

# The Magical Musical Machine

## TEACHER RESOURCE

**BANK OF AMERICA ARTS SHOWCASE  
PROVIDENCE PERFORMING ARTS CENTER  
~ PETER KRASINSKI and the PPAC WurliTzer ~**

**2021 VIRTUAL SEASON  
Grade K-5**



Utilizing one of New England's rediscovered musical treasures, International Sonic Artist, Peter Krasinski shares with young audiences reveals the way the King of Instruments works, takes a musical trip in time, shows how music supports the story in film and presents a comic masterpiece and while improvising and playing from a diverse musical tapestry.

### **PROGRAM DESCRIPTION**

This 50-minute production, designed to engage an elementary school audience is presentation in four informative, educational and entertaining sections:

~Overview~

**I. THE MAGICAL MUSICAL MACHINE ~**

The **Brains of the Machine!** What do all those keyboards and buttons do?

The **Pipes that Sing!** What does an organ pipe look like and why?

The **Chambers!** What powers a pipe organ, how does it work, and where does the sound come from?

**II. A JOURNEY THROUGH TIME AND PLACE**

The WurliTzer brings us on a **musical trip** across time and around the world on six continents! Audience members get a close up view on the screen as Krasinski plays music from various time periods, with pictures of the musical creators and organs around the world.

**III. HOW MUSIC TELLS A STORY ~ AND MORE**

**Film, sound effects, percussion and Musical Emotion**

Krasinski, at the mighty Wurlitzer will introduce dramatic film excerpts from the “Silent Film Era” and will accompany them with an improvised live soundtrack.

**IV. PUTTING IT ALL TOGETHER ~ A SHORT COMEDY**

The previously presented sections come together in the presentation of an improvised accompaniment of a short comic film, THE BOAT, starring Buster Keaton.



“THE MEDIATOR BETWEEN HEAD AND HANDS MUST BE THE HEART”



Inside the chambers

### **An Exclusive Production**

Mr. Krasinski, performing from the eye catching 1927 console the WurliTzer Pipe Organ at the Providence Performing Arts Center, will present this program. Designed with **Elementary School** audience members in mind, the engaging visuals on screen will switch between the performer's hands, feet and wide angle view of the console, as well as the film excerpts and live views inside the organ chambers.

### **Artistic Intent, Relevance and Benefit for the Artist and Beyond.**

This performance will expose students to a collection of art forms including Film, Music, the way both work together, Inventiveness, Improvisation and the Visual Arts. The improvised film clips and composed music are chosen to develop empathy with the characters on the screen, the message in the music, the past glories of the performance tradition, other artists, and each other.

This production will also serve to engage middle school students with a memorable experience that they and their teachers will be able to connect with their curriculum across various disciplines including History, (the films) Math, (the physics of sound) Music, (the pieces played and the improvisations presented) Diversity, (these films cover a large swath of humanity and cultures- how do they do this successfully/ where do they fall short?) Humanities, (the human relationships as present in the films) Visual Art and Mechanical Engineering, (the PPAC WurliTzer as a piece of art in wood, metal, leather, electricity, and wind). It will accomplish this through this study guides, as well as the performance itself, while intentionally engaging a large number of neurological constructs being developed by this age group.

Finally, this performance is designed to develop a friendly understanding about the world of film, improvisation, artistic play and, especially, the pipe organ. I hope to invite the audience to experience the pipe organ in a positive light: to recognize it as a significant musical instrument, and that the PPAC WurliTzer, specifically, is a living and breathing masterwork of art worthy of support and a full restoration.

Without demonstrating the relevance of any artwork that art dies: be it a visual or aural one, a building, an instrument or, even a way of living. I revel in what the pipe organ, it's history, it's music, its composers and performers represent: not just with those that already love it, but also with the general public. The pipe organ's voice, one that is real and not imitation, one that requires skill and heart to master, is finding a resurgence in our culture, and is again becoming recognized as relevant, capable of expressing human emotion as well as the unknown.





### PREPARING YOUR STUDENTS FOR THE PERFORMANCE

The four segments will be presented in a structured, entertaining and youth focused way. **Section III and IV** are performance centered so the materials below relate to sections **I and II only**.

Multiple art forms, which can relate to multiple curriculum areas are at hand when exploring the combination of a pipe organ and silent film accompaniment. They include the art of cinema, diverse cultures presented in music, image & story, improvisation, artistic play, and scientific imagination. This is possible through film clips, musical performance of existing and improvisational material, straightforward student engagement, and discovery of the mechanical workings of a truly remarkable instrument.



Cecil B. DeMille and crew directing BEN HUR  
on location in Italy.

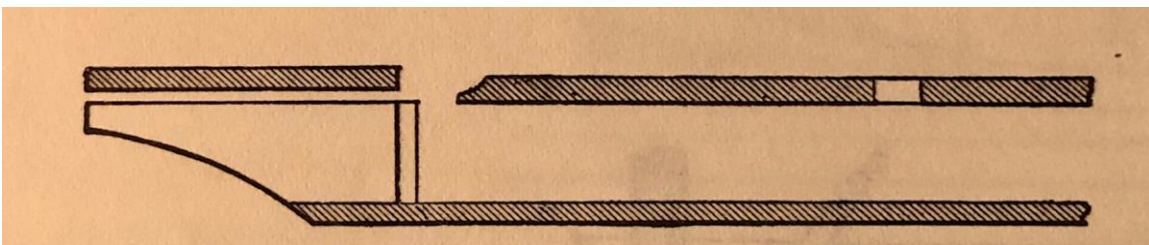
## I. THE MAGICAL MUSICAL MACHINE ~

The following images might serve your students well as preparation before the performance. They show photos from the of the actual organ they will hear as well as additional material. You may share them with your students or presented them on line for discussion.

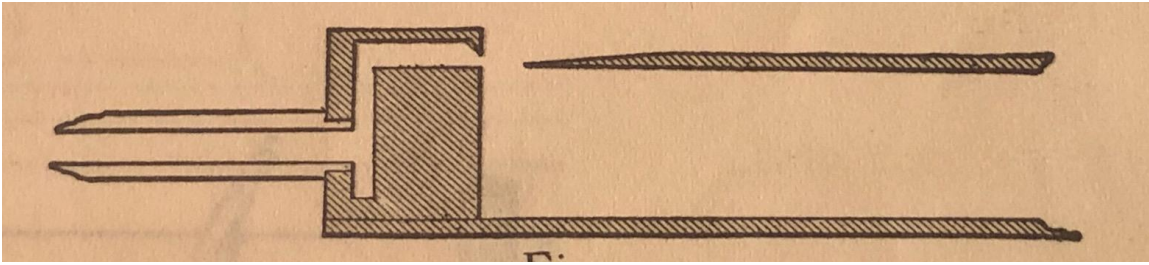
**The Wind and Pipes ~ A progression of winding systems to make music.**



A image of a flute “held sideways” copied from an ancient hieroglyph. Would this type of flute work well without a human to provide the air? Why or why not?



Here is a cross section view of a flute like a penny whistle, also called a “Beak Flute”. You blow into this directly instead of across the hole for the wind. Why is it called a “Beak Flute”?

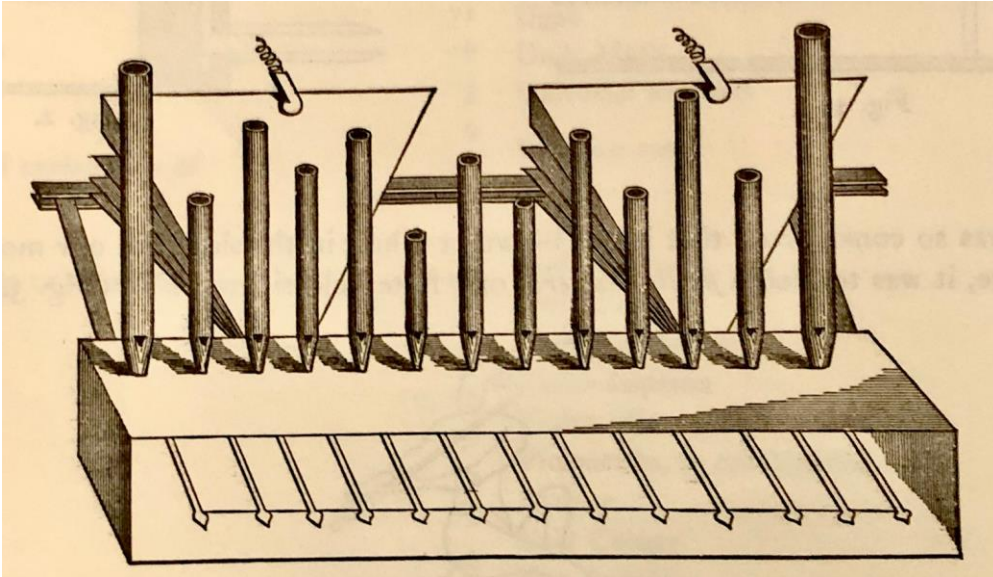


Here is a cross section view of an organ pipe. What about this looks like the Beak Flute? Where do you think the wind goes in?



Eventually someone thought of playing two flutes at once. This is from an Egyptian Monument. When Might this have been carved, do you think?



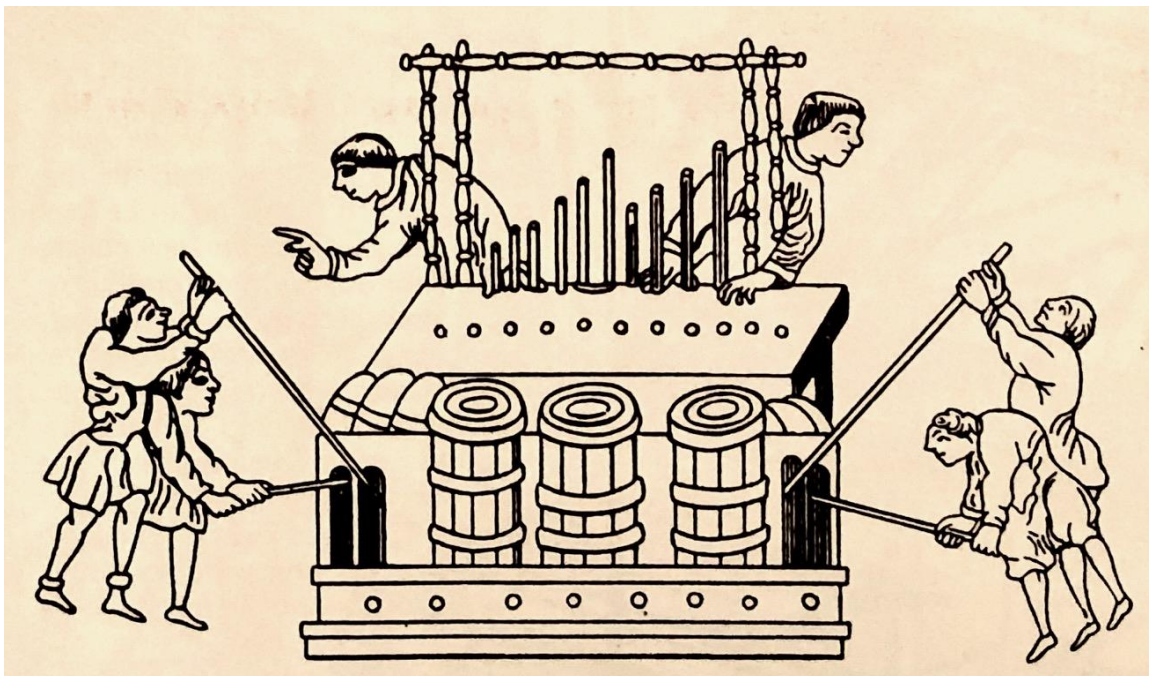


Later someone thought, “How can I play a bunch of flutes all by myself?” AND not run out of breath? Look at those things behind the pipes- Bellows! They now provide the air. One would simply pull a slat of wood to let the air into a pipe. (This image is from a book called “Musurgia” by Kircher. What might you find out about that book on line? Can you find out when it was written?)

