

Dr. Paul Alexander

Berlin-Charlottenburg 4, May 23, 1942
Mommsen Street 47 III

My dear Children,

For reasons that will become apparent in the following, I am writing this to you, although I have to assume that most of you will only get to know its contents after a more or less long period of time.

On the 11th of this month, I received the news that the patent which I requested on April 16, 1941 was granted to me and that it was given the number 722 226.

Another patent, which I already requested on August 9, 1934, was only granted on February 19, 1941 by a decision of the Appeals Department of the Patents Office, because I had to defend it against stubborn opposition in opposition and appeal proceedings. This patent was given the number 705 363.

German Reich Patents are valid for 18 years, beginning with the day they are registered. Consequently, for my patent 705 363, six years of its term of validity had already passed by the time it was granted. The war conditions which existed at that time and which still continue, prevented and still prevent any attempt to make use of this patent. The same is also true of the recently granted patent 722 226.

Both patents have to do with the production of reclaimed rubber according to the process using solvents that I developed. During the time in which the society existed, this process or a similar one was only used by the Runge-Werke Aktiengesellschaft or its legal predecessor, the Max Fränkel & Runge Firm, Spandau, to produce reclaimed rubber. During the 30 years of its existence, the firm, led by me, produced and sold about 15,000 tons of reclaimed solvent.

In general, an industrial branch which uses old materials and waste materials such as in the reclaiming of rubber, can only be established and remain viable if and so long as the cost of collecting the materials in the places where they are available, their transportation to the place where they are processed, and all the costs for producing something marketable is below the market value of other products that can be used for the same purpose.

In the reclaiming of rubber, the product has to compete above all with raw rubber. Therefore, the latter's market value in general determines the price that can be reached. But precisely with reclaimed rubber, this is not at all the only decisive aspect in its economic production and sale. In the last of my essays to be printed on reclaiming rubber,¹ I published calculations which show that, in the form of reclaimed rubber, more rubber has been used for making finished rubber products during

¹ "L'importance Economique de la Régénération du Caoutchouc au Cours des Cent Dernières Années". Congrès International du Caoutchouc, Paris 1937, Recueil des Communications II, [The economic Significance of Reclaiming Rubber over the past 100 Years. International Rubber Congress, Paris 1937, Anthology of Input II], pp. 47ff.

the past 25 years (1913-1937) than during the previous 75 years for raw rubber, reclaimed rubber and rubber of every other kind all together, and that the profits generated and still being generated by processing old rubber materials and rubber waste amount to hundreds of millions in gold.

As I said, in particular in my still unpublished essay, “100 Jahre Kautschuk seit Entdeckung der Vulkanisation” [100 Years of Rubber since the Discovery of Vulcanization], the quarter of a century during which such huge quantities of reclaimed rubber were used along with raw rubber for making rubber products, was precisely the period during which it was possible for the rubber industry to take an upward trend. It also took this trend because the development of the plantation economy caused raw rubber to go from being one of the most expensive resources during the previous 75 years to one of the most reasonable ones. The way the world rubber economy looks at present brilliantly confirms the opinions which I expressed, without adequate success, in my publications as well as in many reports and entries to authorities and influential economic associations during a period of 30 years. Today, everyone agrees that already existing materials should be made available as far as possible before producing new resources, no matter where, that the reclaiming of rubber should also be given its place as an industrial branch in every State with a healthy economy. (On this, cf. the final sentences in my essay, “Die Regeneration des Kautschuks in technischer und wirtschaftlicher Beziehung” [Reclaiming Rubber in its technical and economic Context], published in 1920 in nos. 49/50 of the periodical “Die Chemische Industrie”.)

I thought it necessary to begin with these explanations so as to show you how significant for the general public were the tasks to which I dedicated my life’s work in occupying myself with the reclaiming of rubber. Even if I should live to see the end of the war, as a man aged 71½, I cannot count on being able to do much in order to realize the goals I set myself when I developed and requested the patents mentioned above.

