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**Ohio Mining Journal**

**Title:** The Iser vs. the Waser: Some Reminiscences of Past and Present Mining, With a Glimpse Into the Future

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**Issue Date:** 1898

**Citation:** Ohio Mining Journal, no. 27 (1898), 60-66.

**URI:** <http://hdl.handle.net/1811/32790>

**Appears in Collections:** [Ohio Mining Journal: Whole no. 27 \(1898\)](#)

## THE ISER VS. THE WASER.

## SOME REMINISCENCES OF PAST AND PRESENT MINING, WITH A GLIMPSE INTO THE FUTURE.

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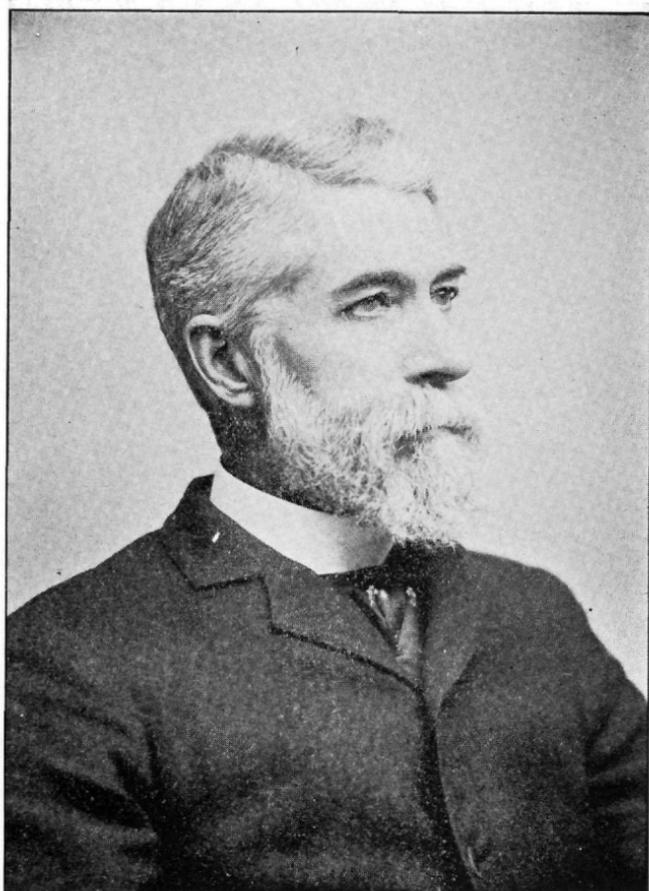
J. S. DOR, COLUMBUS, OHIO.

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It was my good fortune, not long since to listen to an address delivered to a graduating class, by one of the professors. To illustrate a point he told the following story. "As he was walking along the street of a neighboring city, he was attracted by a crowd of Street Arabs, who were apparently in the midst of an animated discussion as to the merits of two leaders, one youngster, who appeared to be a new-comer in the community, was strutting around very pompously, endeavoring to convince the other boys of what great things he *had* done, as the leader of the boys in his old home, his auditors were looking and listening to him with different degrees of interest, at last, one boy who appeared to be the leader of the gang, becoming disgusted with the braggadocio of the new boy, broke out with the exclamation, jess look at him *fellers*, he is a "*Waser*," I am an Iser."

While engaged for over six years in selling and installing mining machinery, I have had occasion to visit and inspect many coal mines situated in the various coal districts of the United States, in the majority of these I found the "*Waser*," in that so many of the mine managers were operating their mines after the plans and ideas of the long, almost forgotten past.

In one case, which I call to mind, I was requested, by the President of a very prominent company, to inspect their mines, with a view to the introduction of coal mining machinery. I called upon the manager and found him to be a very fine old gentleman, who had been in charge of the mine for over forty years. he at once declined to allow me to inspect the mine for machines, he said he did not believe in them, they had no need of them, they were no good, etc. Seeing the bent of his mind, I changed the subject, and afterwards quietly asked him to show me the vein of coal, as I had heard much about it, etc., he said certainly, but excused himself from accompanying me on account



J. S. DOE



of being so busy, but I will give instructions to the assistant superintendent to go with you. I found a fine large vein of coal, most wretchedly butchered, old ways of fifty years ago, old frame cars, mules hauling on small rail over two miles, old style long lever dumping arrangements, a regular coal smasher, mines at not more than one half capacity, the old gentleman refusing to avail himself of anything new or modern, I did not wonder that he did not believe in mining machinery, he was a "*Waser*."