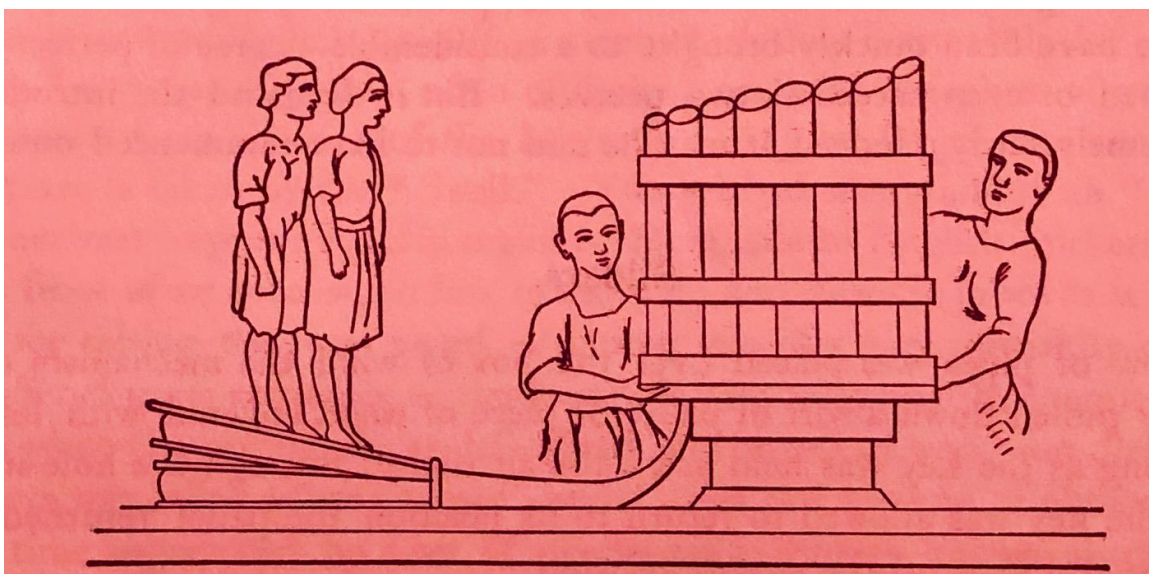
And guess what!? Someone in China had already put pipes together with reeds making the sound instead of just wind. The development of the ancient Sheng can be traced back to more than 3,000 years ago. In 1978, the earliest known form of Sheng, the *Pao Sheng* was excavated in a royal tomb that is believed to be at least 2,400 years old. This is what that instrument looks like.







Organs became larger and larger. This image is from the Saxon Psalter. Gosh: is that another old dusty book? Well, sort of, but you can date that on line too!



This is a drawing of a much older image in a book about how to play the organ in printed in 1909. It shows that people figured out how to just use their weight to supply wind to the pipes. It from something very old and well-travelled....

Amazingly, although damaged by time, we can still see the original place where this image came from: The Obelisk of Theodosius!

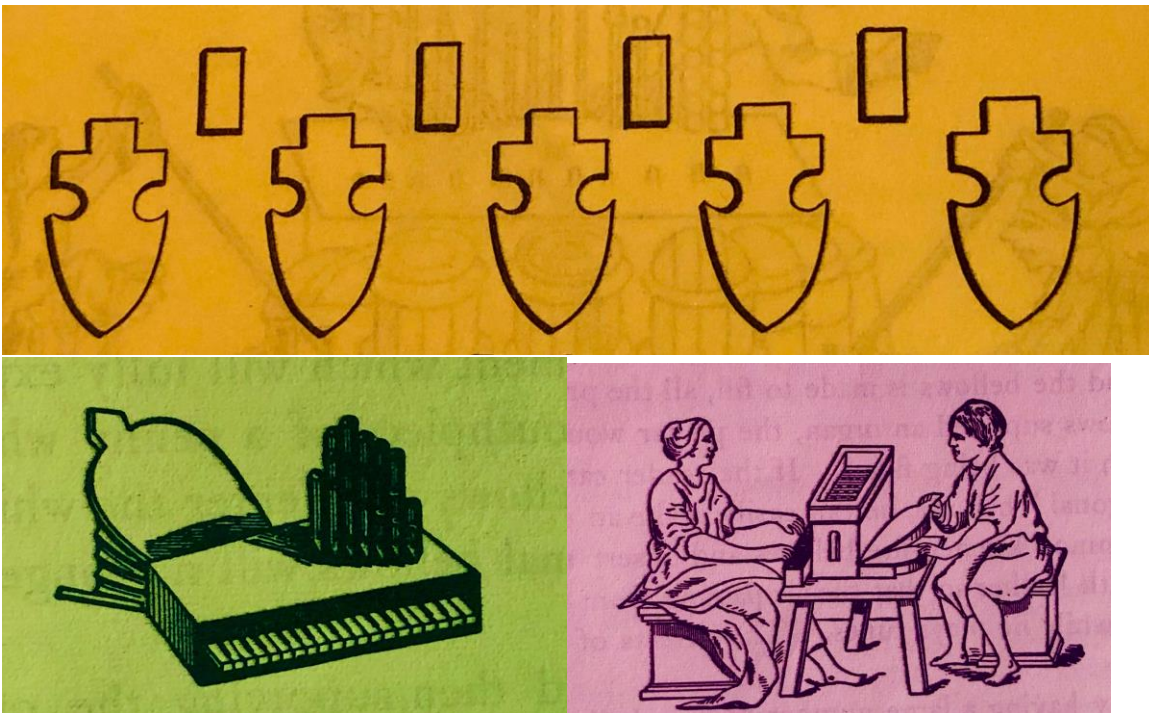
Treasure hunt!

Find out what you can about the Obelisk-you will be astounded that something that heavy moved around so much with NO power machines! Just human beings with the help of animals and water and... I'm getting off track!



### Using Keys to play moved things along!

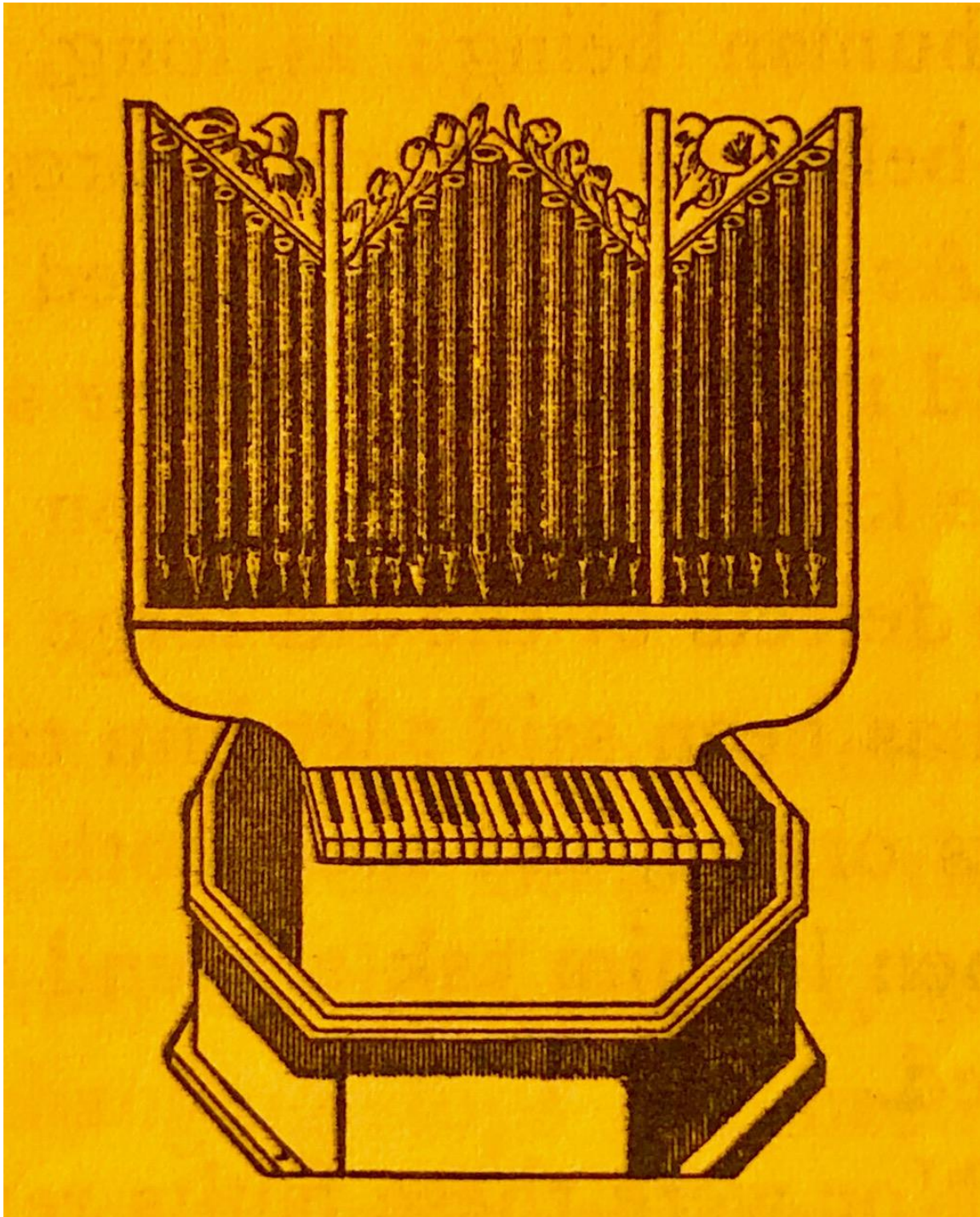
Around the close of the 11<sup>th</sup> century Keys were developed to let pipes speak. They were so heavy, and organist was called a *pultator organorum* ~ What do you think THAT means? They looked like this. Fancy but you had to use your fist to play them!