I particularly regret where the more recent patent 722 226 is concerned. I believe I can rightly consider its basic idea to be a kind of crowning of my life’s work. The apparatus described there is meant to create the possibility of bringing materials from old rubber and rubber waste, of which there is too small an amount to allow it to be taken to large reclaiming firms, or which as waste is too impure, to smaller firms that are as close as possible to the place of origin, where they can be turned into very valuable reclaimed solutions, requiring expenditures that are economically bearable.

It will only be possible to utilize materials from old rubber and rubber waste once this possibility has been created. At present, a large proportion of the available waste is still destroyed without being utilized. In the description of patent 722 226, I refer to the waste in the large cities and the sweepings from the factories for finished rubber products as sources of the basic materials for the economically advantageous production of high value reclaimed solutions. This is not one of the exaggerations that frequently occur in patent descriptions, but is rather to be taken literally.

What path would need to be taken in an attempt to utilize patent 722 226? In the letters patent for patents 705 363 and 722 226, that can also be ordered from the Patent Office if not obtained from

“Methods of Reclaiming Rubber Employed during the Past 100 Years.” Proceedings of the Rubber Technology. London 1938, Paper 55, pp. 512ff.

me, it follows that for both, the so-called rotating “vacuum drying drum” is an essential, or more correctly, the most essential part of the apparatus. The first to build such an apparatus was probably the Emil Passburg Firm, Berlin. The term of validity of any patents that may have existed earlier would have ended long ago. Now it will probably be possible to find various important machine factories within the country or outside of it that already build or that can build this kind of apparatus.

I carried out the work preceding the registration of patent 705 363 while I was still the director of the RWAG [Runge-Werke Aktiengesellschaft]. Now, I still own a small part of an item consisting in several hundred kilos of reclaimed solution, which I produced in Erfurt in 1927 in the testing plant of the Franz Beyer & Co. machine factory in Erfurt, as indicated in the letter patent 705 363. This factory was a branch of the Emil Passburg Factory in Berlin, which ceased to exist in 1930, I believe. This enterprise then came to new life – I don’t know to what extent – as the Emil Passburg and Berthold Block G.m.b.H. Firm in Berlin-Charlottenburg 4.

The work methods described in patent 705 363 are the quintessence of the experiences I gathered over almost three decades in developing the enterprise as its creator and director from an experimental firm to a large enterprise. In spite of the low level of prices for raw rubber during the decade 1924-1933, I am convinced that the collapse of the RWAG could have been avoided if society’s post-war conditions had not robbed it of the economic possibilities for adapting its outdated apparatus and plants to the experiences gathered. Here, I cannot go into details as to the most decisive obstacles, which had nothing to do with the raw rubber market.

In August 1934, when I registered patent 705 363, I could still expect that I would succeed in re-establishing an enterprise like the RWAG. At the present time as well, my age would not prevent me from making attempts in this direction. But aside from the war, there are also other reasons that are an obstacle to this. These have nothing to do with me and they are not unknown to you.

To my knowledge, the RWAG has not had a successor either in Germany or in any other country – the USA is the most important country for processing rubber – in producing a reclaimed solution as a market product. At the time of writing this letter, almost eight years have gone by since the patent 705 363 was registered. If I come to the end of my life, and if with me, the experiences in my special area dissolve into nothing, efforts by others to utilize patent 705 363 will have little prospect of success.

In addition, for patent 705 363, considerable outstanding payments for the term beginning on August 14, 1934, have already expired, in total 435 RM. Because of the war conditions, these outstanding payments have been temporarily postponed. For the other annual payments, which are very graded on an increasing scale (cf. the list below), I have made use of the concession according to which the annual payments are halved for anyone who makes an irrevocable declaration to the Patent Office that anyone who has payed an appropriate fee for a licence may use the patent. Nevertheless, when the outstanding payments become due in their totality at the end of the war, I will probably hardly be able to maintain patent 705 363 for economic reasons. Therefore, it will presumably share the fate of most of the granted patents and will come to an early end because of unpaid annual fees.

