



NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
 MANNED SPACECRAFT CENTER
 HOUSTON, TEXAS 77058

*Ball point pen history
 encl*

October 25, 1967

IN REPLY REFER TO: AP3

Mr. Paul C. Fisher
 Fisher Pen Company
 5900 North Burnet Avenue
 Van Nuys, California 91401

Dear Mr. Fisher:

Our apologies for the delay in responding to your letter of August 23, in which you enclosed copies of proposed sales literature for your new ball point pen.

We are concerned that portions of your advertising copy are quite misleading. We must disapprove both advertisements, SPACE PEN BY FISHER and IT WRITES IN SPACE.

Our procurement action with the Fisher Pen Company contains a unit cost of \$4 per pen and not \$1.98 as cited in your sales literature. The \$1.98 version, Space Pen, is not the version being considered for possible use in Apollo space missions, rather it is your AG-7 pen with slight modifications.

Sincerely,

ORIGINAL SIGNED BY HOWARD GIBBONS

Howard Gibbons
 Chief, Public Information Branch
 Public Affairs Office

Enclosure

cc:
 CF32/Kuehnel
 ✓AP

INDEXING DATA					SIGNATOR	LOC
DATE	OPR	#	T	PGM		
10-25-67	MSC		L	AP0	+ DISAPPROVED GIBBONS	068-64

Fisher

PEN COMPANY OF CALIFORNIA

5900 North Burnet Avenue • Van Nuys, California 91401 • (213) 781-1260 • (213) 873-5252

August 23, 1967

ACTION AP3
Lt. encl. AP
INFO AP

N:A.S.A. Manned Space Craft Center
Public Affairs Office
Houston, Texas

Gentlemen:

Enclosed are copies of sales literature which we plan to use on our new ball pen, which is designed for use in outer space. The specific statements involved are partially based on the enclosed copy of the Congressional Record.

If you have any objections to any of the statements which are contained in our sales literature, we would appreciate hearing from you at your earliest convenience.

Sincerely yours,

FISHER PEN COMPANY

Paul C. Fisher

Paul Fisher

PCF:bk
Enclosures

RECEIVED
AUG 24 3 31 PM '67

From:

2-Way Memo

Subject: Space Pen, Fisher Pen Company

To: AP3/Robert V. Gordon

DATE OF MESSAGE	September 13, 1967
DATE OF REPLY	
INSTRUCTIONS	
Use routing symbols whenever possible.	
SENDER:	
Forward original and one copy.	
Conserve space.	
RECEIVER:	
Reply below the message, keep one copy, return one copy.	

FOLD USE BRIEF, INFORMAL LANGUAGE FOLD

The following comments are related to the advertisement entitled SPACE PEN by Fisher:

The first paragraph is not entirely true. The Space Pen was not necessarily developed by Mr. Fisher for the American space program. This may have been an idea in the back of his head, which we have no way of knowing. Mr. Fisher is not now and has never been under contract to NASA - MSC for the supply of any writing instrument to be used in a manned spacecraft. This pen was never considered for use in the Gemini program, although a different version is currently being considered by this Division for use in the Apollo program. This statement might be changed to read "Developed by Paul Fisher for possible use in the American space program".

Secondly, the Space Pen is not the only pen that can write in the air-less, gravity-less conditions of outer space. During the Gemini program, this Division supplied a fiber-tipped pen which was successfully used in air-less and gravity-less conditions. Since these pens functioned normally under these conditions, Mr. Fisher's statements are not entirely true. This statement might be changed to read "The only ballpoint pen that can write in the air-less, gravity-less conditions of outer space". To the best of our knowledge, the Fisher Pen Company makes the only pressurized ink cartridge which is a requirement for a ballpoint pen to operate in a weightless condition.

The following comments are related to the advertisement entitled IT WRITES IN SPACE!:

In the seventh paragraph, Mr. Fisher states that the Fisher Space Pen is the pen of the astronauts. It is believed that the meaning implied here

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Page 2

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FOLD

is NASA astronauts. The Space Pen is not being considered for manned space flight by this office. This office is considering the use of another Fisher product, the AG-7 pen with slight modification, for manned space flight. It is, therefore, recommended that this statement be deleted or changed to imply that it could be used by the astronauts.