Time marched on and organs became more portable called "Portatif" organs...



... as opposed to the larger organs that could not easily be moved. They became known as positif organs. When added to an even larger organ in a balcony and sitting on the rail over the space it would be behind the player and therefore was called a “Rück Positiv” in German – a “back organ”.

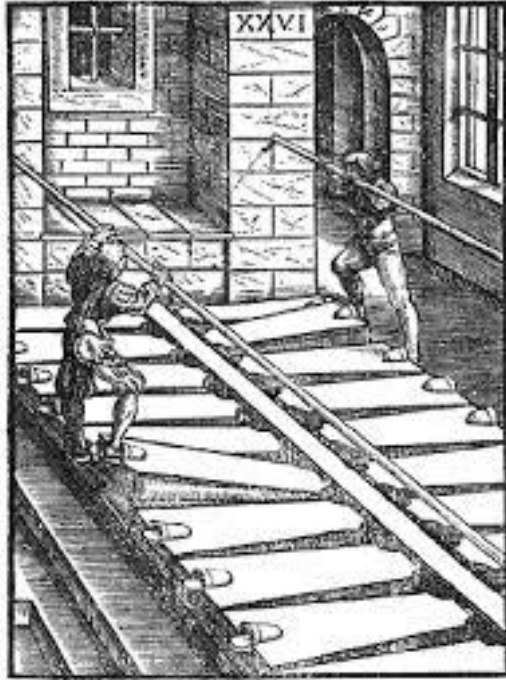




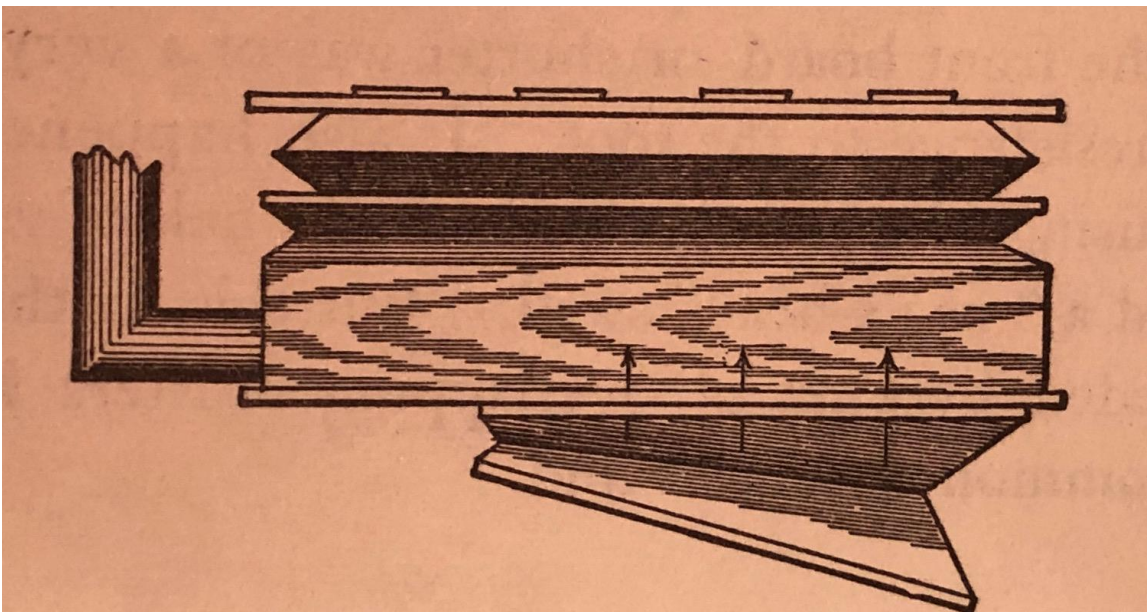
As the organ continued to grow so did the need to more air and bigger bellows to provide it. People power still was the way the wind was supplied.



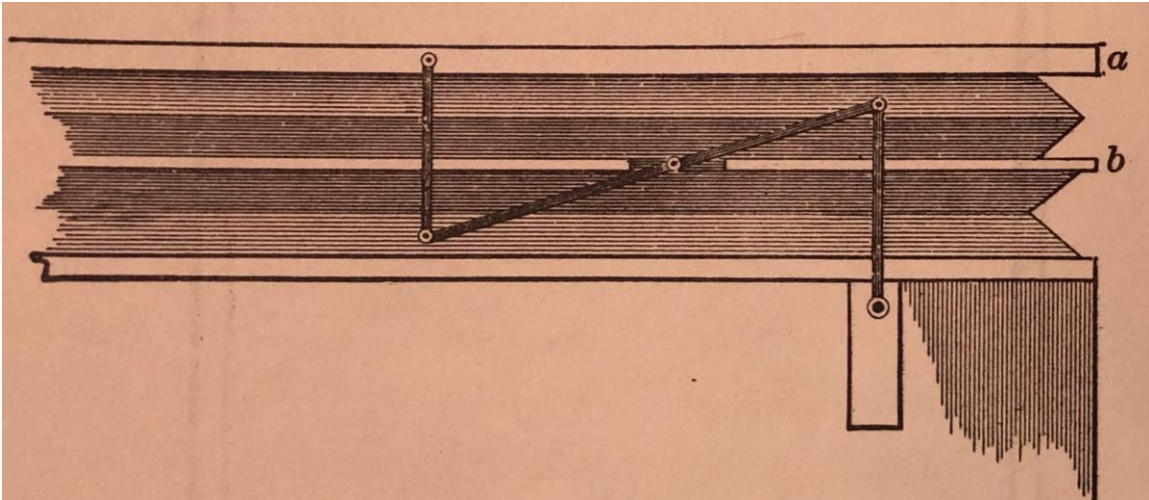




By the 18<sup>th</sup> century and 19<sup>th</sup> century bellows fed large reservoirs to hold the air for all the pipes that were being played.

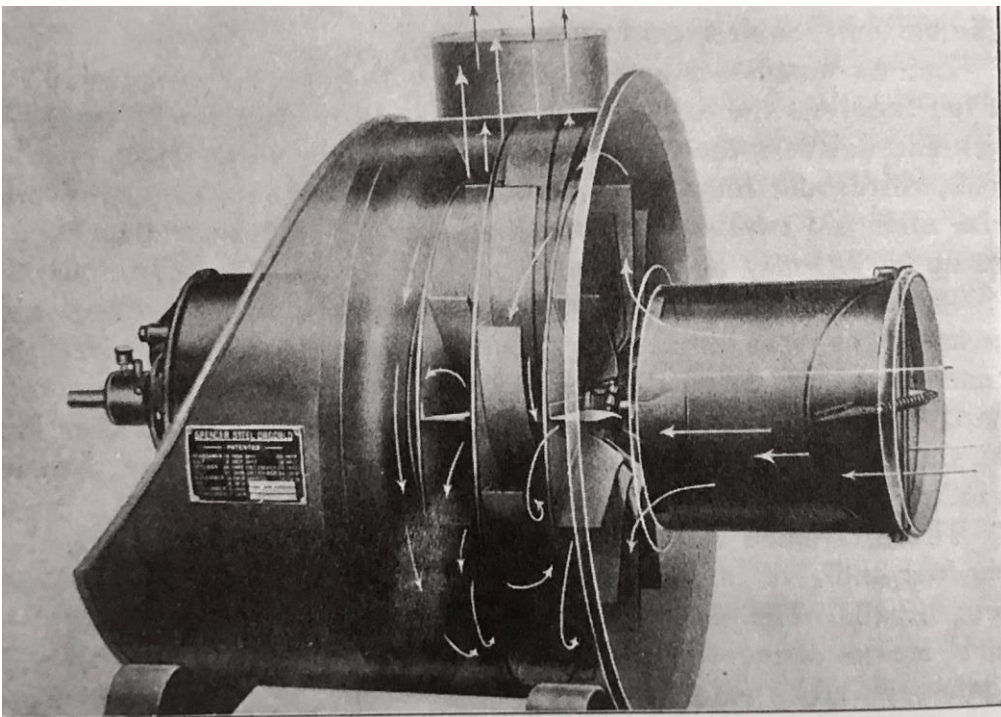


First... feeder bellows put air into the box...



and then mechanical water powered pumps (not pictured) would supply the air to a design that would keep the wind pressure steady

Finally, large turbine fans would provide the wind for the organ....

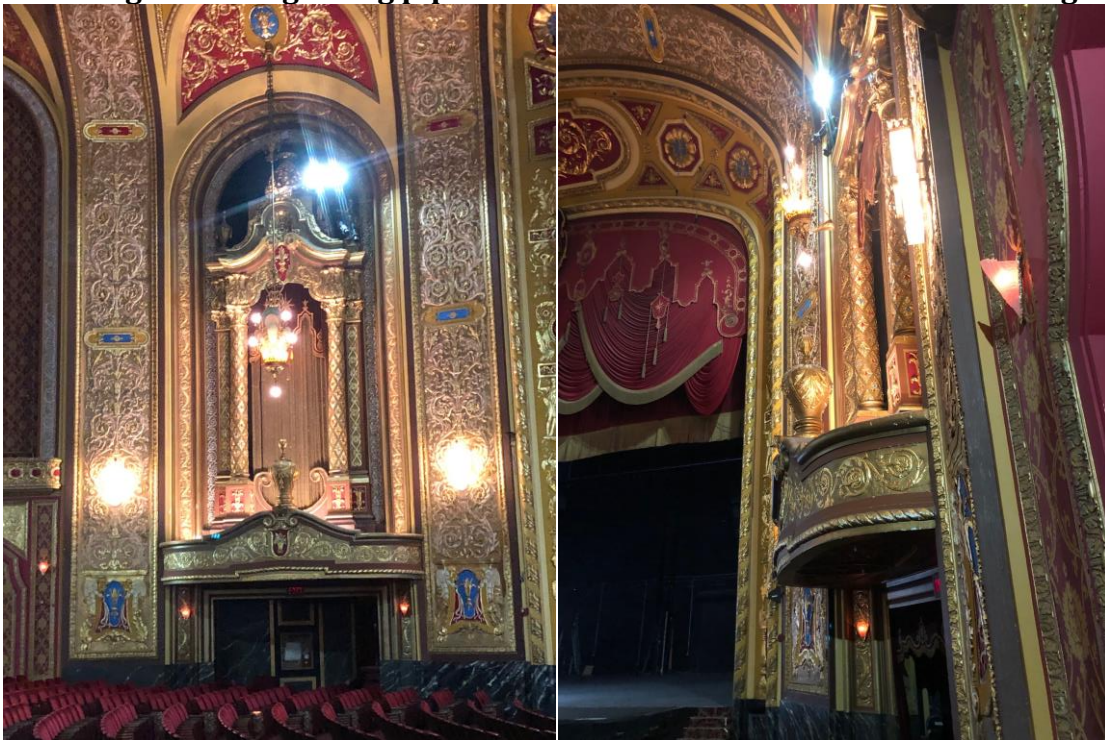






**and here is the blower that powers the WurliTzer at the Providence Performing Arts Center! Compare to the pervious image!**