In these latter days of sharp and close competition, a mine manager who expects to keep in the market, and at the head of the procession, must be an "*Iser*," he must avail himself of every means tending to the improvement of quality and quantity of this coal, and cheapening cost of same, it will not do nowadays for him to say "Oh, that is good enough, my father made money in this manner, etc.," he must keep up with the times, and keep abreast with his competitors.

Take the item of haulage, or mules vs. power, this is one of the vexatious sources of trouble and cost in mining, one that, as a rule, is increasing in cost from month to month and year to year, as we drive more into the hill or farther away from the mouth of the mine or shaft.

It is said that one of the first electric street railways was built and operated in Richmond, Va., and that one of the members of the numerous F. F. Vs of that city remarked, "The Yanks came down *herer* and freed the nigger, now I be blessed if they aint goin to free the mules." The mule is fast being freed from the mines and delegated to the list of "*Wasers*," the time is not far distant, when some of my hearers will be operating mines without a mule or horse.

We have already the Wire Rope haulage in its various forms, we have also the Steam Locomotive, the Compressed Air Locomotive, and last the Electric Locomotive, all of these doing good and economical work in places adapted to their use, by them the capacity of the mines is increased, the cost of production cheapened, in some mines the cost of haulage has been cut down fifty per cent. but all of the above plans have their limits, there is a limit to the length of the Tail Rope, the Steam Locomotive can only be used on Entries, where the steam and smoke will not be a source of trouble, the Air Locomotive seems to be confined to large vein and wide high Entries, the Electric Locomotive, so far, has only been made available for entry work, we still are obliged to use our "*Waser*" or Mule, we must look for the advent of some means of getting to the face of our rooms, taking the loaded car from there direct to the long parting or

gathering switch, our steam locomotive is out of the question on account of smoke, our air locomotive at present, is too bulky, it is not practicable to run the trolley into each room, for our present type of Electric Locomotive, we must look for a type of locomotive, that can be used in any part of the mine, without recourse to air pipes or trolley wires.

To this end much study has been given to the construction of an Electric Storage battery locomotive. I have made several plans for this, but in all my plans, I have been blocked by the cost of a proper storage battery, and the expense of keeping up the same, but I am glad to be able to predict, that in the near future, we will, have a storage battery, that will be cheap, economical and efficient. With such a locomotive, properly constructed, we can distribute our empty cars, gather the loads and quickly deposit them on the gathering switch, ready for the wire rope on larger locomotive.

We would need steel rail track in our rooms, this will prove economical with any class of haulage, the steel track could be taken to the rooms, in sections of say ten foot long each, all ready to place, two men can easily handle a section, such tracks, properly constructed, will prove to be cheaper, in the end, than wood rail, timber suitable for rails is fast drifting into the "Waser" class, it does not grow as fast as we mine the coal.

There is another source of power, which is coming to the front, and demanding a more extended trial to prove its merits. I refer to the use of Gasoline Engines, we have in some sections, more especially in the silver regions, Gasoline Engines in use on pumps, fans, hoisting, etc., and according to the reports so far giving good satisfaction. I see no reason why some Yankee "Iser" cannot adapt this power to all uses in mines. I am aware that some will say that the exhaust will vitiate the air, but there does not seem to be any trouble in the mines where it is in use. Some may say that Gasoline will be dangerous, from explosion, but when we understand what a small quantity of Gasoline will run an Engine all day, and that this Gasoline can be confined within an iron box, and fed to the cylinders through a small pipe, and that no fire is needed, we can put aside our fears of danger from explosion.

The Gasoline Engine can be placed in mines, at less cost than any other source of power, this would bring them within the means of the smaller operators.

With the use of some of these means of haulage, we could do away with the Mule, and the nuisance of the same in the mines, to say nothing of the careless and brutal mule driver.

Referring to saving in cost, I call to mind one installation of electric haulage, where we cut down the cost, on entry, one cent per ton, when we consider an output of from one thousand to fifteen hundred tons screened coal per day, this counts in the profits at the end of the year.

I throw out these suggestions more as hints to what I predict will be the practice within a few years, our manner of handling coal must change to keep pace with competition, when we can educate our miners to the idea, that clean coal, clear of bone and slate, is as much to their advantage, as to the operator, then we can handle our coal faster and cheaper, for we will not be obliged to lose time in inspecting and trimming the coal so closely, but can load it as fast as we can haul it from the mine.

May the time hasten, when the operator and the miner will work together, to the one end of good and clean coal.

PRESIDENT RAY: Perhaps it will be well to dispense with a discussion of Mr. Doe's paper, as he is not present.

SECRETARY HASELTINE: I move a vote of thanks be extended to Mr. Doe for his able paper.

Seconded: Carried.

