

*Agreement with George  
Field and Elisha  
Andrews*

This Article of agreement made and entered into this  
tenth (10th) day of February 1870 by and between Thomas  
A. Edison of Elizabeth, New Jersey, party of the first  
part and Geo. B. Field of the city county and State of  
New York and Elisha W. Andrews of the town of Englewood  
Bergen County New Jersey parties of the second part,  
Witnesseth that the party of the first part agreed  
to invent and perfect a Printing Telegraph Instrument  
to be worked practically upon one wire, and to  
perform the same kind of work as the said  
Instrument known as "Calahan's ~~Invention~~  
now used by the Gold and Stock Telegraph  
Company of New York City.

Said instrument to be  
made, shall be constructed not to have more  
than thirty Six pieces, and Six screws in its  
working parts, the parts to be made of iron and  
steel, the size to be smaller than the Calahan  
Instrument, and the speed to be as great if  
not greater.

It shall be constructed to print  
two lines on the sheet of paper, and all the parts  
to be closely sewed, and every of the working  
and the instrument to be easily taken out or  
put in an office, to have a superior battery  
of four or five cells, and the instrument to be so  
made that the same amount of battery as that  
used by the Gold and Stock Telegraph  
all parts of said instrument to be made

[New York?.] February 10, 1870<sup>a</sup>

This Article of agreement made and entered into this tenth  
(10th) day of February 1870 by and between Thomas A Edi-  
son of Elizabeth, New Jersey, party of the first part, and Geo  
B Field<sup>1</sup> of the city county and State of New York and Elisha  
W. Andrews<sup>2</sup> of the town of Englewood Bergen County New  
Jersey parties of the second part.<sup>3</sup> Witnesseth that the party of  
the first part agrees to invent and perfect a Printing Telegraph  
Instrument to be worked practically upon one wire, and to  
perform the same kind of work as the stock Instrument known  
as "Calahans ~~Invention~~ Patent" As now used by the "Gold and  
Stock Telegraph Company" of New York City.<sup>4</sup>

Said instrument to be made, shall be constructed not to  
have more than thirty Six pieces and Six screws in its working  
parts, all parts to be made of iron and steel, the size to be  
smaller than the Calahan instrument and the speed to be as  
great if not greater.<sup>5</sup>

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It shall be constructed to print two lines on the strip of paper, and all the parts to be clearly seen, and easily approached and the instrument to be easily taken out or put in an office, to have a superior inking apparatus, and the instrument to be worked with the same amount of battery as those used by the Gold & Stock Tel Co” if not less. All parts of the said instruments to be made interchangeable, and the said invention to be clearly patentable in its combinations, and upon the completion of two instruments fully demonstrating the perfection of the instruments for the purpose designed, to the satisfaction of the parties of the second part, the said part of the first part, agrees to prepare or have prepared an application for Letters Patent from the United states Government, and convey by an assignment at the Patent office of the United states to the parties of the second part— Nine tenths ( $\frac{9}{10}$ ) of the interest of the party of first part in said invention<sup>6</sup> upon the following conditions to wit:

The parties of the second part shall well and truly pay to the said party of the first part the sum of Seven (7000) thousand dollars in full payment for the said nine tenths ( $\frac{9}{10}$ ) when the Patent for the instrument above described shall have been allowed. by the Patent office.<sup>7</sup> And the said party of the first part ~~of the first part~~ further agrees that he will lease to the said parties of the second part from the date of said Patent, the remaining one tenth interest in said invention for Seventeen years from the date of the patent for a sum not exceeding one dollar per annum. And the parties of the second part shall by a special agreement agree not to re = issue said patent during its validity or Seventeen years with out the consent of the party of the first part, and shall pay the bills for the construction of the two instruments above referred to not to exceed the sum of two hundred & fifty dollars.

This Contract is assignable, and the agreements are obligatory upon the heirs or assigns of the parties herewithunto.

In witness whereof the parties have hereunto set their hands & seals the day and year aforesaid

Thomas. A. Edison

Geo B. Field

Elisha W Andrews<sup>b</sup>

In presence of A M Kidder<sup>c</sup>

In addition to the above agreement .I. agree to include my services as C Electrician for one year from date of the application for Letters patent for the above named instrument,<sup>8</sup> for the consideration named in the above writing. I also agree to assign the above named parties any future improvement in

mechanical Printing Telegraph instruments which are applicable to directly to quoting the prices of Gold & Stocks or any [scheme?] of telegraphing where a number of instruments are worked in connection with one another<sup>d</sup> in the United States which I may devise