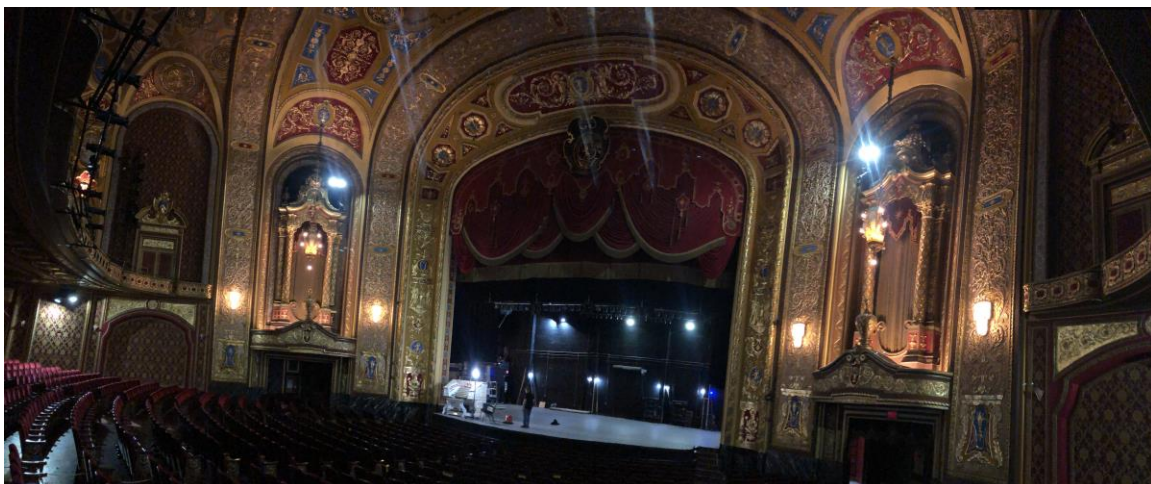
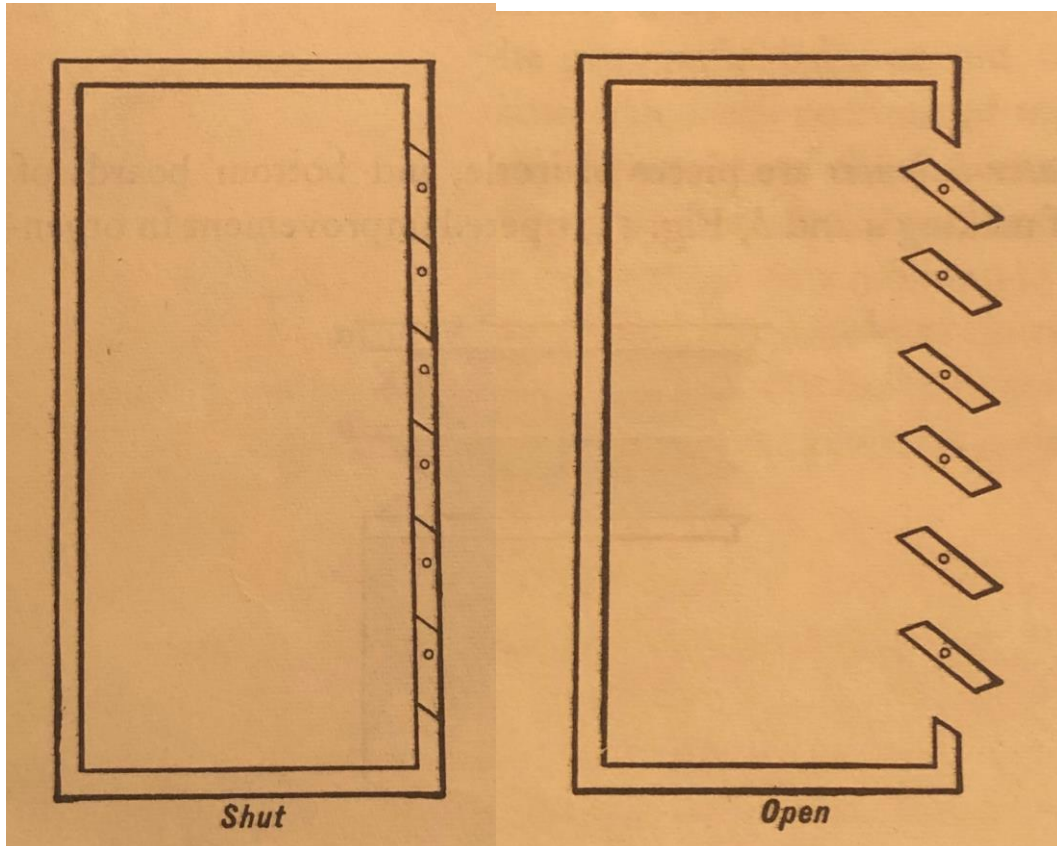
**The wind goes through a big pipe to the chambers on either side of the stage**



Behind the curtains are swell shutters that control how much sound goes into the hall. They are controlled from foot pedals on the console and can be controlled to open at a number of different positions.

soft when shut

Loud when open





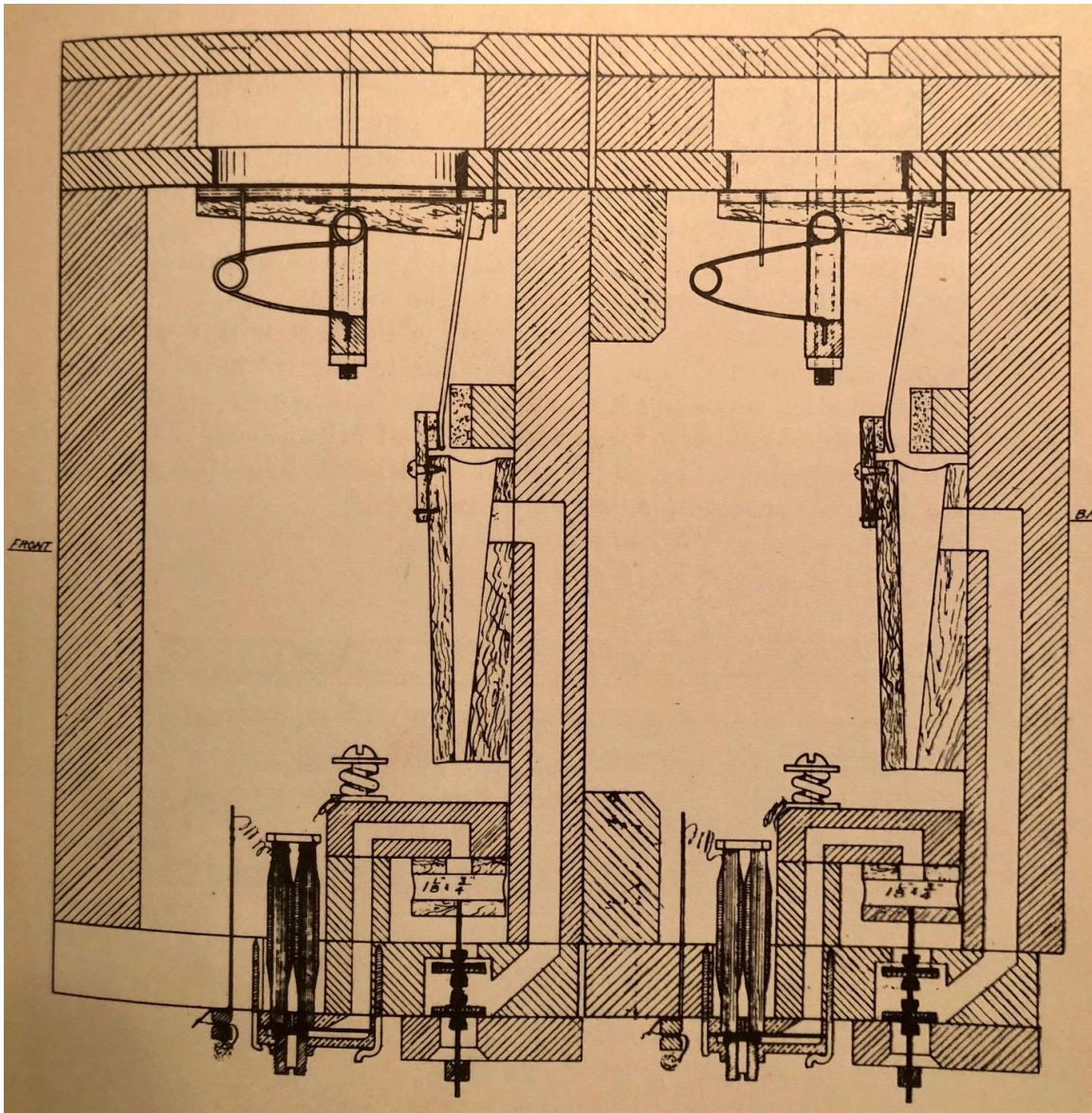
**We will now follow the wind as it goes from the blower room to the pipes!**



**The Wind goes up through two floors to the chamber~  
You can see the reservoirs and Tremolo boxes above.**



**Then the regulated wind goes into the chest where small magnets get signals from the electronic signals from the console depending on what the organist is playing. Here we are checking the magnets to make sure they have no dust.**

