

(No Model.)

2 Sheets—Sheet 1.

C. T. DICKSON.

SYSTEM AND APPARATUS FOR COMMUNICATING TELEPHONICALLY.

No. 278,411.

Patented May 29, 1883.

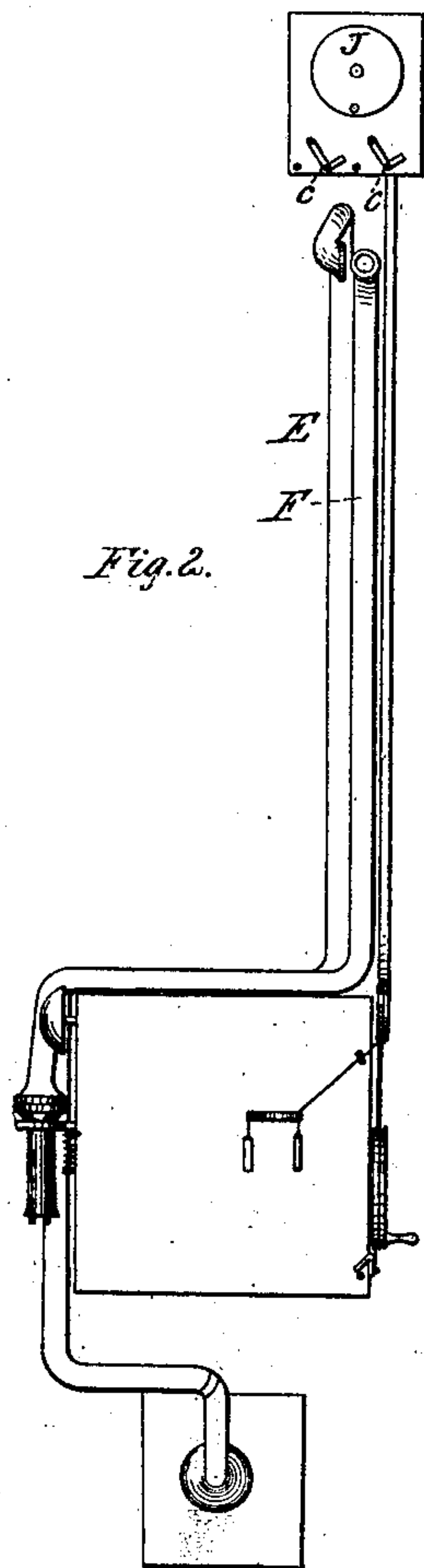


Fig. 2.

