

Bell Telephone Obtains Biggest Patent Yet

By STACY V. JONES Special to The New York Times.

New York Times (1857-Current file); Feb 27, 1960; ProQuest Historical Newspapers The New York Times (1851 - 2005)
pg. 23

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Data on Computer Assembly Weigh Nearly 11 Lbs.

By STACY V. JONES
Special to The New York Times.

WASHINGTON, Feb. 26—

The Bell Telephone Laboratories, Inc., of New York received this week the largest patent ever granted. It covers elaborate improvements to the American Telephone and Telegraph Company's automatic accounting system for customers' charges on long distance direct dialing.

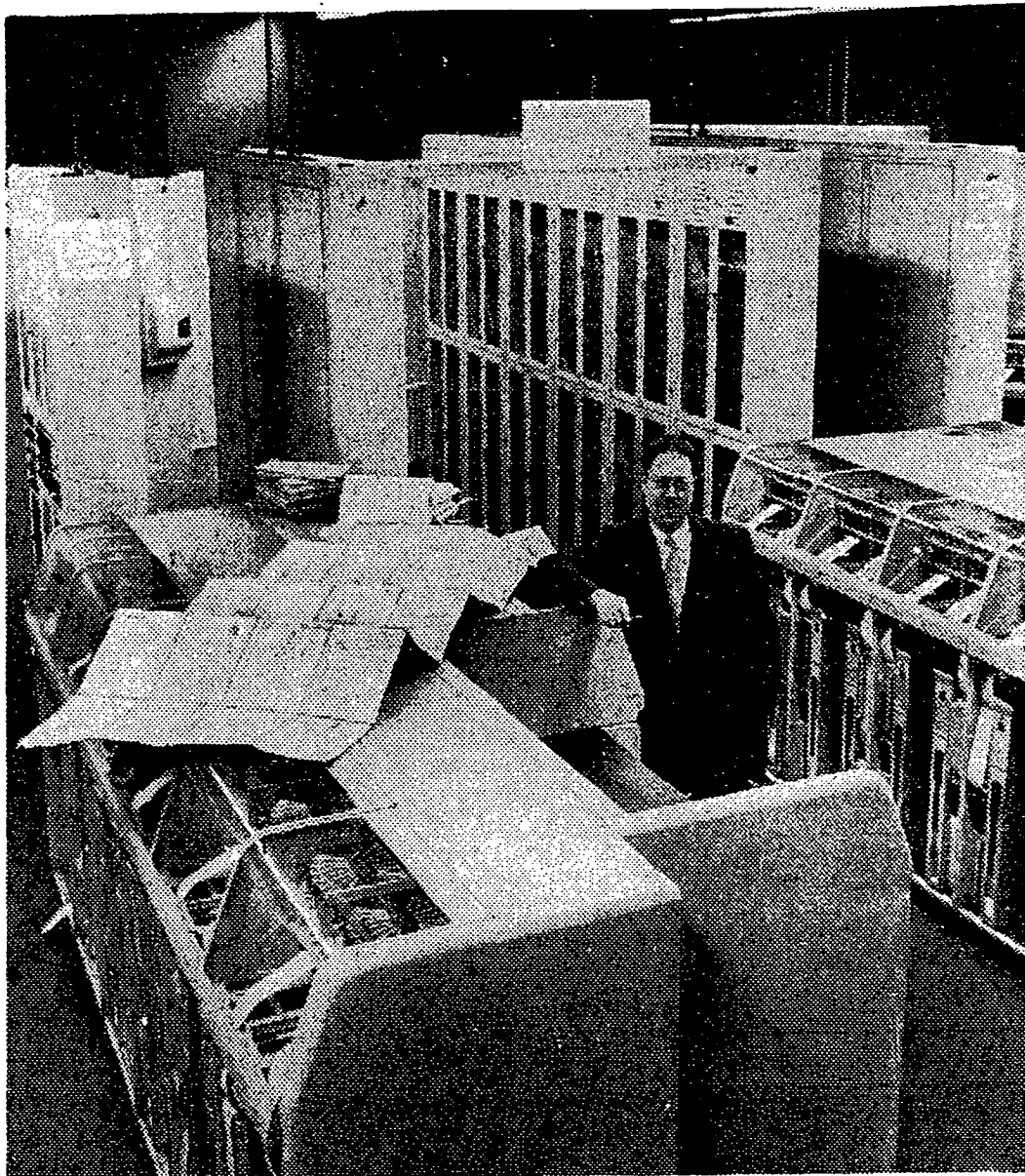
The copy sent to the inventor, Amos E. Joel Jr., weighs ten pounds and twelve ounces. It consists of 354 sheets of drawings and 266 printed pages. In contrast, some patents issued this week covered a single sheet of paper; the average is five and a half pages.

Mr. Joel's invention is an assembler-computer, now in use in the New York area and elsewhere. Although highly complex, it is relatively compact, occupying about twenty by fifteen feet in floor space. There are eleven relay cabinets and eight cabinets for tape machinery.