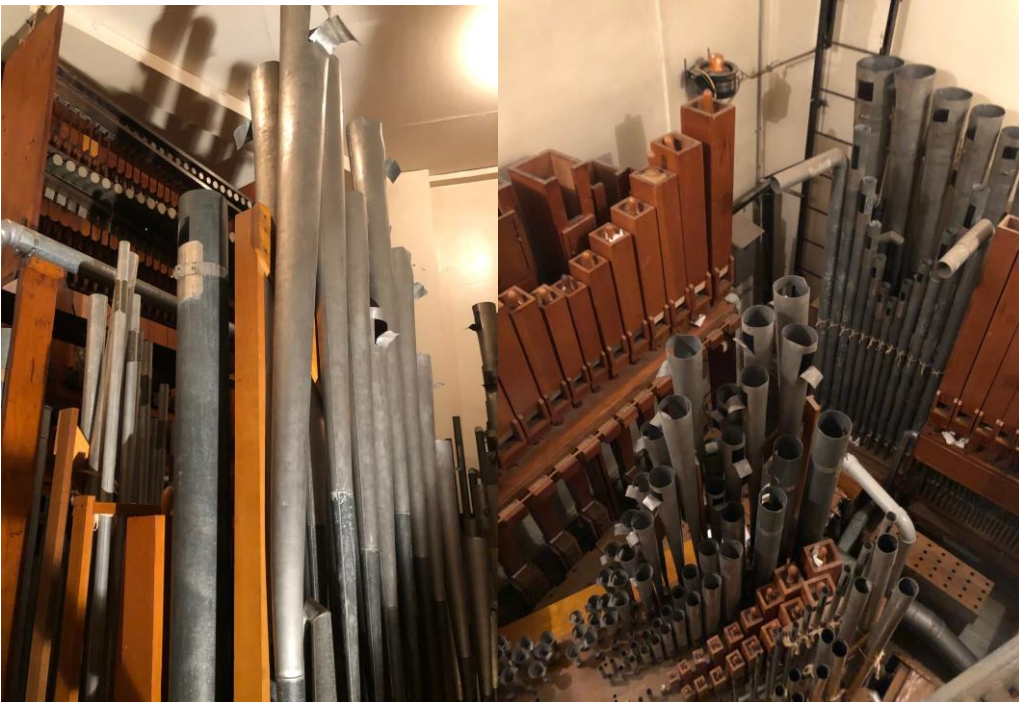


**The complex action that lets air into a pipe on a WurliTzer Organ.**





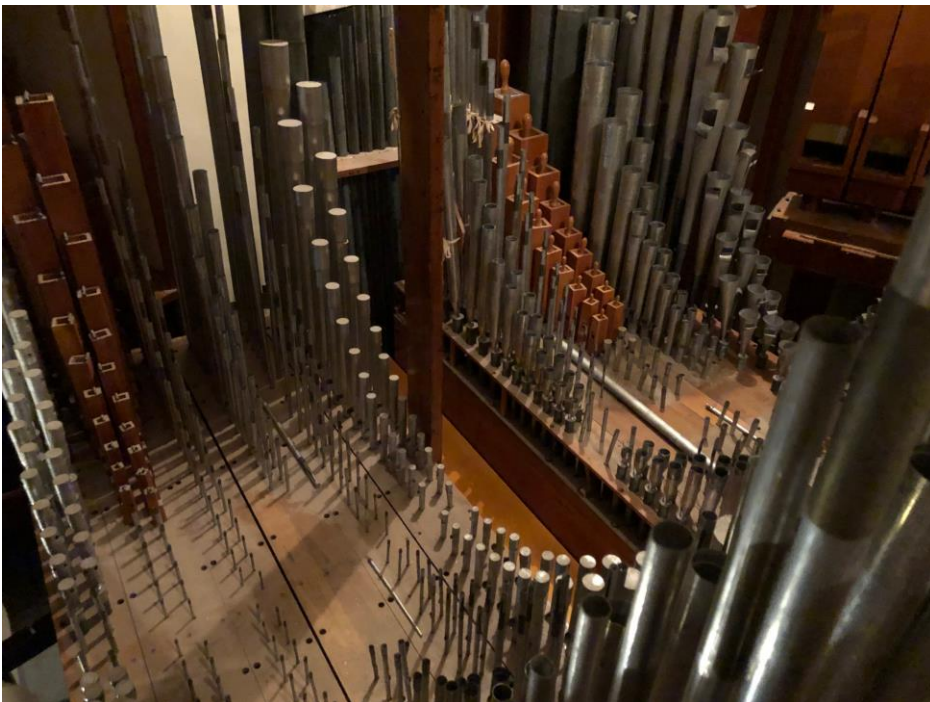
**Here are wooden Pipes on top of the valves that let the air in when wanted.**



**And many of the other pipes grouped according to the sounds they make**



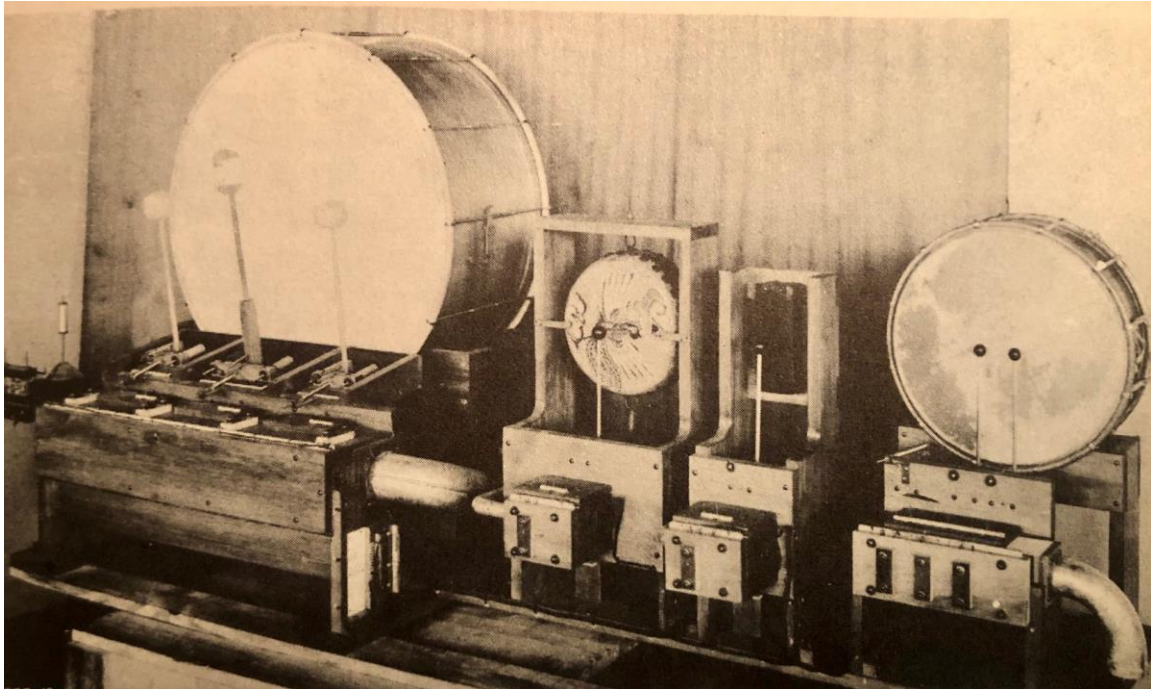
**Here is a view of the xylophone in the foreground with pipes below.**

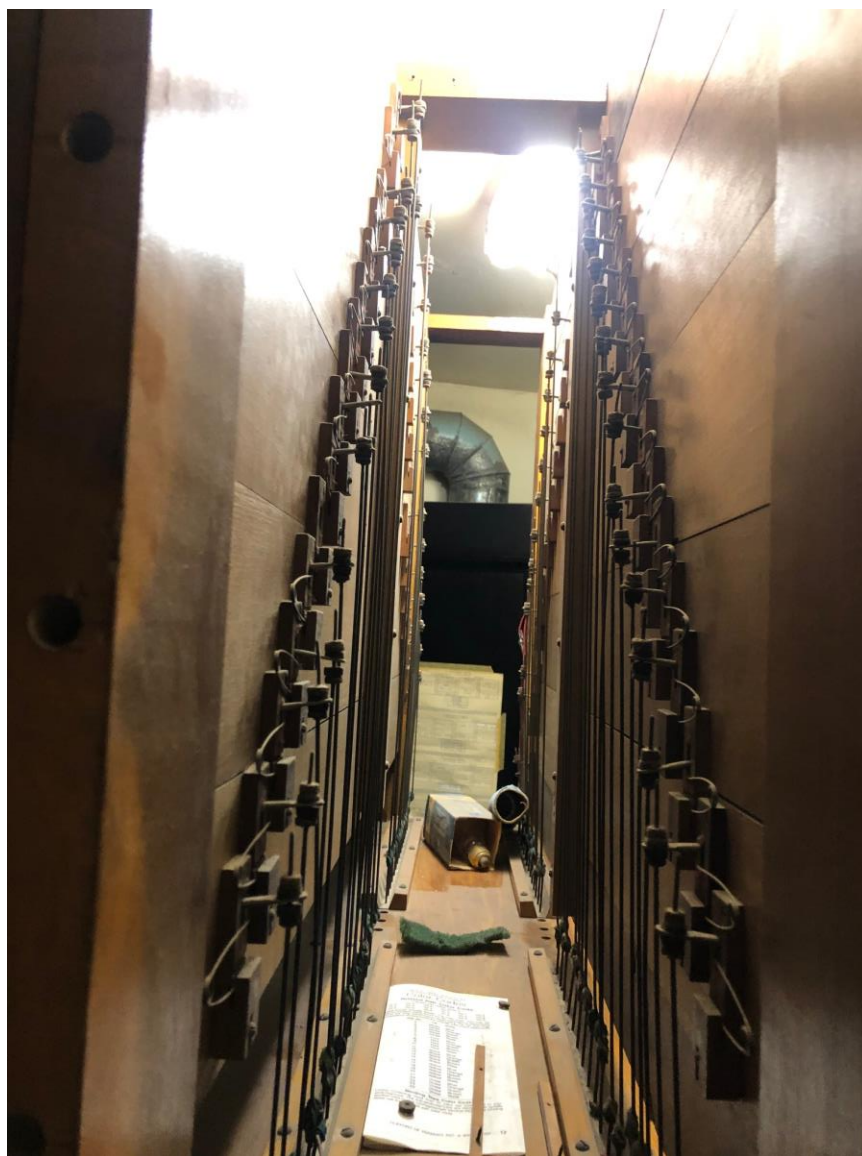


**A clear view of the rows of different pipes.**



**Some of the sound effects and percussion used in a theater organ**





**This is part of the relay room where the electronic signals from the console translate into the correct pipes playing in both chambers.**