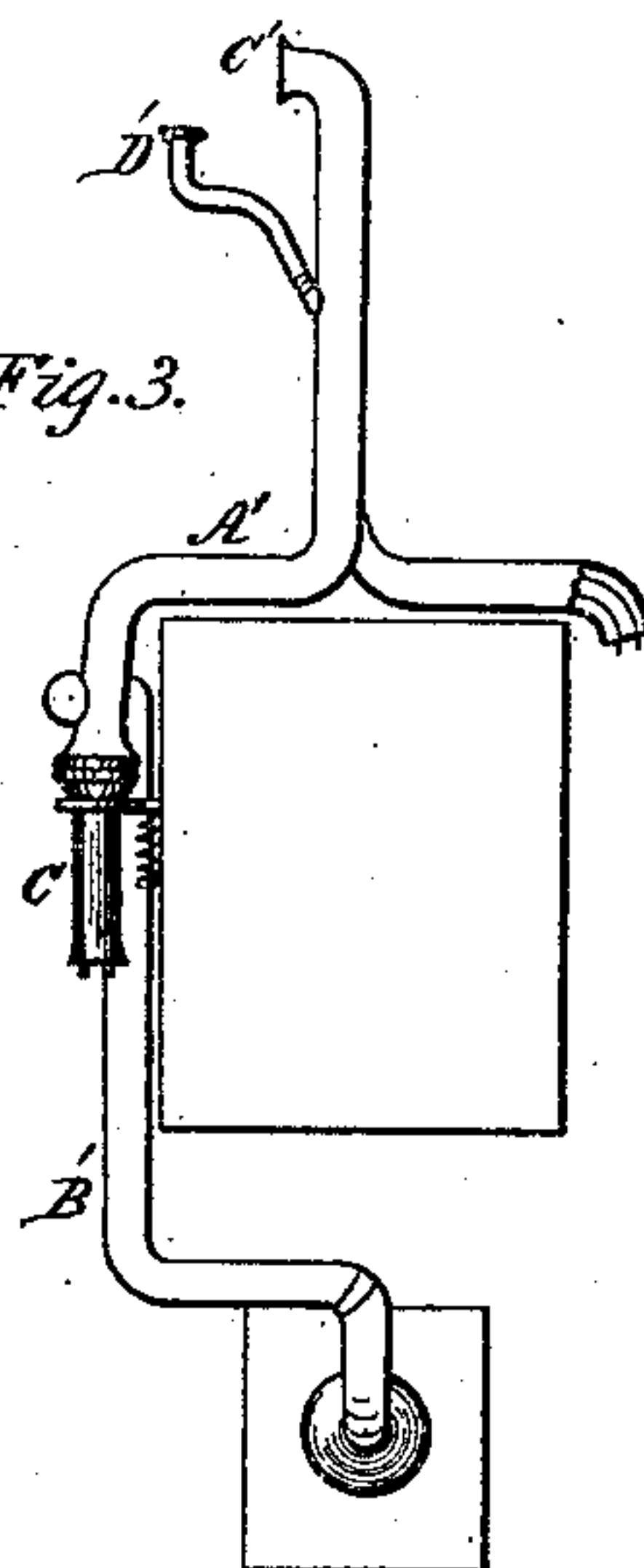


Fig. 3.



Fig. 5.

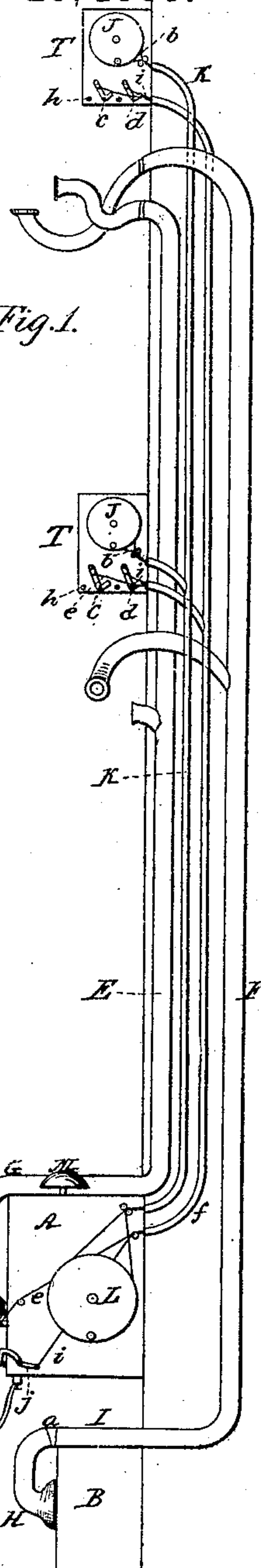


Fig. 1.

Witnesses:
W. C. Jindiveton
G. B. Lehigh

Inventor:
Charles T. Dickson
by *Stearns Beck*
his Attorneys

(No Model.)