The situation of patent 722 226 granted most recently is substantially different. The fact that a rarely short time of only one year passed between its registration and the granting of the patent is already a favorable element. Then, in contrast to patent 705 363, the extinction of the RWAG is a fact that, as regards patent 722 226, fosters the attempt to make the most of it. An enterprise that produces reclaimed solution on a large scale and brings it on the market, cannot to a greater or lesser degree eliminate itself by turning its customers and other small firms into competitors. But what seems most important to me is the fact that I consider my personal experience to be less important in the attempt to utilize patent 722 226 than for patent 705 363.

Rotating vacuum drying drums have been designed and mostly built in order to transform aqueous solutions and other liquids whose dry substance is very sensitive to heat into a dry substance at the lowest possible temperature in the shortest possible time. That is why the production of dry milk was and at present probably still is the main purpose for which such apparatus is used.

For my patents 705 363 and 722 226, the situation is technically different. First of all, with reclaimed solutions we have to do with liquids that boil at a much higher temperature. For producing reclaimed solutions, Xylol is the most appropriate solvent. What is more important is that the dry substance, which is totally freed of the solvent, should not only not be protected from heat, but on the contrary, should itself be heated for a short time to between 150° and 200°. These differences in working conditions require changes in the apparatus that was built to produce dry milk, but making these changes should not cause any technical difficulties.

Already in 1934, soon after registering patent 705 363, I began negotiations with the Emil Passburg and Berthold Block G.m.b.H. Firm in Berlin-Charlottenburg mentioned above. The owner, the engineer Block, was prepared to deal with the matter. But before anything could be done, the patent had to be fought through. When after 6½ years that was accomplished, the war and other developments in the situation prevented us from taking up these or any corresponding negotiations. The same is also true at present concerning patent 722 226. But for this one, its newness and the completely different purpose described above also allow a few more years of waiting. That is precisely the reason why I am writing this letter.

If someone can be found who would be prepared to follow in my footsteps, that person would first have to obtain the documents that can give him more detailed information. In this letter, I had to limit myself to what I consider to be necessary when first considering the matter. I already said that if my letters patent get lost, these can be obtained from the Patent Office. For economic reasons, I was also not able to do anything about the patents in other countries during the period preceding this war. When I registered patent 722 226 at the Patent Office, I declared at the same time that, according to article 4 of the revised Paris Accord of June 2, 1911, I claim priority. I myself am not sufficiently informed as regards the legal consequences of this declaration.

Further sources for the person seeking information would be my own publications, which make up the by far largest part of the existing literature on reclaiming rubber. The special prints which I still have today constitute quite a large package. But it is probable, almost certain, that these prints along with our library, which includes several thousand volumes, will be scattered to the winds, maybe even before I come to the end of my life, and that you will never get them. I am enclosing a list in this letter so that you will at least know where my writings were published. Since another reason

besides the present one might develop for informing you of my activities as regards specialist literature, I have included in the list all the technical, economic and scientific chemical papers and essays that I remember – but there are more.

As long as it is possible for me to do so, I will take care of the maintenance of patent 722 226 by paying the annual fees that are due, all the more so as these remain low during the first years of the term, as the following setup shows; at the same time, it also gives information on the dates when payments are due.

Year	Date due	Amount in RM	Year	Date due	Amount in RM
3	April 15, 1943	30	11	April 15, 1951	325
4	April 15, 1944	30	12	April 15, 1952	400
5	April 15, 1945	50	13	April 15, 1953	500
6	April 15, 1946	75	14	April 15, 1954	600
7	April 15, 1947	100	15	April 15, 1955	700
8	April 15, 1948	150	16	April 15, 1956	800
9	April 15, 1949	200	17	April 15, 1957	900
10	April 15, 1950	250	18	April 15, 1958	1000

The fees are to be paid at the cash desk of the Reich Patent Office within two months after they are due, indicating the patent number and what they are for (annual fee); no extra fee is to be paid. If the fees are not paid within those two months, the Patent Office informs the patent owner that the patent will expire if the fees are not paid within three months after receiving this information. It is to be recommended that the patent owner sees to it that such information can reach him.