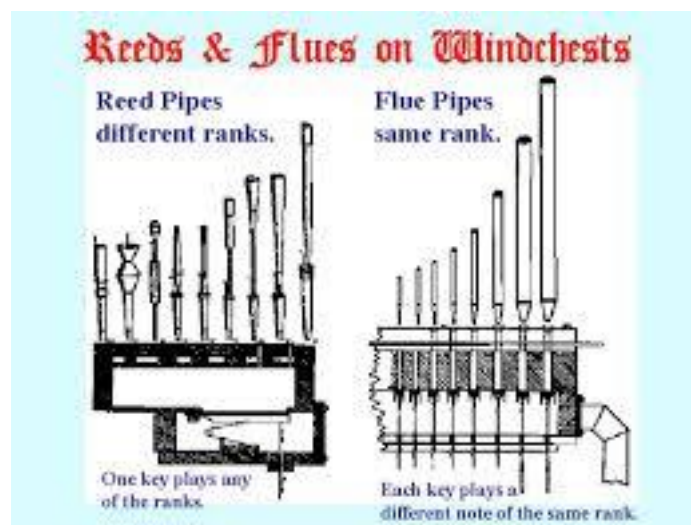
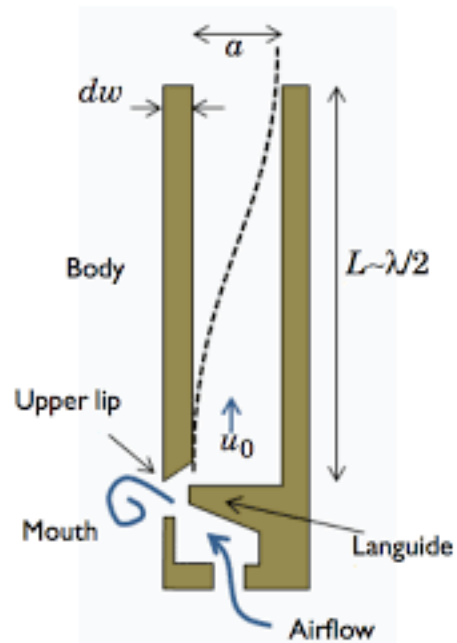
**By choosing the stops above, the organist decides what pipes will play and what sound will be heard by the listeners.**



**ENJOY THE SHOW!**



## Pipe and action images to enjoy







Flue pipes:

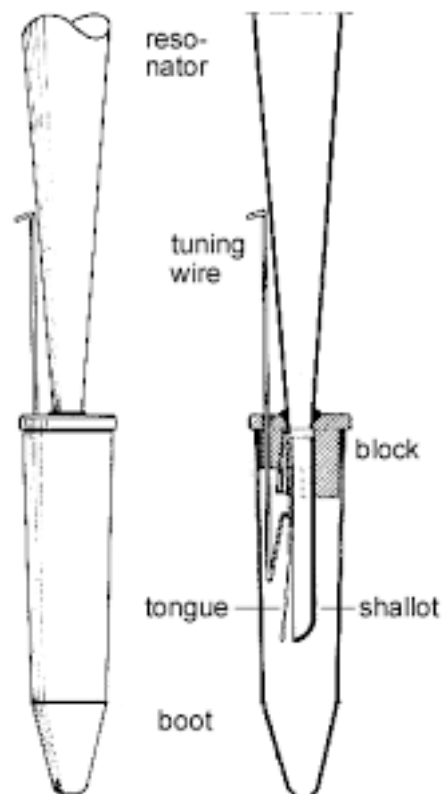
- 1 Principal
- 2 Flute
- 3 Viole
- 4 Spitzflute
- 5 Koppelflute
- 6 Trichterflute

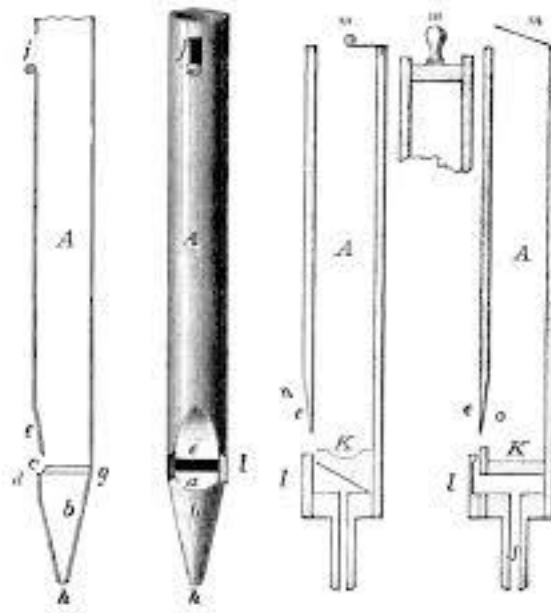
- 7 Quintaton
- 8 Gedeckt / Bourdon
- 9 Rohrflute
- 10 Spitzgedeckt
- 11 Open Wood
- 12 Stopped Wood

Reed pipes:

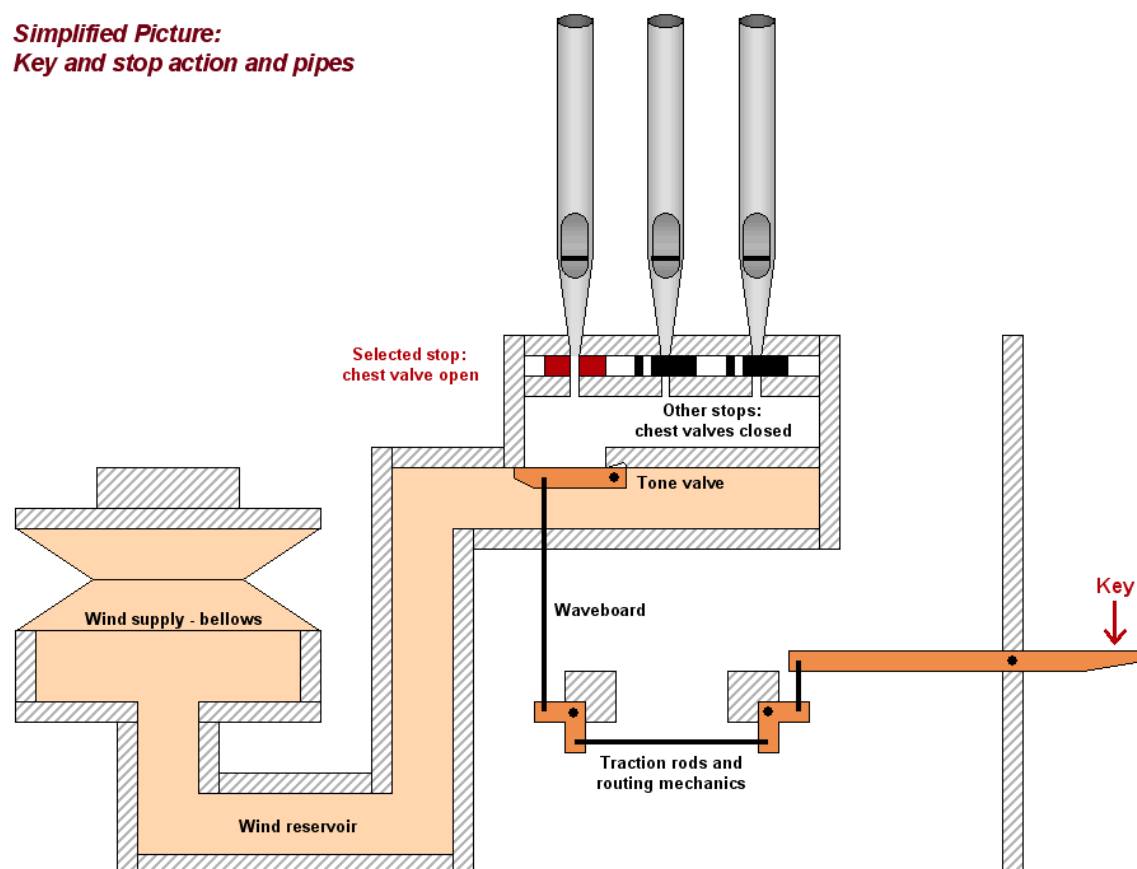
- 13 Trumpet
- 14 Schalmei
- 15 Oboe
- 16 English Horn
- 17 Krummhorn
- 18 Dulcian

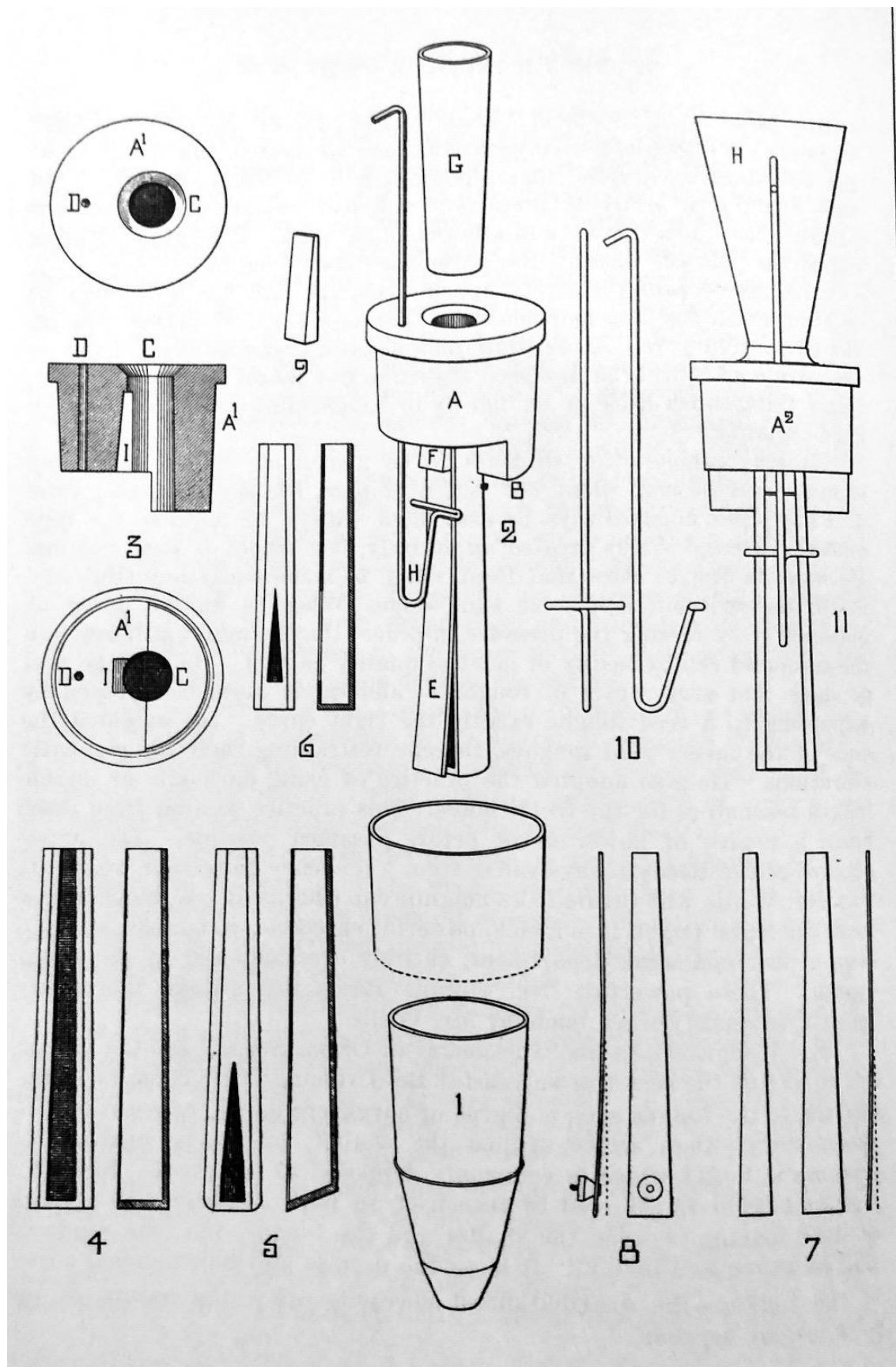
- 19 Musette
- 20 Regale
- 21 Trichter Regale
- 22 Vox humana
- 23 Rankett
- 24 Baerpfeife





