duty, I take up the pen in hopes of finding relief.

I will begin by quoting from the Bible "Woe unto ye doctors and lawyears." I am sure they should have added druggist to the list but perhaps there were no druggists when

four weeks ago in Oregon City for ing man is laying a heavy cross on drinking and treating on the streets. those that love him and there is the is quite a large one, and no doubt some of his family suffered acutely Again, owning them and paying the bills it is their right to "boss the job," and, if they prefer going thru mud to the heavy burden of interest-bearing bonds and other taxes, why, it's their own affair. It is not the affair of its right to the same and degradation was the fine suffer more than the father, so in

Now for questions. How did this man get the prescription? Any doc-tor would know that he did not need If allowed I would just suggest a bottle of liquor. No honest doctor that our authorities just keep right would have given him whiskey oron forcing good gravel down into our weak road beds; take up the work been to give him a bit of good advice,

High Carbon Bea

eth set stagger

drink, growing wider and wider as

The drinker does not seem to com prehend his condition and resents GOOD ROADS FOR THE FARMER even a hint against drink and goes AT HOME.

In any case there are those that love them looking on in silent anguish, and that is this when the bonds na-silent because of shame on one side ture. Congress might be in good hu-and fear of offending the devotee of mor some day, and turn them over the bottle on the other.

And there is the idea among the drinkers that it is no one's business except their own. This is one of their greatest mistakes for there is the human tie that binds and the drinkfamily name. No one has a right to put a stain on the name that another er bears.

According to the constitution the United States we have the right of doing as we please so long as we do not trespass on the individual rights of others.

Now when a man drinks he trampling on the hapiness of his family and friends, and must be a riolator of one of the first and best laws of our land. And when we view the wrecks of men and consider the ties that bind, all broad minded, humane men and women will unite in cleaning this pestilence from our

I am glad to learn that there are so many men and women interested in the cause. This drink habit is a stupendous imposition on the lives

and hapiness of women and children.

It is to be hoped there is not another doctor in Oregon City who will prescribe booze for one of the to be pitied class of drinkers, and if it happens again I pray retribution may follow close on the deed, be it wife or friend of the drinker who brings

Yet a Dream Oregon City, March 2, 1914. Editor Courier:- In your paper of the 26th of Feb

ruary, 1914, I read in the Oregon Equity News a few questions. Per-mit me to answer the one "If you were governor, what would you do with the unemployed?

As for the unemployed man, would not do a thing, for I think there is not a man from the north to the south wants employment if his fellow man forces him to work.

As for the unemployed tools, machinery and land that could be producing, but are idle, standing still, or vacant, I would give its owner 24 hours to make it produce, or it would belong to the state, and for taxation, be rented out to willing hands out of employment that they might make a living also.

A confusion caused by confiscation and the wheels in Oregon would start to buzz and progress would com-

G. A. Henrix.

Notice for bids for the Construction of a County Road

ty, Oregon, furnishing all material, nected with said road according to the plans and specifications now on file in the office of said clerk. Said venting undesirables from marry-ing it should assume the burden of and Milwaukie road and commonly known as the Oatfield road, beginning at the southerly end of the bridge across Kellogg Creek in Sec-tion 1, T. 2. S. R. 1 E. and running thence southerly on said road a distance of about 4,566 feet.

Each bid must be accompanied with a certified check to the amount of ten per cent of the amount bid to insure the entering into a contract by the bidder, should the contract be awarded to him, which check shall be forfeited to Clackamas county should the bidder refuse to enter into contract after the same is awarded to

The contractor to whom the con tract is let will be required to furnish a suitable undertaking to guarantee the completion of the work as provided in said contract and also to guarantee the fulfillment of the law respecting the hours of labor, mater-ial furnished by material men, etc.

in which the contract will be com-pleted, and said contractor will be required by his bond to save the county of Clackamas harmless in respect to damages accruing to any one during the prosecution of the said work. The Court reserves the right to

Each bid must state the time with-

reject any and all bids.