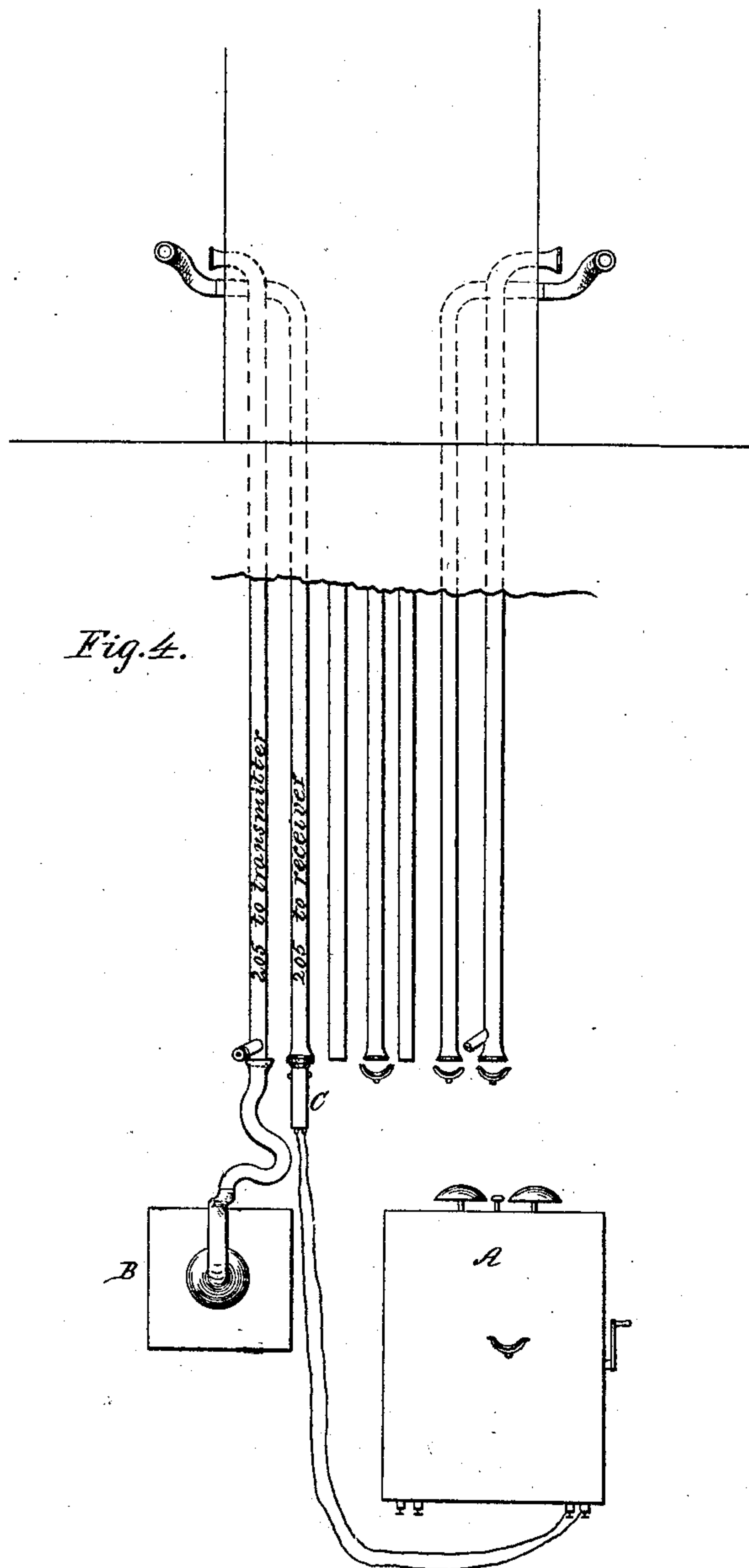
2 Sheets—Sheet 2.

C. T. DICKSON.

SYSTEM AND APPARATUS FOR COMMUNICATING TELEPHONICALLY.

No. 278,411.

Patented May 29, 1883.



Witnesses:
W. C. Jordinston
Wm. H. Church.

Inventor:
Charles T. Dickson
by *Stewart Peck*
his Attorneys.

UNITED STATES PATENT OFFICE.

CHARLES T. DICKSON, OF CINCINNATI, OHIO.

SYSTEM AND APPARATUS FOR COMMUNICATING TELEPHONICALLY.

SPECIFICATION forming part of Letters Patent No. 278,411, dated May 29, 1883.

Application filed January 17, 1883. (No model.)

To all whom it may concern:

Be it known that I, CHARLES T. DICKSON, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Systems and Apparatus for Communicating Telephonically, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification.

The object of my invention is to provide certain improvements in systems of and means for telephonic communication, whereby a single telephonic apparatus in a building may be connected with any number of remote rooms or places in the same or other buildings, so that the occupants of the remote room or place, by the aid of such single apparatus, may transmit and receive sounds or speech and give and receive signals from said remote rooms or places without the necessity of going to the room or place where such apparatus is located, and without interfering with the use of such apparatus by those in the room where it is located, except temporarily.

The novel features of my invention will first be described, and then pointed out particularly in the claims at the end of this specification.

In the accompanying drawings, Figure 1, Sheet 1, is a sectional view in elevation through a building, showing the application of my invention. Fig. 2, Sheet 1, is a front view of the same. Fig. 3, Sheet 1, is a front view of a telephone, showing a modification in the manner of connecting the receiver and transmitter to a single tube. Fig. 4, Sheet 2, represents a modification, showing the application of my invention to hotel use, or use in large buildings. Fig. 5, Sheet 1, represents the call-receiving devices.