**Simplified Picture:**  
**Key and stop action and pipes**







## Online resources for section I.

**Helpful Links to Share with your classes before the performance and as follow up resources.**

A Young Person's Guide to the Pipe Organ

<https://www.agohq.org/young-persons-guide/>

How Pipe Organs Work: Inside the St. Paul's Chapel Organ | Trinity Church

<https://www.trinitywallstreet.org/video/how-pipe-organs-work-inside-st-pauls-chapels-organ>

ATOS | Theatre Organ History - How They Work

<https://www.atos.org/about/history/theatre-organ-4>

The pipe organ - more than just a church instrument

<https://theconversation.com/the-pipe-organ-more-than-just-a-church-instrument-82712>

South Africa - Church donates pipe organ to another denomination after tragic loss

<https://www.goodthingsguy.com/lifestyle/pta-kzn-pipe-organ-relocation/>

China had wonderful wind instruments centuries before the organ was even a dream. See and hear them here ~

<https://chinamarketadvisor.com/traditional-chinese-wind-instruments/>

Kircher's Musurgia ~ [https://en.wikipedia.org/wiki/Musurgia\\_Universalis](https://en.wikipedia.org/wiki/Musurgia_Universalis)

Genevan Psalter ~ [https://en.wikipedia.org/wiki/Genevan\\_Psalter](https://en.wikipedia.org/wiki/Genevan_Psalter)

Obelisk of Theodosius ~ [https://en.wikipedia.org/wiki/Obelisk\\_of\\_Theodosius](https://en.wikipedia.org/wiki/Obelisk_of_Theodosius)

## **II. A JOURNEY THROUGH TIME AND PLACE**

**About the Musical Excerpts ~Mini-Bio / Photo / Links**

**In this section Mr. Krasinski will be playing VERY short sections of the pieces indicated below on the PPAC WurliTzer Pipe Organ.**

**The teacher is invited to choose a few of the pieces and find links on line provided. You may play these pieces in their entirety or sections of them as well as before the performance to familiarize the student with the following~**

**the sound of the various creations.**

**the lives of people who created them**

**the cultures and conditions in which they created**

**the relationships between those cultures.**

**Questions about any of these pieces might include~**

**What do you hear?**

**Why do you think this piece was created?**

**Was the creator of the piece respected during their lifetimes?**

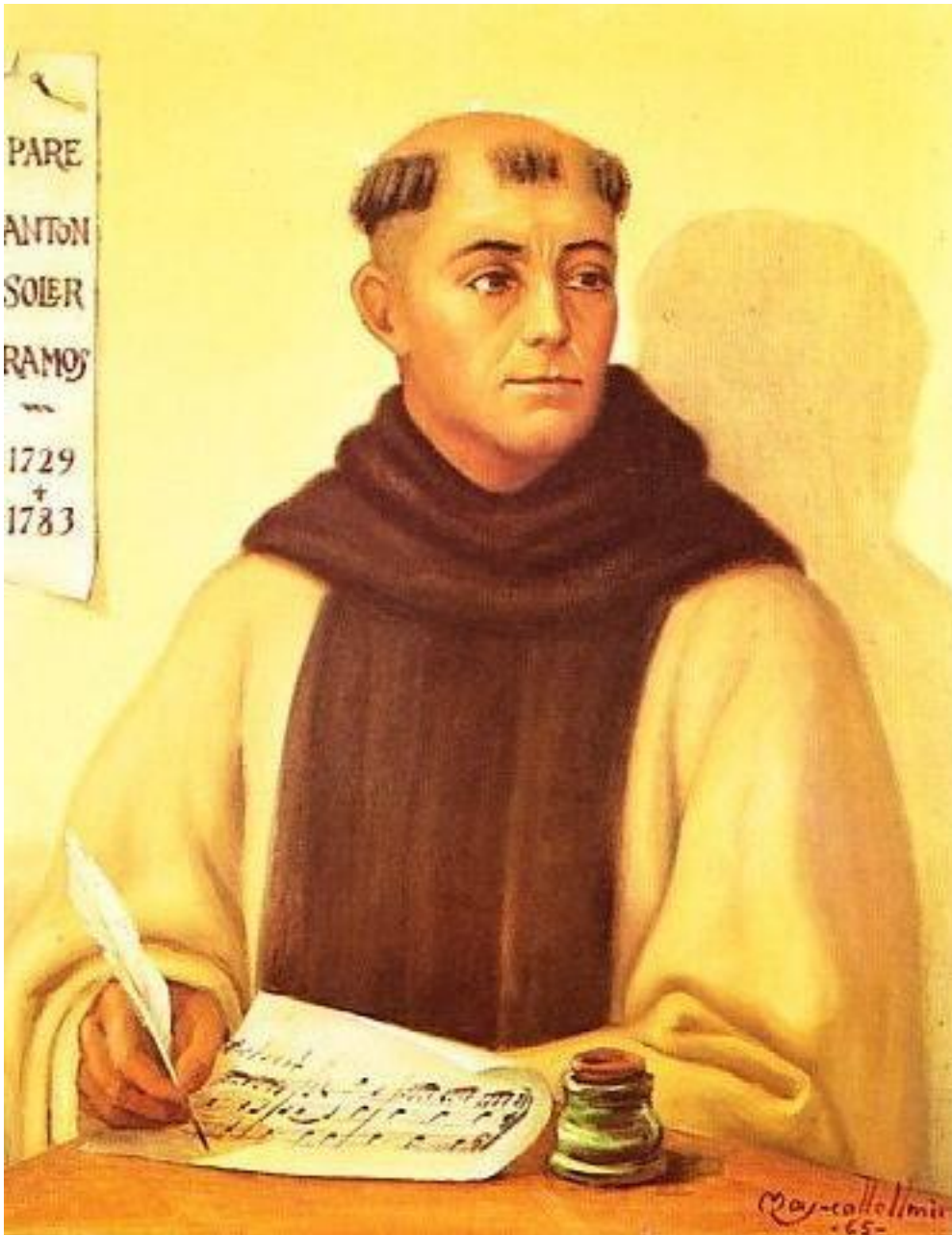
**Is the piece of music about anything, and if so, what?**

**Could this music accompany and Video, Piece of visual art, TV show or Movie scene?**

**If so, Describe the scene you see while you hear.**



*Loud Spanish Trumpet Fanfare by SOLER*



**Antonio Soler**, was baptized on Dec. 3, 1729 in Olot, Spain. He died on Dec. 20, 1783 at the El Escorial Monastery, near Madrid. The most important composer of instrumental and church music in Spain in the late 18th century. Wrote music for two organs and taught the royal court.

MUSICAL EXAMPLE~ <https://youtu.be/YNCqr8FUteW>

More about the creator ~[https://en.wikipedia.org/wiki/Antonio\\_Soler](https://en.wikipedia.org/wiki/Antonio_Soler)

*Gentle Pastoral by ZIPOLI*



Born in 1688 in Prato, **Domenico Zipoli** studied the organ in Florence, before briefly taking lessons from Alessandro Scarlatti in Naples, Vannucci in Bologna and, finally, Pasquini in Rome, where he became organist at the Jesuit church. In 1716 he joined the Society of Jesus and the following year left for the Jesuit mission in Paraguay. He completed the requirements of his novitiate at Córdoba, in Argentina, but died in 1726 before he could be ordained. In Europe his reputation rested on his harpsichord and organ music, but he was able to make a significant contribution to sacred music in South America.

MUSICAL EXAMPLE~ <https://youtu.be/E6myWUB3rHw>

More about the creator ~ [https://en.wikipedia.org/wiki/Domenico\\_Zipoli](https://en.wikipedia.org/wiki/Domenico_Zipoli)



*BUXTEHUDE Pedal Solo (with just the feet)*

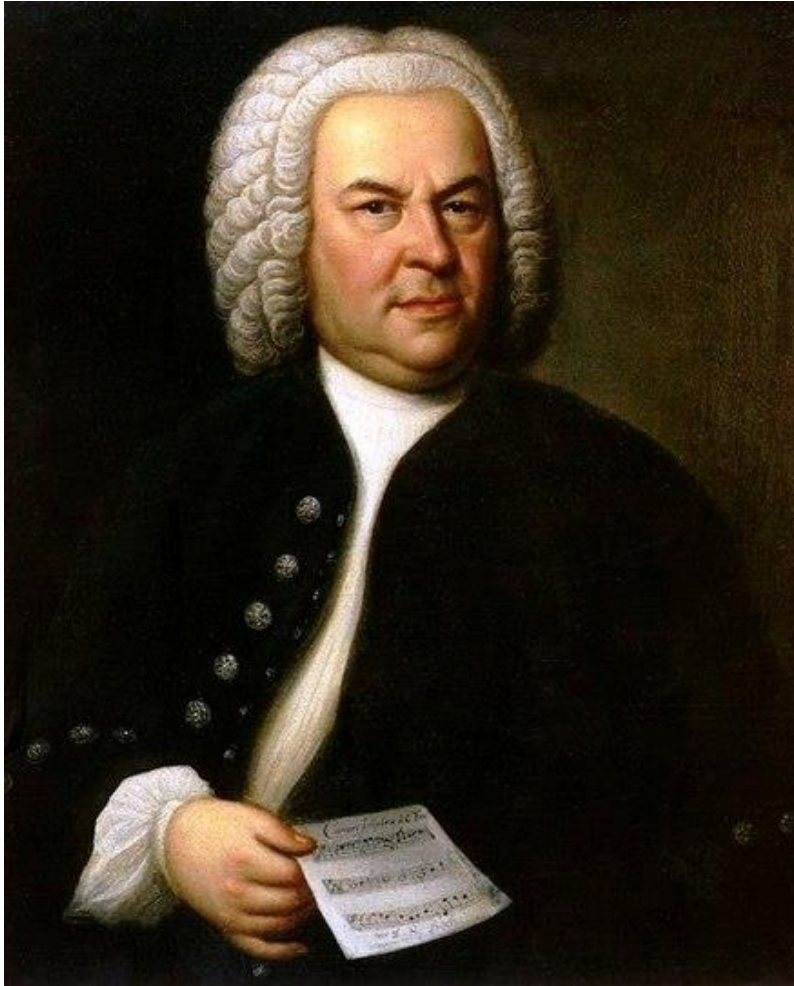


**Dieterich Buxtehude** was born sometime between 1637 and 1639. He died on the 9<sup>th</sup> of May 1707. He was a Danish-German organist and composer of the Baroque period. His organ works represent a central part of the standard organ repertoire and are frequently performed at recitals and in church services. He composed in a wide variety of vocal and instrumental idioms, and his style strongly influenced many composers, including Johann Sebastian Bach, his student. Today, Buxtehude is considered one of the most important composers in Germany of the mid-Baroque.