If the person seeking information has become sufficiently knowledgeable about the matter, so that he believes he can attempt to utilize patent 722 226, he must – as I would also have to - first of all take up contact with an appropriate machine factory that would take on the task of building the apparatus. It goes without saying that, even though the apparatus does not yet exist, all the details of its construction must be laid down before it can be offered to producers of reclaimed rubber and before licences can be granted.

For the present owner, the simplest would be if a machine factory could be found that would buy the patent and with it all further concerns for its utilization. I do not think this would be impossible, but in this case as well, I would consider it to be of decisive importance to continue to have at least a modest share in the customers' payments for the licence.

As can be seen from this letter, I remain as convinced as ever that very profitable results could be obtained both for an entrepreneur and for the general public if someone succeeded in implementing my suggestions resulting from decades of experience, as they are expressed in patent 722 226. The first condition for this – both in the real sense and in the figurative one – would be to get “to the right smithy”.

With this “posthumous” commission, I am of course thinking first of all of you, dear Ludwig, as the person to implement what has been said. But you others are also not to be excluded if Ludwig cannot or does not want to do this. If our cherished expectations for you are fulfilled, you, dear sons-in-law Alfred and Paul will surely be very much in demand in your professional work in the future as well, so that it will not be possible for you to have such a secondary occupation. On the other hand, I am assuming that such a task having to do with economy could interest you, dear Hans, as it did when you were younger. Perhaps a future son-in-law, whom we don’t know yet but whom our youngest will hopefully be able to introduce to us sometime, will also be “the right man” for this matter. Nor do I consider it impossible that you daughters could yourselves have the calling and attraction, as well as the necessary expertise to take on this task and to bring it to a good conclusion.

Whoever might dedicate himself to this matter must be free in his actions for however long he does it. But if he loses his confidence in his ability to succeed in his efforts, he should not drag out the matter and should inform his siblings of this on time, so that they can decide whether they agree with him or not.

If the efforts are successful – your old father is still an optimist – then the one who does the work should also have a right to the lion’s share of the resulting income. I consider that lion’s share to be half of the sum that remains of the income after subtracting the costs. The other half should go to the siblings in equal parts. I expect all of my children to come to an agreement lovingly, peacefully and with understanding, in this matter as well as in any other issues that arise.

This letter has turned into a lengthy retrospective and thus, for me, in a way into a rendering of account of the work I did over four decades. This was not what I originally intended, but now it seems to me that it would also be appropriate to tell you part of the thinking that motivated me in this.

Setting up the list of my publications that fill some thousand printed pages was what first reminded me that the extent of the papers I wrote for the “Chemische Zentralblatt” in the course of 25 years by far exceeds that number of pages. That was an occupation that I would like to call “mental wood chopping”. I am a clumsy thinker and I work slowly. Thus, the writing and even more the polishing of what I said in those thousands of pages cost me many more hours of work.

Those hours of work were free “hours of leisure” in relation to my real professional work. Where my own publications are concerned, only the experiments themselves were done in the laboratory and the firm; all the written work was done at home at my desk late in the evening and partly early in the morning, as was also the case, of course, with the papers for the “Zentralblatt”.

Was it right to take away from my wife these many leisure hours during my best years as a man, to take them away from being occupied with my growing children, from the satisfaction of mental-esthetic attractions, which I also do not lack? Without doubt, it would have been more pleasant for me not to do so. But I think I can take responsibility before myself and before you, dear children, for these sacrifices.

accord with the legal situation, bankruptcy was declared as regards the society's assets. As was to be expected, through the bankruptcy proceedings the RWAG plant was totally destroyed in the course of a few months and the large and valuable ground was so shamelessly sold off that nothing was left for the creditors, not to mention for the former owners.

Even during the years in which my income would have made something else possible, our life style never went beyond a modest framework. Today, you children can thank us for having brought you up in such a way. Even if the existing conditions didn't prevent it in any case, we would not be able to leave you money or property. You will find your way through life this way too, and I hope you will not have too bad a memory of me.

The fact that the danger is now tangibly close that your mother, who will hopefully survive me by many years, might have to depend on outside help just to survive, is a greater worry for me than my own last years of life. So from a personal point of view, that is the economic end result of my life's work!

