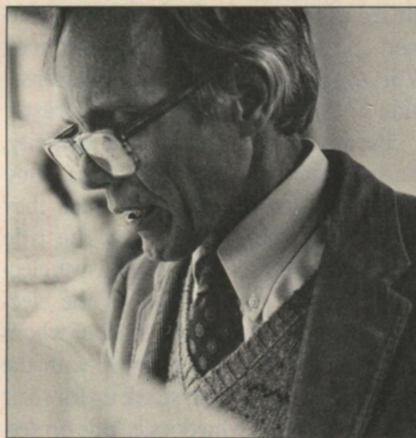


Charles Fisk, Organ Builder

It took a man with a mind primed for the 21st century to restore to American organ building the concise technological principles of a vanished age. That man is the slight, gray-haired Charles Fisk. "I'm the oldest of the traditional builders now," he says with a smile, surprisingly boyish at 57. "But I've been the oldest ever since I started."

A former atomic physicist, Fisk worked on the Manhattan Project as a young man. But his lifelong love of music won out in the 1950s, and he deliberately turned his back on that intense, abstract, and controversial research in order to build organs that bring to life the music of the classical composers. "My scientific work was taking me into the most abstruse fields of particle physics," he explains. "But who has seen a

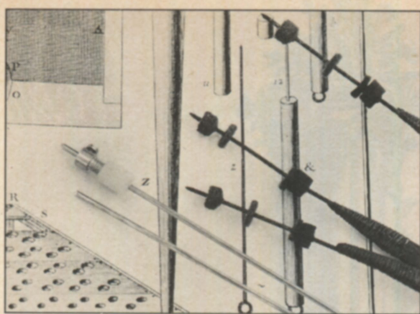


Left: Standing in front of a model of a tracker organ designed for Stanford University, Charles Fisk contemplates a full-size mock-up of a front pipe. Top: This ornate 18th-century French organ case, illustrated in an engraving, is typical of the period.

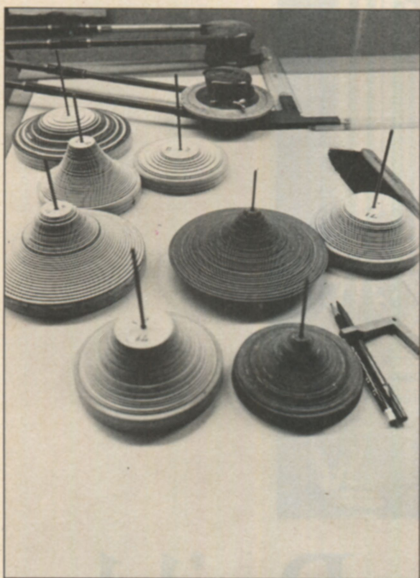
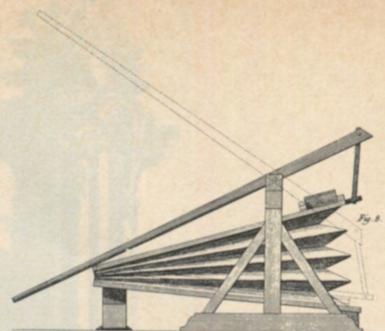
particle? The research was practically metaphysics. I finally realized that I didn't care about anything I couldn't see, feel, or hear."

Unlike particles, pipe organs are readily accessible to the senses. Considered the king of instruments, the organ is the largest and most powerful, the most wide-ranging in pitch and timbre, and the most technologically complex. The instrument usually contains two to three keyboards for the player's hands and one for the feet, which call up—through an array of dozens of stops—a vast assortment of sounds from the thousands upon thousands of pipes. Delicately wrought of wood and metal, the pipes vary in length from 32 feet to less than an inch. Their nine-octave range nearly spans the limits of the human ear.

*When it comes to the king of instruments, the old way is still the best.
by John Sedgwick. photography by Ann McQueen*



Left: Antique and new aluminum trackers rest on an 18th-century engraving. **Below left:** Metal disks (templates), stacked on spindles, are traced for pipe diameters when the wind chest is designed, as Fisk and his son Josiah are doing below. **At right:** Hand-pumped bellows like this one powered organs before electric blowers were introduced.



Fisk's instruments—with their geometric rows of burnished pipes encased in fine-grained, white-oak cabinets, concise keyboard action, and thorough musicality—are viewed as some of the finest specimens of this era. Duke University music professor Fenner Douglass calls Fisk “the Picasso of organ builders.”

Yet what is even more notable is that Fisk has deliberately flouted the convention prevailing since 1900 that organs be entirely controlled by electricity. He prefers the old-fashioned way, by which the pipes are worked solely by the action of the player's fingers and feet at the keyboards. The play at the keys is carried mechanically to the pipes by an elaborate network of trackers—thin, metal rods for longer distances, wooden slats for shorter—that ultimately draw open the pallets, or valves, at the feet of the pipes. This, in turn, allows the wind—nowadays generated by an electric fan—to jet up inside, stream across the upper lip of the pipe mouth, and sound the note.

A central advantage of the tracker system is that, while the electric—or, more properly, electropneumatic—organ involves a slight lag after the key is struck

before the note sounds, the tracker responds immediately. Further, because of the direct, mechanical link, organists can literally feel, no less than players at the harpsichord or piano, the note being produced as they press down on a key. Herbert and H. John Norman, in their book *The Organ Today*, call this “the sensation of breaking through a crisp crust.”

