three-fourths. This is absolutely necessary for if you stop and think a single engine is working under extreme difficulties for as the steam pressure is decreasing, your air is ascending, necessitating carrying of steam for longer period. In duplex engines when side doing compressing is at lowest terminal steam pressure the other side is having full boiler pressure admitted and it takes load off other side and equalizes the loads carried by each engine. There is no question but that you effect a saving of twenty-five per cent. in steam economy and add to this your increased volume, efficiency, your power cost in compressing air is reduced, at least thirty-five per cent. over single stage compression.

The matter of re-heating air is being very much taken up by users. I concur with what the last speaker said as to reheating being one of the important points. While some firms may make rash claims, yet they certainly produce a decided economy. I noticed not long ago a test was made at a temperature of 350 degrees, and they effected a saving of thirty-five per cent. by the use of re-heaters. That shows the results of re-heating. If you are handling a number of small tools where you are using a quantity of air, re-heating of air is a decided economy, and secondarily you are getting the advantage of the full expansion of the air. Under the subject of freezing that has been well discussed.

I do not know of anything further to touch on in the matter. It is a very interesting subject to me, as I have had considerable dealing with air compressors and all these difficulties have cropped up. I would like to say that any person having compressors, (and I have repaired a number of them), that when you are not getting the capacity out of your machine, you will find it is mostly due to the piston packing. It is necessary to have tight piston rings. Another thing is to have your discharge valve perfectly clean and tight. The piston inlet people strongly point out that they get a cooler inlet and get a better capacity from the cylinder. However, the piston valve gets out of repair in a very short time.

Now concerning the matter of explosions, I noticed recently in the United States, in the Old Country and other parts of the world in the different mining districts, there have been serious accidents and explosions occur, attended by loss of life. They attribute these explosions to the discharge of carbon in the oil, and not having the intake pipe in a perfectly clean place. In one case they found it mingled with coal dust. In another case this deposit ignited at 295 degrees. It is, however, well to have oil at a high flash point, and it is necessary that the discharge and receiver pipes be thoroughly cleaned out and looked after carefully. These explosions are becoming very frequent, but I believe are having more care taken of them now.