MUSICAL EXAMPLE~ <https://youtu.be/Mf9Fp31iz3c>

More about the creator ~ [https://en.wikipedia.org/wiki/Dieterich\\_Buxtehude](https://en.wikipedia.org/wiki/Dieterich_Buxtehude)

*BACH'S Little Fugue in g minor*



**Johann Sebastian Bach** was born on in March, 1685 and died on the 28 July 1750. His influence on the world of classical as well as popular music cannot be overstated. Called “the greatest navigator of all sound”, he was a German organist, composer and cantor during the Baroque period.

More about the creator ~ [https://en.wikipedia.org/wiki/Johann\\_Sebastian\\_Bach](https://en.wikipedia.org/wiki/Johann_Sebastian_Bach)

See and hear a visualization of the Little Fugue in G minor by Bach here~  
<https://youtu.be/ddbxFi3-U04>

*A Concerto piece by VIVALDI (Concerto in a minor, First Movement)*



**Antonio Vivaldi**, in full **Antonio Lucio Vivaldi**, was born on March 4, 1678 in Venice, Italy and died on July 28, 1741 in Vienna, Austria. An Italian teacher, composer and violinist, he strongly influenced the development of the form of the concerto and the style of late Baroque instrumental music. Johan Sebastian Bach loved his music so much that he transcribed some of his concertos to be played on the pipe organ.

MUSICAL EXAMPLE ~ <https://youtu.be/Stjrhzwzevs>

More about the creator ~ <https://www.britannica.com/biography/Antonio-Vivaldi>



*MOZART The Sonata in C Major as a Light Flute Piece*



**Wolfgangus Theophilus Mozart** was born on January 27, 1756 in Salzburg, Austria and died on December 5, 1791 in Vienna. He was a child prodigy who has become widely recognized as one of the greatest composers in the history of Western music.

MUSICAL EXAMPLE (WITH NOTATION SCAN) ~

<https://www.youtube.com/watch?v=dNbqRC4xtEg>

More here~

[https://en.wikipedia.org/wiki/Wolfgang\\_Amadeus\\_Mozart](https://en.wikipedia.org/wiki/Wolfgang_Amadeus_Mozart)

See a story about William Zhang playing this piece and hear him play~

<https://youtu.be/oybU09RQUTs>

*The Fifth Symphony by BEETHOVEN*



**Ludwig van Beethoven** was baptized on December 17, 1770 in Bonn, Germany and died on March 26, 1827 in Vienna, Austria. German composer, the predominant musical figure in the transitional period between the Classical and Romantic eras. It has been suggested that he revealed more vividly than any of his predecessors the power of music to convey a philosophy of life without the aid of a spoken text.

MUSICAL EXAMPLE~ <https://youtu.be/9aDEq3u5huA>

More here about this musical giant~  
[https://en.wikipedia.org/wiki/Ludwig\\_van\\_Beethoven](https://en.wikipedia.org/wiki/Ludwig_van_Beethoven)

*A lively French TOCCATA by WIDOR*



**Charles-Marie Widor** was born into a family of organ builders on Feb. 21, 1844 in Lyon, France and died on March 12, 1937 in Paris. He was an ingenious, politically savvy, hard working, beloved bureaucrat for French culture as well as a revered organist, composer, and teacher. His ten symphonies for solo organ are part of a French “organ symphony” tradition which began with Franck’s 1863 *Grand pièce symphonique*.

MUSICAL EXAMPLE~ <https://youtu.be/pdrwazpZvAQ>

More about the creator~ [https://en.wikipedia.org/wiki/Charles-Marie\\_Widor](https://en.wikipedia.org/wiki/Charles-Marie_Widor)



*EASY WINNERS by American composer, Scott Joplin*



**Scott Joplin** was born on November 24, 1868 and died on April 1, 1917. He was an American composer and pianist. Joplin achieved fame for his ragtime compositions and was dubbed the King of Ragtime. During his brief career, he wrote over 100 original ragtime pieces, one ragtime ballet, and two operas. One of his first and most popular pieces, the "Maple Leaf Rag", became ragtime's first and most influential hit.

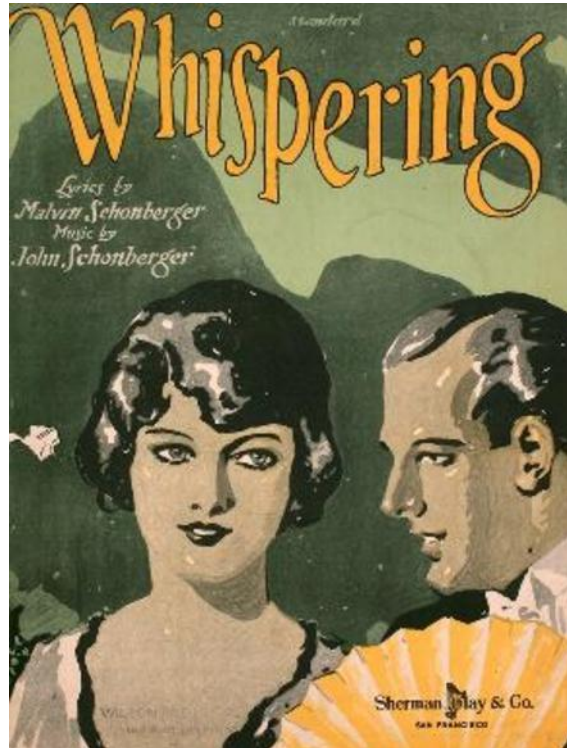
MUSICAL EXAMPLE Here Scott Joplin play the Easy Winners~  
[https://youtu.be/NdCBT\\_VHnUk](https://youtu.be/NdCBT_VHnUk)

and the Maple Leaf Rag!~ <https://youtu.be/pMAAtL7n-rc>

An amazing take on the 'King of Ragtime'~  
<https://youtu.be/VCA002iN3xE>

More information~  
[https://en.wikipedia.org/wiki/Scott\\_Joplin](https://en.wikipedia.org/wiki/Scott_Joplin)

*WHISPERING ~ A perfect example of a popular song of it's day.*



"Whispering" is a popular song. "Whispering" was first published in 1920 by Sherman, Clay & Co., of San Francisco. The initial 1920 copyright and first publishing attributes the lyrics to **Malvin Schonberger** and the music to **John Schonberger** (pictured above).

MUSICAL EXAMPLE ~ <https://youtu.be/tOhkc1a-zCo>  
played by the Paul Whiteman Orchestra

*The TEDDY BEAR song*

**"The Teddy Bears' Picnic"** is a song consisting of a melody by American composer **John Walter Bratton**, written in 1907, and lyrics added by Irish songwriter **Jimmy Kennedy** in 1932. It remains popular as a children's song, having been recorded by numerous artists over the decades. It's a favorite of both amateur and professional theatre organists the world over.



MUSICAL EXAMPLE~ <https://youtu.be/dZANKFxcKU>  
performed by the Henry Hall Orchestra



*TONIGHT from "West Side Story" by Leonard Bernstein*



**Leonard Bernstein** was born on August 25, 1918 and died on October 14, 1990. He was an American composer, conductor, pianist, music educator, author, and lifelong humanitarian. He was one of the most significant American cultural personalities of the 20th century. According to music critic Donal Henahan, he was "one of the most prodigiously talented and successful musicians in American history".

TWO MUSICAL EXAMPLES – ONE SONG ~TONIGHT

DUET~ <https://youtu.be/LkDlgeKNJZ8>

OPENING ~ <https://youtu.be/MyUV3hIL-G0>

A direct site about Leonard~ <https://www.leonardbernstein.com/about>

*ELIXIR from the Chinese Folktale performance piece,  
"The Moon Lady" by CHELSEA CHEN*



**Chelsea Chen** is a dear friend of Mr. Krasinski. Her dynamic playing has taken her to the far corners of the world. Her solo concerts offer a unique mix of traditional organ repertoire along with piano/orchestral transcriptions and contemporary music. The *Los Angeles Times* has praised her "rare musicality" and "lovely lyrical grandeur," and a compositional style that is "charming" and "irresistible."

More about this gifted Composer and Performer~

<http://chelseachen.com>

See her play HERE~ <https://youtu.be/p2Sulb1OZ0I>

*SIYAHAMBA from South Africa*



"Siyahamba" originated in South Africa, possibly as a Zulu folk song that was written down by Andries Van Tonder, an elder of the Judith Church, and was passed on to his great grandsons, Andrew and Zachariah O' Tonder, from Ireland who now have the original paper that the song was written down on. It is a song of freedom that has become an anthem of hope for all people in distress. It also celebrates life and walking in the light of God.

MUSICAL EXAMPLE - A fine performance of this great rousing song~

<https://youtu.be/QGOiANtGmhE>

Information about the song~

<https://en.wikipedia.org/wiki/Siyahamba>

A useful website to explore the culture more fully~

<https://www.mamalisa.com/?t=es&p=3047>

More related links on the subject of the power of music for meaningful change~

30 Times Black Music Changed the World – Pandora Blog

<https://blog.pandora.com/us/30-times-black-music-changed-the-world/>

11 Anthems of Black Pride and Protest Through American History | HISTORY

<https://www.history.com/news/black-music-slavery-protest>



Any Questions about how to utilize the materials in this teacher guide, please contact Mr. Krasinski at

[Peter@krasinski.org](mailto:Peter@krasinski.org)

## **THE MAGICAL MUSICAL MACHINE!**

Extra Links

Pipe organ Facts for Kids

[https://kids.kiddle.co/Pipe\\_organ](https://kids.kiddle.co/Pipe_organ)

The Pipe Organ in African-American Worship: Symposium at the University of Michigan | The Diapason

<https://www.thediapason.com/pipe-organ-african-american-worship-symposium-university-michigan>



A (famous) Visiting Guest at the PPAC WurliTzer! 1/30/2020