SECRETARY HASELTINE: There seems to be a prevailing opinion among operators that the exhaust from gasoline engines vitiates the air. I had a little experience along that line, once in particular when a complaint was made that the air was vitiated by the discharge from the engine. But the most careful investigation I could make failed to detect a particle of odor or anything offensive in any way. I think the combustion is so perfect that nothing is given off which can be detected, and I wish to emphasize Mr. Doe's suggestion that in the near future a great deal of power will be used which will be generated by gasoline engines. Mr. Doe was with me at the time I was making the examination I mentioned. The first instance I ever knew of the use of a gasoline engine in Ohio, was to run a pump in a mine on the Ohio River, near Pomeroy. It was installed by one of my first inspectors Mr. Evans. He first saw it on a little steamboat or skiff on the Ohio River. He secured the engine and attached it to the pump and with a gallon and a half of gasoline a day he

was able to dispense with his mine mule and boy, and the expense of a water car which destroyed his roads.

A party in Tuscarawas County wrote and asked me what I thought about putting a gasoline engine in a mine, and I replied that I thought it was all right. A party who was evidently figuring for another kind of plant, wrote me a very caustic letter, and threatened me with official decapitation for interfering with anything which was not my business.

A MEMBER: Do you think gasoline is safe in a mine?

SECRETARY HASELTINE: I do not recommend carrying it in the mine in barrels, but when taken in in small quantities safely confined, I think there is no danger. I was astonished at the amount of power secured from a gallon of gasoline.

MR. OYSER: I had experience with gasoline in a mine, not as power, but using it for soldering purposes, in one of the most dangerous mines in West Virginia. Had a horrible explosion there of what they call "dust" within thirty feet of where I had the misfortune to have a gallon tank of gasoline open. A colored man dropped a stick of wood on it and set fire to it in that dust. I have had other experience of like kind, and I am well satisfied that gasoline under those conditions will not explode. It will burn rapidly, but will not explode. I put one of the worst fires out with an old ulster, with the loss of considerable hair, while about fifteen niggers were running to get out and left me alone to fight the fire. I do not consider gasoline in a mine dangerous as far as explosion is concerned. I have talked it over with Mr. Haseltine and others interested, and I think that in the near future gasoline will be a big factor in mine power.

PRESIDENT RAY: Do you think it is dangerous from the possibility of setting a mine on fire?

MR. OYSER: I would not advocate taking gasoline into mines in tanks or barrels, but in quantity of one gallon or so, I think it is safe.

MR. THOMAS: This question of exhaust is the subject of

a difference of opinion. I read the testimony not long ago of a party in Alabama, who supposed to use a pipe 900 feet long to carry exhaust and return air. I felt interested in the paper and in what Mr. Haseltine has had to say. I believe it is going to be a great power in pumping. I believe it will supersede electricity, be more economical; and I think that any knowledge which can be given on the subject of this exhaust will be acceptable.

MR. LOVE: Mr. Chairman, I inspected a mine where a gasoline engine was used as the motive power for the fan and the location of the engine was almost in the center of the mine. Nearly all the headings were beyond the discharge. Now, I never at any time found the discharge from that engine was in any way offensive; but one time there were a number of empty barrels placed just ahead of the fan, each containing from a quart to a gallon of gasoline, besides what had been absorbed by the barrels, and this created a very offensive gas and made many of the miners sick. On investigation, upon complaint made at the time, no discharge was found to emanate from the engine, and after the barrels were removed there was no trouble. It was afterwards taken away because it was not of sufficient horse power to do the work. It was only a six horse power engine.

MR. DAVIS: I would like to ask Mr. Haseltine if gasoline would explode as readily at a temperature of 55° or 60° as it would at a higher temperature?

MR. HASELTINE: As to that, Mr. Davis, I have really had no experience. While Mr. Love was talking, it occurred to me that there was a gasoline locomotive installed in a mine near Pomeroy, where it was operated a few days when the company became embarrassed and failed shortly afterwards. So there wasn't opportunity to test it. I did not have the pleasure of seeing it work, but from the best information I can get from the people who handle it, it operated successfully as a locomotive, and when it was running there was no perceptible odor from it. But if they stalled and in starting would flood the cylinder, —

that is, would discharge more gasoline than would be consumed by the explosion, then it would give off a gas that would knock a man down. It was very offensive then, and they thought, quite dangerous. But as long as it was running regular and the explosion was complete, there was no perceptible odor from it at all.

PRESIDENT RAY: Are there any further remarks? If none, I will put the motion expressing a vote of thanks to the author of this paper.

(Carried.)

PRESIDENT RAY: Professor Caldwell is now ready to read his paper and illustrate it by means of the proper machinery.