The bids will be received at the office of said County Clerk up to the hour of five o'clock on March the 12th

By order of the County Court. W. L. Mulvey, County Clerk.

Courier and Twice a Week Journal

Notice SEALED BIDS will be received b

he County Clerk of Clackamas Coun ty. Oregon, up to 5 o'clock P. M., on the 12th day of March, 1914, for the improvement of a road leading from milwaukie to Oregon City, and commonly known as the River Road, from Station 86 plus 60 to Station 107.

All work shall be done in accordance with the plans and specifications now on file in the office of the cold County Clerk, and all hids must said County Clerk, and all bids must be accompanied with a certified check

doctor and druggist."

Now I don't know much about law but I advise families of drinking men to come to the front for they will find plenty of help and sympathy, and if there were a few examples fulfillment of the law respecting the made of those who cater to the vices hours of labor, material furnished by material man, at-

material man, etc.

Each bid must state the time withpleted, and will be required by his bond to save Clackamas county harm-

Continued from Page 1

even a hint against drink and goes on his way blindly hugging his worst enemy, while his family and friends see all his best qualities dying, leaving a living skeleton as a daily reminder of what he might have been. This drink question reaches the most sacred and tenderest ties of the human family. The incepriate may be a father, husband, brother or son. In any case there are those that love

AT HOME.

Boosters, let us take up this proposition with our representatives in Congress, and if successful, good roads will be here in no time and the country will see the most prosperous time it ever had, like Germany when it spent billions for permanent public highways after the Franco-Prussian war.

Another thing I might mention

Another thing I might mention and that is this when the bonds nato the respective counties CANCEL-LED as an Xmas present.

Respectfully yours, H. W. Hagemann.

LOGAN

The bees are now gathering nourshment from the pussy willows Mrs. Martin Cooper, nee Elsie Fallert, of Sellwood, is visiting at her brother's Mr. Karl Fallert.

Our late neighbor, D. C. Fouts, was interred Monday at the Logan Cemetery. O. D. Robbins is taking orders for

a carload of wire fencing. He wants to send East for it. The annual meeting of the stock-

holders of the Clear Creek Creamery will be held next week. A full attendance is desired. The state of Idaho has quarantin-

ed against California potatoes, on account of the potato moth. Washington intends to do the same, but our Mr. J. D. Mickel, state dairy and food commissioner, to whom this matter was referred by Governor

was referred by Governor
West, doesn't seem to pay any attention to it.
NO WONDER OUR JONATHAN
BOURNE, JR., IS OUT FOR U. S.
SENATE AGAIN—SISTER'S WILL
LEAVES HALF A MILLION IN
TRUST FOR HIM.
BOOKER FOR AGA (Special) RV

Boston, Feb. 24.—(Special)—By the will of the late Mrs. Hannah B. Abbe, of New Bedford, her brothor friend of the drinker who brings action. I am sure they will find plenty of approval and help, and "NEVER GIVE UP" is the watch-land, Ore., will enjoy during his lifethe income from more than \$500,000. The testator is a daughter of the late Jonathan Bourne, of New Bedford, and leaves an estate valued at \$1,250,000. The will was allowed in probate today. After leaving bequests of more than \$200,000 to relucious and adventional conjeties. ligious and educational societies, Mrs. Abbe provides \$20,000 for the payment of an income for life to Miss Addie T. Jenney of Fairhaven, an old school friend with whom she was associated during her life.

Half the residuary estate goes to her sisters, Emily Bourne, of New York, and Elizabeth Pearce, of Provi-dence, and to her niece, Mrs. Emily B. Michler, of Providence, and the income of the other half goes to her brother, Jonathan Bourne, Jr. On his death the principal goes to her sisters

and niece.

Alfred Townsend Hartford, of Cambridge; Charles H. Delano and Oliver Prescott, Jr., of New Bedford, are named as executors and trustees.