Paragraph eight should also be changed so that it does not imply that the Space Pen is used by NASA astronauts.

From:

HA Kuehnel
CF32/Helmut A. Kuehnel

Handwritten:
Copy by
Mrs Fisher
5/23/67

SPACE PEN

by Fisher

- Writes in Outer Space
- Defies gravity...writes at any angle including upside down
- 100 year shelf life
- Writes darker and 3 times longer than most other ball pens
- Skips less over grease and fingerprints
- Writes under water

(Possible use in)

Developed by Paul Fisher for American's Space Program. (The only pen that can write in the air-less, gravity-less conditions of Outer Space.) Tested and approved in NASA Laboratories.

Also writes better on earth because of its sealed, pressurized ink cartridge.

Space Pen \$1.98 Pressurized Refill 98¢

Fisher Pen Company

Forest Park, Illinois 60130

*This coat
of Liberty Tree -
U.S. Postmark
used a fiber-typ
pen during man's
Bemini mission.*

*Suggest add
"Ballpoint
pen that can
write in air-less
etc..."*

IT WRITES IN SPACE!

Imagine a ball point pen that defies gravity, writes at any angle... even upside down. The Fisher Space Pen with its pressurized ink feed is designed to write against gravity without danger of skipping or back-leaking.

Just test your ordinary ball point pen and you'll see how quickly it stops writing if its point is pointed in an upward direction. Note: When it stops writing be sure to point it down and get it writing again otherwise it may back-leak and ruin your clothing. All ordinary ball pens have a hole in the top of the cartridge through which the ink slowly evaporates and sometimes leaks out. Gravity and surface tension feeds the ink to the point as you write. Therefore, when you try to write on the wall with the point above the ink tube, there is only surface tension to pull the ink up to the point and the surface tension is usually only enough to make it write for a few inches.

With your Fisher Space Pen, you can write continuously at any angle. Many people find that being able to write with the point above the pen is an important convenience...doctors, nurses, cab drivers, field engineers, stock room clerks, people in bed and the housewife who writes against the wall on her kitchen shopping list.

The real secret of the Fisher Space Pen is its sealed refill which is pressurized with nitrogen gas. This seals air out preventing the evaporation

oxidation of the ink. The pressurized ink feed is more dependable than gravity so that this pen writes more dependably, more smoothly, more evenly and with less skipping over grease, fingerprints and water.

A special ink had to be developed for this pressurized refill...since ordinary ball pen inks will ooze out of the point if pressure is applied to the ink column. The ink in your Fisher Space Pen is a high viscosity, thixotropic ink...especially developed by Paul Fisher; President of the Fisher Pen Company. It is normally almost solid while at rest, but when you write, the ball revolves, stirs the ink and liquifies it so that it writes freely and easily. The ball point acts as a ball seal valve which with the heavy, viscoelastics, gel type ink, retards oozing.

Your new Fisher Space Pen will give you many extra feet of consistently fine writing. It writes three times as long as ordinary ball pens. Should you put your Fisher Space Pen away somewhere and not use it for 10 years, it will write again the moment you use it; because the sealed ink cartridge has an estimated shelf life of over 100 years. No matter how you use your Fisher Space Pen...under the most rigorous writing conditions, you will have little or no ink buildup or accumulation of excess ink on your hands or clothing.

being considered for
Last but not least, the Fisher Space Pen is the pen of the astronauts.

Because it is the only ball point pen that can write in the air-less, gravity-less conditions of outer space...tested and approved in NASA laboratories to meet standards of performance beyond anything which you will ever encounter on earth.

11/50 is considering the Fisher AG-7 pen with slight modifications for manned space flight.