But – “The common good goes before personal good.” Before the shouting in the alleyways began, I proved through my deeds that this principle was the guideline for my action. So I may point out that the economic end result of my life's work looks entirely different when seen from the point of view of the general public.

Nor do I lack numbers when coming to such a final result. During the 30 years of its existence, the enterprise brought State and city authorities at least 20 million gold marks through taxes and various kinds of charges. And the indirect advantage to the general public that resulted from my life's work was considerably greater than this direct enrichment.

In my publications, I often spoke forcefully of the economic significance of reclaiming rubber, most forcefully probably in the final sentences of the essay “Die Regeneration des Kautschuks in technischer und wirtschaftlicher Beziehung” [Reclaiming Rubber in its technical and economic Context], printed in 1920 in the periodical “Die Chemische Industrie” (nos. 49 and 50). The RWAG would not have collapsed if my words had been better received in the decisive places.

Nevertheless, the German economy has made a considerable real profit in millions of gold through my life's work. In 1934, in the essay “Die wirtschaftliche Bedeutung der Kautschukregeneration” [The Economic Significance of Reclaiming Rubber], published “post festum” in the *Gummizeitung* (48, nos. 25 and 26) for the RWAG, I showed by means of calculations that during the decade 1924-1933 alone, 42.5 million gold marks had been saved on the importation of raw rubber by means of the reclaiming process, but that it could have been 240 millions in gold if the reclaimed rubber had been sufficiently utilized. Although that decade was the one in which the RWAG rapidly fell and then became extinct, its product still contributed to a quarter of the actual monetary savings obtained.

The obstacles with which my endeavors met inside the country, brought about that, of the enterprise's total earnings to the sum of 60-70 million gold marks in the course of 30 years, more than half came from products that were exported. This meant that my life's work became a source of

foreign currency within the country. The enterprise's demands for foreign payments during the course of 30 years correspond to about 40 million gold marks in foreign currency.

The expressions "saving foreign currency" and "bringing in foreign currency" only became generally understood expressions after the collapse of the RWAG. I don't think they occur in any of my publications on economic matters. Today, the importance of the foreign currency economy for every State is referred to every day, even every hour. Thus, I may be permitted to remind people that I acted in this sense through word and even more through deed for a whole lifetime. And the correctness of the position which I held for 30 years with little success, that every State with a healthy economy must give a place to the reclaiming of rubber, is now no longer denied by anyone.

What can be seen when looking at the end result of my life's work, if seen from the point of view of what was advantageous to the general public, can fill me with satisfaction. I can say with my head proudly raised that no person thinking cheaply, no person judging justly can claim that I was a "parasite" to the German people's community.

It was May 23 when I wrote down the above words in the draft of my letter and when I began to write the final copy. You know what this date means to me. May it also be a good portent for you!

It is 46 years since, on May 23, 1896, I found the companion who has given my life direction and content. I owe it to her alone that I can look back with satisfaction not only to the happily lived decades at her side, but even to what, seen superficially, would seem to be a failed end of my life. And if so far we have been able to bear the heavy bitterness of the present in tranquil equanimity, and hopefully will be able to continue bearing it, then it is also her ever young and cheerfully happy disposition that make this possible for me as for herself.

You yourselves, dear children, are now in the middle of your life and have become acquainted with many people outside of your parental home. You appreciate the fact that the companion whom I was given on May 23, 1896, became your mother.

I shall close with the wish that this letter will reach you in the not too distant future.

With heartfelt affection, your

Father

Dr. Paul Alexander (chemist and pharmacist).

Born on December 9, 1870 in Tirschtigl (Province of Posen).

Died 1943 in Theresienstadt of camp disease.

School and university education in Leipzig.

Marriage 1901 to Elfride Pinner (who lost her life in Auschwitz).

Six children (one daughter lost her life through National Socialism).

In 1914, he was claimed as the director of an enterprise that was important for the war – the second largest rubber reclaiming factory in Germany.

Known as the author of contributions on chemical matters in European specialist periodicals.

Was granted a number of patents for things he had produced. The last was in 1942.