

**HISTORY AUDIO-DATEI**

## Hydraulic Lifts

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# Hydraulic Lifts

**Aufzüge sind heute etwas Selbstverständliches. Doch es bedurfte der Erfindung einer Sicherheitsbremse und der Umstellung von Wasserkraft auf Elektrizität, bis es soweit war.**

The Smithsonian Institution *acquired* a small hydraulic *elevator* in 1984. It came from a five-story Boston house. It had been installed there in 1902, and it ran until it jammed 40 years later. Curator Robert Vogel describes this lift, along with the whole forgotten technology of early *domestic* elevators.

The electric elevators that we ride appeared in the 1880s, right on the *heels* of public electric power. And they made it possible to build really tall buildings. But serious elevator-building had started 50 years before that. The first powered elevators appeared around 1830, when factories began using their central power systems to drive *rope-and-pulley* lifts.

Those early systems couldn't serve businesses and *dwellings*. They needed independent power supplies. Steam engines were the *court of first resort*, but they were *cumbersome*. Someone had to be on duty, *stoking* a boiler and *lubricating valves*.

An even more *pernicious* problem had to be solved before the public was going to accept any kind of elevator. People wanted some guarantee that the cab wouldn't fall like a stone if the power failed or a rope broke. Potential buyers looked at a small room riding on the end of *spindly* cable, and it reminded them of the hanging sword of Damocles.

Elisha Otis, whose name still decorates elevators today, solved the safety problem in 1854. He invented a *foolproof* automatic braking system. After that, at least for a time, steam elevators became as popular as any system that cumbersome could become.

Meanwhile, high-pressure public water systems were being put in after the Civil War, and people found two ways to put them to use: You could put an elevator at the end of a two or three-story *plunger*, but you usually wanted to ride higher than that. In the more useful system, a large hydraulic *piston* drove rope through a series of *pulleys*. A five-foot hydraulic piston *stroke* lifted an elevator fifty feet or more, and the power simply came out of the central water *main*.

So, at the same time electric elevators were making it possible to *erect* skyscrapers, these

obtained  
lift

creative

household

\*see list

\*see list

residences

first choice ... awkward

adding fuel to

greasing ... \*see list

bad

thin

reliable

\*see list

\*see list

\*see list

pipe

build

hydraulic lifts appeared in the high-rise houses that were springing up in the crowded Eastern cities. In 1901 and 1902, 68 of them were installed in Boston alone.

The Smithsonian's lift shows us a technology that most of us aren't even aware of – one that's long since been overtaken by cheaper electric systems. But it was once a clean, *ingenious*, and wonderfully simple solution to a hard problem that arose as our crowded cities began to grow upward. ■

*Prof. Dr. John Lienhard, University of Houston*

<i>acquire, to</i>	erwerben, ankaufen
<i>court of first resort</i>	erste Instanz
<i>cumbersome</i>	beschwerlich, schwerfällig
<i>domestic</i>	häuslich, heimisch
<i>dwelling</i>	Wohnhaus
<i>elevator</i>	Aufzug
<i>erect, to</i>	errichten, bauen
<i>foolproof</i>	narrensicher
<i>heel</i>	Ferse, Absatz
<i>ingenious</i>	genial, raffiniert
<i>lubricate, to</i>	schmieren, ölen
<i>main</i>	Hauptleitung
<i>pernicious</i>	schädlich, böseartig
<i>piston</i>	(Hub-) Kolben
<i>plunger</i>	Kolbenstange, Stößel
<i>pulley</i>	Seilrolle
<i>rope-and-pulley</i>	Flaschenzug
<i>spindly</i>	spindeldürr
<i>stoke, to</i>	beheizen, beschicken
<i>stroke</i>	(Kolben-) Hub
<i>valve</i>	Ventil

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