Thomas A. Edison

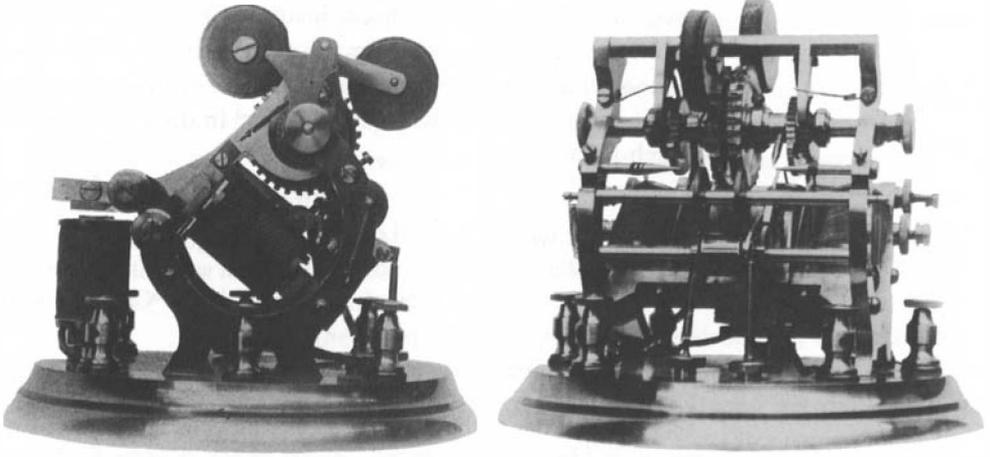
DS (copy), NjWoe, LS (*TAEM* 28:931). In George Field's hand. <sup>a</sup>Date taken from text, form altered. <sup>b</sup>Representation of wax seal drawn next to each signature. <sup>c</sup>After this, text is in Edison's hand. <sup>d</sup>Canceled words interlined above.

1. George Baker Field (n.d.) succeeded Elisha Andrews (see n. 2) as president of the Gold and Stock Telegraph Co. on 13 July 1868. He became a director of the company on 7 September 1869 and was replaced as president by Marshall Lefferts in March 1870. Reid 1879, 607–8; Hotchkiss 1969, 437.

2. Elisha Whittelsey Andrews (n.d.), a New York stockbroker and original stockholder in Gold and Stock, served as president of Gold and Stock from 19 September 1867 to 13 July 1868, when he was elected to the company's board of directors. In 1870 he traveled to England, seeking to introduce Gold and Stock instruments there (see Chapter 7 introduction). Two years later he helped found the American District Telegraph Co., which provided alarm and messenger services (see Doc. 226, n. 2). Incorporation agreement of Gold and Stock Telegraph Co., exhibit in *G&S v. Pearce*; Reid 1879, 607, 635; Hotchkiss 1969, 434; Calahan 1901c.

3. Although Gold and Stock is not mentioned in this document, Field and Andrews were acting in the company's interest. They assigned this agreement to the company in late spring. *G&S Minutes* 1867–70, 126–30.

4. Edward Calahan's printing telegraph (U.S. Pat. 76,993), which was introduced in brokers' offices in New York at the end of 1867, was the first to have two independent typewheels—one for letters and one for numbers. It was the mainstay of the Gold and Stock inventory of printers until Edison's universal stock printer superseded it in the early 1870s (*G&S Minutes* 1870–79, 86; William Orton to S. G. Lynch, 22 Oct. 1872, LBO). Pope and Edison, like many other inventors, sought unsuccessfully to find anticipations of Calahan's design with two independent wheels so that they could circumvent his patent. All litigation concerning infringements of Calahan's design was decided in favor of Gold and Stock. The principal advantage of two typewheels was the ready legibility of the printed tape, which was considered “extremely important” by Gold and Stock and its customers. Because each wheel had a blank space (or a dot), there was no need for an extra mechanism to block one while printing with the other (as Edison later provided for his cotton instrument and universal stock printer). In addition the lower inertia and smaller circumference of the two independent typewheels allowed greater speed than either a single, large typewheel—which was Edison's solution in this case—or two coupled typewheels. See Doc. 116 for sketches of two other attempted solutions. Affidavit of Frank L. Pope, 5 Nov. 1883, *G&S v. Pearce*; George Scott's testimony, 12 Feb. 1884, *ibid.*; *G&S v. Wiley*.



*The Edward Calahan stock printer used by the Gold and Stock Telegraph Co.: (left) side view; (right) front view.*

5. The number of parts in Calahan's and Edison's printers is uncertain. The "iron and steel" qualification was probably economic. Brass had the advantages of being nonmagnetic and nonrusting but was at the time about six times as expensive as iron and 33 percent more expensive than steel. See invoices, 70-006, DF (*TAEM* 12:156-98).

6. The patent for the printer designed under this contract was executed on 24 May 1870 and issued as U.S. Pat. 128,608 (G&S Minutes 1867-70, 126-30). The entire right to the patent was assigned to Gold and Stock on 30 October 1872 (Digest Pat. E-2:209). This machine was

*The instrument Edison designed to satisfy his 10 February 1870 contract with George Field and Elisha Andrews.*



never used. Edison made an amendment to the patent application that placed the application in interference with another machine, and the application was not allowed for a year. After finally amending the application to remove the interference, Edison neglected it for another year before paying for its issuance. U.S. Patent Office 1872, 80-81; Pat. App. 128,608. See also Doc. 124, n. 1.

7. This payment was fulfilled in different terms under the agreement of 26 May 1871 (Doc. 164).

8. Edison filed the patent application (see n. 6) on 27 May 1870. The next year on May 26 he signed an agreement making him the company's "Consulting Electrician and Mechanician" for five years (Doc. 164).