To have the pen of the astronauts...for yourself, for gifts, or as an historical souvenir, you may order the Space Pen at special 1967 Inventor's Exhibit prices:

HANDY ORDER BLANK

To: Paul C. Fisher
Fisher Pen Company
7333 W. Harrison Street
Forest Park, Illinois 60130

Fisher Space Pens...6 for \$10.00 (regularly \$1.98 each)

Fisher Pressurized Refills...6 for \$5.00 (regularly 98¢ each)

Enclosed is \$ _____ for _____ Pens: _____ Refills

Name _____

Address _____

City _____ State _____ Zip _____



United States
of America

Congressional Record

PROCEEDINGS AND DEBATES OF THE 89th CONGRESS, SECOND SESSION

Vol. 112

WASHINGTON, WEDNESDAY, MARCH 16, 1966

No. 46

House of Representatives

Follow the Bouncing Ball

EXTENSION OF REMARKS
OF

HON. JOSEPH E. KARTH

OF MINNESOTA

IN THE HOUSE OF REPRESENTATIVES

Wednesday, March 16, 1966

Mr. KARTH. Mr. Speaker, the ball-point pen is now some 20 years old. Since the time of its invention few other than perfecting changes of minor character have taken place. Recently, however, a giant step forward was made by the Fisher Pen Co. by pressurizing the feed supply. Its usefulness as a space pen becomes apparent because of weightless conditions experienced by all orbiting astronauts. Perhaps more importantly, though, is the reliability increase for everyday use by millions of actual and potential users.

Following are the pens' test results and a history going back 20 years—all advanced by the space age:

NATIONAL AERONAUTICS AND
SPACE ADMINISTRATION,

Washington, D.C., November 17, 1965.

Mr. PAUL C. FISHER,
President, Fisher Pen Co.,
Forest Park, Ill.

DEAR MR. FISHER: As you are aware, our Manned Spacecraft Center in Houston, Tex., has been testing your new model AG-7 pens which have aluminum pistons separating the gas from the ink reservoir. The results of these tests as reported to this office on September 22, 1965, were quite favorable, and I quote from the report the following statements:

"The modified pens were received, checked for oxygen compatibility, and subsequently used in a simulated spacecraft cabin environment.

"The oxygen compatibility was confirmed by rupturing the ink cartridge and placing the ink in a watch glass and exposing it to 100 percent oxygen. The oxygen soak was at various pressures from 3 to 15 pounds per square inch absolute for a period of 1 hour. At the end of the 1 hour soak, no noticeable oxidation has occurred. The ink, still in the oxygen, was placed in the presence of an open flame, and it was determined that it would not support combustion. The AG-7 pens were found to be oxygen compatible and submitted as a test article for the next manned test at reduced pressures.

"The test in which the performance of the AG-7 pens were used was a 48-hour test in 'Geminl ECS Boilerplate No. II' where the following conditions existed:

"(a) Cabin pressure controlled at 5.5 pounds per square inch absolute.

"(b) Cabin interwall temperature followed a launch profile of 100° to -40° F.

"(c) Cabin gas was 100 percent oxygen with 50 to 80 percent relative humidity.

"(d) The test subjects were in both launch and flight position during the test.

"(e) The AG-7 pens were used to fill out a workbook that was provided to keep the subject occupied during the test.

"The AG-7 pens performed excellently in all positions. The pens were examined after the test and no excessive oozing was apparent. The mechanics of the pen also performed very well. Both test subjects stated that the pens performed satisfactorily.

"The pens will be used in future tests and should any problems be noted, you will be advised.

"Sincerely yours,

"JAMES A. HOOTMAN,

"Executive Secretary,

Inventions and Contributions Board."

[From Office Appliances]

FOLLOW THE BOUNCING BALL

(By Paul C. Fisher, president, Fisher Pen Co.)

I didn't believe it then, and I can hardly believe it now.

What I'm talking about is the ball pen. It was introduced just 20 years ago, October 29, as the newest development of the oldest writing instrument, and changed the writing habits of a billion people.

I didn't think much of the pen at the time, but I have changed my mind considerably. And how I have changed by mind.

I've been in the ball pen business almost since its inception and I've made my share of mistakes, but also some important contributions—like the universal refill cartridge and now, on the 20th anniversary of the ball pen—a sealed pressurized cartridge making it possible to write in any position, even upside down.