The 42-year-old Mr. Joel, who plays the organ as a hobby, took only ten months to perfect the invention and "put it down roughly on paper so that any good engineer could understand it easily." Mr. Joel said that it took three additional years to design a production model.

Mr. Joel first conceived the idea for the assembler computer about ten years ago. He had a hand in designing the separate assembler and computer to be replaced by the new machine.

"I observed inefficiencies and some accounting errors in the separate devices," Mr. Joel said. "One day I was struck by the thought that one machine that would handle all functions performed by the pair would be much more efficient. In conceiving it, I found a way to elimi-



Amos E. Joel Jr., engineer at Bell Telephone Laboratories, is framed by part of Assembler-Computer he invented for improvements on Bell System automatic message accounting.

nate errors inherent in the two devices."

The equipment records on tape the originating and called numbers, and the start and finish times for overlapping calls as they come along. As first taped, the information for all calls is jumbled together, and the machine has to sort out and re-assemble the data for each, be-

fore computing the charges. The bills are printed by other equipment.

Seventh-eighths of the assembler-computers are in use in various parts of the country.

The record for what the Patent Office calls jumbo patents had been held by one issued in 1943 to John H. Voss and assigned to Associated Electric

Laboratories, Inc., of Chicago. The older jumbo, which was for a telephone system, was of 220 printed pages and 174 sheets of drawings. According to the Government Printing Office, this week's patent (No. 2,925,957) is 35 per cent larger, and because of changes in type

Continued on Page 29, Column 4

Wide Variety of Ideas Covered By Patents Issued During Week

Continued From Page 23

since 1943 carries one-fifth more characters on each printed page.

The inventor, who has been with Bell Laboratories for twenty years, has applied in all for forty-five patents, some of which are still pending. Five or six are on other phases of automatic accounting. This week's patent was four years in preparation. The application's thirty-eight pounds included 1,233 typewritten pages and 354 drawings. S. N. Turner, the patent lawyer, spent more than two "attorney-years" on the project.

Because of the large number of claims (243), the company paid the Patent Office \$472 in fees, instead of the minimum of \$60. Claims are definitions of an invention.

The copies printed on relatively light paper for sale to the public weigh four pounds and three ounces.

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Bicycle Exerciser

A special bicycle is designed to exercise the chest, arm and shoulder muscles as well as the legs. The inventors say that bicycling is a recognized form of exercise as distinct from a mere means of transportation. They also cite medical opinion that exercising the arm and chest muscles may help certain heart conditions.

The vehicle may be ridden in the orthodox manner, with power transmitted from the pedals to the rear wheel by a chain. A second sprocket wheel and chain, however, are attached to the handle bars and front wheel. By moving both handle bars simultaneously up and down, the rider adds a front-wheel drive and gets an arm and shoulder workout.

The patent (2,926,024) was granted to William C. Huebener of Cincinnati and Lawrence F. Blank of Covington, Ky.

*

'Six-Gun' Missile

The Collins Radio Company of Cedar Rapids, Iowa, received a patent for a guided missile that, instead of a warhead, carries a "six-gun." Roger J. Pierce, the inventor, believes that if used against enemy aircraft it will have increased probability of a kill.

The missile is designed to operate like a manned interceptor aircraft. Around its nose it has a revolving collar carrying a set of guns—six as illustrated

in patent 2,925,965. Each gun has a small infra-red radar system that triggers it when a target comes within the radar beam.

If the missile overtakes a plane in a tail chase, Mr. Pierce expects his revolving guns to shoot one at a time, spacing their shells along the enemy's fuselage.

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Scatter-Shot Arrow

A scatter-shot arrow invented by James C. Ramsey of Lincoln, New Mexico, carries a number of little arrows in its head.

When the marksman draws his bow, the little missile arrows are out of sight inside the tubular head and under a cover. A chain and rubber band arrangement dislodges the cover in flight. As they have relatively little air friction, Mr. Ramsay says, they move out of the main arrow's head and "provide a distinctly larger pattern of contact with the game or other target."

He received patent 2,926,017.

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Brush Masticator

A Californian has invented what he calls a brush masticating machine. It moves along a windrow of brush cuttings or tree trimmings, picks up the branches and twigs, grinds them into small fragments, and either drops them to the ground to form mulch or carts them away.

The brush is first gathered up by a pair of drums provided with blades. A second pair of drums further squashes them and feeds them into a "hog" or masticator. Inside, rotors and anvils complete the grinding.

The inventor, Edward A. Atmore of Santa Paula, says his machine is particularly useful in orchards. (Patent 2,925,703.)

Patent Office records rarely show whether an invention is in production. To get a copy of a patent, send the number and 25 cents to the Commissioner of Patents, Washington 25, D. C. (Design patents are 10 cents each.) To reach an inventor or assignee, if the address given is insufficient, write him in care of the Commissioner of Patents, being sure to cite the patent number.