The same letters indicate like parts in all the figures.

A represents the call-box of an ordinary Bell telephone, with its usual adjuncts, and B the usual Blake transmitter or microphone. C is the usual or any suitable receiver, hung in the customary way to the circuit-lever D.

We will suppose these parts, which constitute an ordinary telephone, to be situated in a room on the ground-floor of a building or residence, and against the wall, as is customary. With-

in the wall are embedded ordinary speaking-tubes, E and F, of any material, though tin is perhaps the best. These tubes extend to the first, second, third, or any number of stories in the building, and, by means of branches, from room to room on the different floors, or else by independent tubes to all the rooms, if desired. Again, if desired, these tubes may run up by the side of the wall, instead of being embedded, and may be covered by a boxing to hide them from view. The lower end of the tube E has connected to it an extension, G, which projects out over the top of the call-box A, and has its end, which terminates in a flaring mouth-piece, bent down directly over and close to the upturned mouth of the receiver or telephone C as it hangs upon the lever D. The lower end of the tube F has an extension, I, which is brought out of the wall and to one side of or over the transmitter B, as shown. To this extension is connected, by a swivel-joint at a, the flaring mouth-piece H, which can be turned to fit snugly over the diaphragm opening of the transmitter B, or be swung aside out of the way when it is desired to speak directly into the transmitter without employing the tube F and its connections.

I have so far shown the arrangement and connections of the speaking-tubes with the telephone, and we will suppose these tubes extending to various rooms on the different floors, with suitable mouth-pieces, with or without flexible connections, opening side by side or close together into said rooms. Upon the wall of each room into which the speaking-tubes extend, and suitably near to the mouth-pieces, is a call-box, T, of any desired shape or construction, provided with the following instrumentalities: a crank disk or wheel, J, with a circumferential groove, in and around which passes an endless cord, wire, or belt, b, which enters a small tube, K, extending down and opening near a drum or disk, L, keyed upon the call-bell crank-shaft, around which drum L the cord or wire b likewise passes, so that the turning of the disk J by means of its crank will turn the call-bell crank-shaft and ring the bell. The drum or disk L should have as many circumferential grooves as there are call-boxes in the various rooms, so as to receive the belts or cords of each; also attached to each call-box are two crank-levers

or equivalent devices, *c* and *d*, the former of which is connected by a cord or wire, *e*, passing down through a small tube, *f*, to the fork of the circuit-lever *D*, in which fork the telephone or receiver *C* is hung, so that by turning the lever *c* and resting it upon a stud or detent, *h*, the receiver *C* will be drawn up and its mouth sealed against the mouth of the speaking-tube *E*, and at the same time the circuit will be established by freeing the lever *D* from the weight of the receiver. The crank-lever *d* is connected by a cord or wire, *i*, likewise passing down through the tube *f*, or an independent tube, to a pivoted catch, *j*, so arranged that upon turning the crank *d* the circuit-button *K* will be pressed in to enable the call-bell to be rung. All of the cords or wires *e* and *i* from the various call-boxes may be connected together or run independently to the receiver-lifting fork and button-depressing lever, either in one and the same tube or in separate tubes, or in the speaking tube or tubes.

Now, from the above description it will be readily understood that the telephone can be used directly from the room in which it is situated by merely turning aside the connecting mouth-piece *H*, thereby uncovering the microphone, and by taking down the receiver *C* in the usual way. After use in this way the mouth-piece *H* is turned back over the microphone and the receiver is hung up. We will now suppose that the call-bell is rung from the exchange or another distant telephone. The extension of the pipe or tube *E* is situated close to one of the call-bells, *M*, the other being removed from the call-box *A*, so that the clapper lies between the call-bell and the tube, and when vibrated strikes both the bell and the tube, or a plate secured to said tube, or by means of a hood covering both call-bells and connected with tube, whereby the sound is distinctly conveyed to all of the apartments into which the tube *E* extends. A person in any of the rooms would thus hear the call, and by going to the call-box in said room could answer the ring by first operating the lever *d* to depress the button, and then turning the crank-disk *J*, as before described. By then operating the lever *c* the receiver *C* would be sealed to the tube *E*, and by placing the mouth-piece of the tube *E* to the ear and speaking into the mouth-piece of the tube *F* conversation could be carried on without the necessity of going into the room containing the telephone, and thus the convenience of the telephone is greatly enhanced and its capabilities enlarged. It will be further observed that to so connect a telephone to speaking-tubes no alteration or defacement of the telephone is necessitated, further than the removing of one of the call-bells, (and that is optional,) which could be restored when the telephone was removed, and the employment of the drum *L* upon the crank-shaft, which could be instantly removed under like circumstances, and which by a modification of my device is avoided.