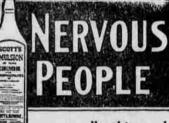
A SOUND DECISION

Milwaukie, Jan. 20.—The Wisconsin engenic law regulating the issuances of marriage licenses was held unconstitutional today by Circuit Judge Eschweiler.

Among other things, the court says the law which provides for a physician's certificate including the Notice is hereby given that sealed bids will be received at the office of the County Clerk of Clackamas Counand that it coinflicts with religious liberty because it tends to halt mar-

The court held that if the state weeding out the unfit and not cast upon the fit an unfair demand, and thus materially impair an inalienable Schmidt made application for a marriage license at the office of the Milwaukie County Clerk on January 2, the day on which the Wisconsin eugenic law went into force. Clerk Widel refused the petition because the man did not have a certificate, of health from a physician as demanded by the law.

Petersen immediately sought recourse in the courts, and today's de-cision by Judge Eschweiler will enable him to secure the marriage license without the medical examina-



are usually thin and easily worried, sleep does not refresh and the system gradually weakens from insufficient nourishment.

Scott's Emulsion corrects nervousness by its force of concentrated medical nourishment -it restores the healthy action of body cells, enriches the blood, sharpens the appetite, and feeds the nerve centres by distributing energy and power all over the body.

Don't resort to alcoholic mixtures or drug concoctions that stimulate and stupefy. Get a bottle of Scott's

Emulsion for your nerves-nothing equals or compares with it, but insist on Scott's. EVERY DRUGIST HAS IT

Oregon.

Dr. A. McDonald

Veterinary Surgeon

Office, Red Front Barn Phones: Main 116 B-9 OREGON CITY

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Northwest's Impement and PORTLAND, ORE. SPOKANE, WN. BOISE, IDAHO

kinds of expensive roads. These facts therefore, should prove to us that bonding at this time will be premature and that it will prove wasteful

Farmers have gone slow because hey have been compelled to do so.

and therefore unwarranted.

plenty the funds in burnt tile in under-drainage. These three lines of why were the doctor's and drug-work will prepare our road beds for gist's name so carefully withheld whatever kind of good roads that from the public? Was it out of remay be finally constructed as nothing else can, and when prepared, we ings, their reputation, etc? I have can consistently bond if there is any not learned the names of these gen-consistency in bonding at all. Hop-ting this article (written at length) sonal, but it is plain that the doc-will be helpful to some one or more tor was the main transgressor, and

I submit it to your readers. Respectfully yours, S. M. Haworth. P. S. I think that I should add that in under draining my farm in Illinois and drawing the water off thru higher land and up hill (so to

Greatest

Vehicle

House

if he had not done wrong the druggist would not have had an excuse to supply an inebriate with the destructive stuff that all human people are trying to save such from. There is no excuse for a doctor to have done such a thing, and he should have pa-id the tipler's fine if there had to be a fine. I think solitary confinement would have been good for all three offenders. A fine would not effect the doctor or the druggist very much as their money comes so freely but the drinking man's family needs all his income.

Now whose duty is it to bring such transgressors to justice? It is well for the doctor and the druggist that I would have camped on the trail un-til it would have been "woe unto ye bidder refuse to enter into a contract

the drink though it robs him of all the work.

The County Court reserves the breach of love has come between husband and wife, father and children, band and sisters on account of the county Court reserves the breach of love has come between husband and wife, father and children, brothers and sisters on account of the county Court reserves the right to reject any and all bids.

W. L. Mulvey, County Clerk.

or the doctor and the druggist that for ten per cent of the amount bid am not the wife of the culprit for which bid shall be forfeited to Clack.

of the deprayed it would have a wholesome effect. Any man worthy Each bid must state the time with-of being called doctor knows that in which the contract will be comstrong drink unbalances the human anatomy and in some temperaments results in a form of insanity the vicresults in a form of insanity the vic-tim cannot resist and he will cling to the drink though it robs him of all