On that October day, 20 years ago, Milton Reynolds put on sale through Gimbels in New York his miraculous new pen at \$12.50 each, a fantastic price, but no more fantastic than the claims made for it. "It could write underwater. It would revolutionize writing. It would practically last forever."

Gimbels, with the help of extravagant advertising on that day, had some 5,000 weary consumers aching for new merchandise—waiting to buy pens, at \$12.50 each.

By day's end, Gimbels had sold 10,000 pens, worth about \$125,000 at retail. And if you

think that's a paltry figure, considering the size and importance of the store, consider that this amount was about a third of the store's average daily volume at that time.

That was the start of the ball pen, and I did not share the general enthusiasm. In fact, just a few days before that wild selling event at Gimbels I had remarked to Julian Levl, son-in-law of Milton Reynolds and then general manager of the Reynolds Pen Co., that the ball pen was no good and never would be because the basic principle was unsound.

I was right—but only at the time. It was all too true that the early ball pens did not work. There were defects and there were failures and there was widespread dissatisfaction. While Gimbels was still selling all the pens it could get, long lines were forming in the back of the store to return pens that came nowhere near fulfilling the fantastic claims of the ballyhoo that preceded their introduction.

EARLY MODELS HAD PLENTY OF PROBLEMS

All their faults were showing—the oil base inks dried so slowly that writing would smear and signatures could be readily transferred even after weeks of aging; the ink cartridge leaked, sometimes from both ends, and few things are messier than ball pen inks. The cartridges stopped writing because of air bubbles or foreign particles in the ink, the ink dried or oxidized since the upper end of the ink column was always exposed to the atmosphere; the points wrote unevenly, left large globs of excess ink, wrote too lightly or the ball would freeze in its socket and stop writing completely.

The Reynolds innovation, despite the exaggerated price, the wildly imaginative promotion and the defects inherent in the product, did achieve a major objective, even though the pen itself was a monumental writing failure.

It called attention to the fact that there was indeed such a product. The net effect—with the pen itself going back to everybody's laboratories for essential improvements and refinements, and perhaps perfection—was to start an industry.

Now the ball pen is a staple item everywhere throughout the world, and it is widely used in the office, school, home, as a premium, as an advertising specialty and, in more elaborate gold or silver case and accompanied by a mechanical pencil, an executive gift. Sales are running close to \$500 million in annual volume, on a worldwide basis.

Developments and improvements in the ball pen by leading manufacturers in the field, and—some of them my own doing, I am proud to say—have forced me to change my mind about the ball pen.

Major break was achieved in 1947 when the capillary cartridge, a straight tube with a 1/10 inch inside diameter, it was a tremendous improvement over the much more complicated original ink cartridges. One end is closed by the point and the other end is open to the air. This type of ink cartridge is still used in 90 percent of all ball pens.

The original smooth steel ball that rolled over the paper, leaving a trail of the same ink that stained pockets, handkerchiefs and hands, was replaced by tungsten carbide, one of the hardest alloys known. It is not used much to write under water, but it now even writes on some greasy, glossy, and glazed surfaces.

However, the big breakthrough in ball pen technology came in 1949 with Paper Mate's introduction of the first quick drying glycol-based ink. By this time the ball pen had such a bad reputation for performance that it had become a dying product. Paper Mate's quick drying ink first developed by Fran Seech brought new life to the ball pen and started it on its way to wide acceptance. When I first tested the Paper Mate pen, I was so impressed that I discontinued all sales effort on our pens to develop an ink of comparable quality. Other pen companies also intensified their ink research, while Seech successfully kept his secret for nearly 4 years by mixing ink in the basement bathtub of his Los Angeles home and not revealing his formulas to anyone. Paper Mate as a result earned a commanding lead over its competitors.

ORIGINAL PATENT ISSUED IN 1888

This marked the rebirth of the ball pen industry. Confidence in the product was restored. Major competitors intensified their research and development efforts that have resulted in the ball pen's present position of the world's most widely used writing instrument.