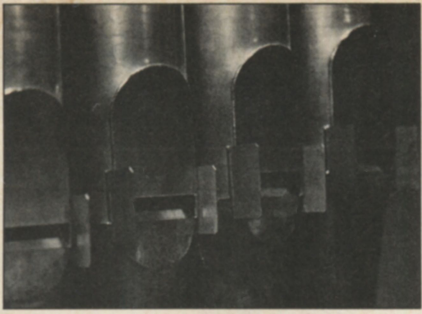
Because of the intimacy, authenticity, and durability of these trackers, they have now—in the 25 years since they were reintroduced—turned the tide against the louder, less responsive electropneumatic organs. Few of the electropneumatic's partisans, most of whom are older players who grew up with the electrics, will now even speak up for their instrument. One who does is Yale professor and concert organist Thomas Murray. “The electric action makes possible a tremendous range of color, a kaleidoscopic sweep of expressiveness and versatility,” he insists. But Frank Taylor, a recording organist who teaches at Wellesley College and the New England Conservatory, expresses the emerging majority view as he says, “Playing an electropneumatic after playing a Fisk

tracker makes me feel like I've had novocaine injected into my fingertips.”

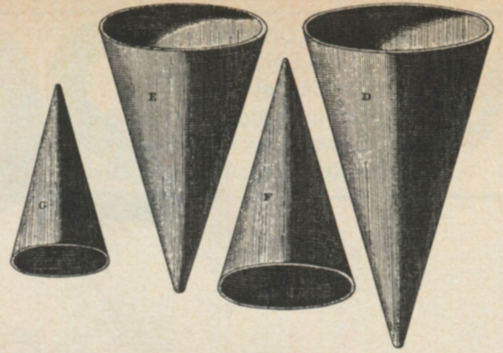
For Fisk himself, the key issue is direct control over the instrument. “If an organ were just a typewriter,” he says, “it wouldn't matter whether it was manual or electric. The same letters come out either way. But a musical instrument should be an extension of the player's physical self. Think how close violinists get to their instruments. You can't get that kind of connection electrically. Only trackers can give the player a direct, tactile sense of opening the valve.”

And Fisk keeps this human touch at the C. B. Fisk workshop as well. Working in a yellow metal-sided building in an industrial park in Gloucester, Massachusetts, his 22 artisans take up to a year to produce an organ—each one custom-built and virtually handmade from scratch. Because of the labor-intensive nature, the cost of a Fisk can reach half a million dollars for a large organ.

The metal for the organs comes from his own forge, and the peculiar tools of the organ trade are crafted there in the machine shop. Although Fisk recently began using a computerized tuner, few of



Left: A close-up of the mouths of a row of completed pipes. **Below left:** Using a portable drill press on the wind chest, Mark Clark drills holes that will lead to the ends of the pipes. **Below:** After pounding a lead sheet around a wooden form similar to those in front, David Gifford now prepares the seam of the pipe for soldering.



the other tools are very sophisticated. "They're just simple tools we use in complicated ways," he says. Despite the metal siding and the cement floor, the shop has an old-world atmosphere that stems from the lack of heavy machinery. It's just a space where the artisans can ply their ancient trade: designing the organ, drilling holes for the wind-chest, soldering the pipes and voicing them, building the cabinetry to contain them, devising a system of trackers to play them.

Charles Fisk was drawn to this antiquated system by the musician, theologian, and missionary-doctor Albert Schweitzer, who was the first to call attention to the electric organ's inadequacies and to press for a return to its classical forebear. As a youth in the forties, Fisk happened to use a Schweitzer recording of Bach's organ music to test some hi-fi speakers he was building. He was immediately hooked.

In retrospect, Fisk sees he was primed for the organ, for he played the otherwise unlikely combination of piano and trumpet and sang in the choir—with its rows of voices a close approximation, he believes, of the keyboard instrument.

"I'm a sucker for big sound," he goes on, "but that's not the main thing. For me, organ music has to move, to do something of rhythmic consequence. But on an electric, everything is at a distance. You just press the keys and get this great roar. What I want from an organ I can only get on a tracker."

Schweitzer's playing and writing convinced him of the need for the traditional instrument, yet his own evident skill in electronics took him in another direction entirely: to the Manhattan Project where he helped test detonators for the atomic bomb. The experience led him to study physics at Harvard and Stanford.

It was at Stanford in the early fifties that he had the revelation about his true calling as an organ builder. He left graduate school and apprenticed himself to a small California electric-organ firm and then to more-established builders in the East. Because no one was building trackers in the United States then and there were few books on the subject, Fisk learned about it from a few remaining 19th-century specimens that he was called upon to rebuild. Usually that meant ripping out the tracker action and

installing the new electrical machinery. Fisk scrutinized the old workmanship before dismantling it. "The mechanism was simple enough that I could figure it out just by looking at it," he says.

Today the once-forgotten system is preferred by the burgeoning "tracker backers"—most of whom play exclusively on Fisk instruments. Says Duke's Fenner Douglass, "The tracker is no fad. Rather, it's the electric that's turning out to be the fad." For the king of instruments, it appears, the old way is still the best way.

To Fisk, this is because the old way is the simplest way. He learned this lesson years ago at Los Alamos, where the tests he performed were always the simplest imaginable. He recalls, "My advisor told me, 'If you insist on elegant, complicated solutions, you'll never amount to anything.' What a wonderful lesson! All the solutions in my shop are as simple as we can make them. As scientists say: 'If it isn't simple, it isn't solved.'"

John Sedgwick, author of Night Vision, wrote about biometric security in the October/November 1982 issue.