While the merchandising genius of Milton Reynolds is responsible for starting the industry, the actual credit goes to Laszlo Jozsef Biro, a Hungarian refugee living in Argentina, for kindling the commercial birth of the ball pen. There had been patents as far back as 1888 on the concept of a freely-revolving ball, set in a socket, that wiped a gelatinous ink onto a writing surface.

The Biro pen had three important advances—if the word is the correct one, con-

sidering the defects—over the conventional fountain pen. Instead of a nib there was a socket that held a ball bearing. Instead of ink it used a gelatinous dye with an oil base that was rolled onto the writing surface by the ball bearing. Third, it held enough of this unusual "ink" to keep writing for several months at a time.

There was another advantage. Ordinary pens leaked at high altitudes because changes in atmospheric pressures affect liquids. The ball pen was not subject to this annoying problem, and the immediate result was that the British rights were sold to a British aircraft company.

The U.S. Air Force—through fliers visiting Argentina—became interested, too, toward the end of World War II. It brought some and sent them to pen makers, suggesting they might buy a large quantity. Here was a product to be made, and a consumer waiting to buy it. It was no wonder that Parker, Sheaffer and Eversharp got into the act, only to find that Eberhard Faber, well-known pencil manufacturer, controlled the U.S. rights but had run into manufacturing difficulties.

Some extremely complicated agreements were worked out between Faber and Eversharp and production runs began, backed by "miracle-pen" advertising.

The advertising, as it turned out, was a boon to Gimbels which was just about to bring out the Reynolds pen. Reynolds had investigated the patent situation and had decided to go ahead, taking his chances on legality. Straus warned of a patent-infringement suit, but Reynolds was a step ahead. His pen had a gravity feed, something that represented an improvement.

There are now perhaps 200 ball pen manufacturers in the country, with quality and performance ranging from very good to very bad.

MANY IMPROVEMENTS ALONG THE WAY

Many of them get credit for various innovations and improvements. Among the major developments to cause significant changes in manufacturing methods and greater value to the consumer was the jumbo cartridge using a grease follower developed by Ernest Hendrickson. Sheaffer Pen Co. adopted it in 1952 after their unsuccessful efforts at marketing a jumbo cartridge with a sealed ink supply. Parker, Scripto, Venus and Wearover soon followed. This develop-

ment allowed the use of a larger diameter tube, thereby greatly increasing the ink supply. However, the brass or bronze ball sockets then used wore out so quickly that the extra ink supply actually meant very little, until the successful development of the stainless steel socket using a tungsten carbide ball, in 1963.

The successful modern stainless steel point is the development of Sauro Albertini and Guido Bertoglio of Albe, S.A. of Lugano, Switzerland. This remarkable company developed a line of superb ball point manufacturing machines which are now being used all over the world. A few pen companies, including the Fisher Pen Co., developed their own excellent point manufacturing machines and with them a competitive advantage. Then the Albe Co. developed their superior machines and revolutionized the point quality of ball pens throughout the world by making their machines and their superior technology available to the entire industry.

Fisher's two basic contributions now widely accepted are the universal cartridge "one-for-all" refill, which fits most pens and thus reduces retail inventories, and now the first successful sealed pressurized ball pen cartridge. At the Fisher organization, with its plants and laboratories in Chicago, California and New York, we have solved the problem of ink flow. The new cartridge invented by me and two long-time associates, Herman Schub and Roger Kennedy using a thixotropic ink, will write under conditions impossible for ordinary pens.

Pressurized ball pen ink cartridges could not be made in the past because all previous ball pen inks would ooze out around the ball whenever pressure was applied to the ink. Our new thixotropic ink will not ooze even if pressure in excess of 100 pounds per square inch is applied because it is heavy and solid until it is stirred. The revolving ball liquifies the ink so that it flows freely to the paper.

The future indicates even greater growth, providing we are alert to scientific advances and are willing to share our knowledge. The first 20 years were the hardest, but as pioneers we should be proud that, out of the ashes of near-disaster, we gave to the Nation and to the world the ball point pen—the modern tool of education, business and communications—and are striving to make it better.