In Fig. 2 I have shown a modification

which consists in hanging the receiver *C* to a spring-fork which is independent of the circuit-lever fork, and which holds the receiver constantly sealed to the mouth of the tube *E*. This construction would dispense with the necessity of having means for drawing the receiver up every time it was desired to connect it to the tube. In such case the circuit-lever would have to be held down by a catch or weight, and means would have to be employed for raising this lever every time it was desired to establish the circuit. The same means might be used that I have described for raising the receiver. It also consists in the employment of a single tube for both transmitting and receiving, with branches, one of which, *A'*, extends to the telephone or receiver, and the other, *B'*, to the transmitter or microphone.

The modification shown in Fig. 4, Sheet 2, is adapted more particularly for hotels, stores, and large buildings with a number of rooms. In this case the tubes from all the rooms, whether single or in pairs for each room, are brought out together in a bunch, or side by side, and in suitable proximity to the telephone. Each tube would be provided with a whistle or call in the usual or any suitable way, and the transmitter, as well as the receiver, of the telephone should be adjustable, so as to be capable of attachment to any of the single or double speaking-tubes, as shown; or, should the transmitter or microphone be stationary, a flexible coupling-tube could be used to connect any of the speaking-tubes to the microphone.

Where single tubes are used for both transmitting and receiving in either of the above-described systems the construction shown in Fig. 3 might be employed. Where *C'* is the speaking mouth-piece, and *D'* a flexible receiving-tube to be placed to the ear while speaking, the flexible receiver might be pressed with the finger and thumb to cut off the sound and prevent the person from speaking directly into his own ear, and as soon as the person was done speaking the tube *D'* might be released and the reply received therethrough.

With the system shown in Sheet 2 the operation would be as follows: We will suppose that a call is made for the occupant of a particular room—say No. 205. The person at the telephone would call up through the tube or tubes to room 205 and say that some one wanted to talk to him through the telephone. The person at the telephone would then connect the telephone, as before explained, with No. 205 speaking-tube, and conversation could then be carried on by the occupant of the room and the caller. For the occupant of a room to call an outsider, the operation would be merely reversed, as is clearly obvious.

Various modifications might be employed without departing from the nature and spirit of my invention, so that I do not purpose to be limited to the details described; but,

Having thus fully described my invention, I claim—

1. The combination of a telephone located in one room or place with a tube or tubes leading from a remote room or place to said telephone, and with means for connecting at will said tube or tubes to the telephone by the operator at the remote room or place, substantially as described.

2. The combination of the telephone located in one room or place, with a tube or tubes leading from a remote room or place to said telephone, with means for connecting at will said tube or tubes to the telephone by the operator at the remote room or place, and with means, substantially as described, for sending and receiving signals from and at said remote room or place.

3. The combination, with a telephonic apparatus for transmitting and receiving sounds or speech, and with apparatus for sending and receiving signals, all located in one room or place, of a tube or tubes leading from a remote room or place to said telephonic and signaling apparatus, means for connecting at will said tube or tubes to the telephonic apparatus by the operator at the remote room or place, and other means, substantially as described, for operating the signaling mechanism from said remote room or place, substantially as described.

4. The combination of a telephonic apparatus for transmitting and receiving speech, and a signaling apparatus, all located in one room or place, with a tube or series of tubes connecting two or more remote rooms or places with the telephonic apparatus, and with means, substantially as described, controlled by the operators at the several remote rooms or places, for operating the signaling apparatus, as set forth.

5. The combination of the telephonic transmitting and receiving apparatus, and a call-box having a disk or drum upon its shaft, all located at one room or place, with the tube or tubes connecting such telephonic apparatus with one or more remote rooms or places, and with a calling disk or drum at each of such remote rooms or places, connected by cords or wires with the disk or drum on the shaft of the first-mentioned call-box, substantially as described, and for the purpose specified.

6. The combination of the telephonic instrument in one room or place, having its receiving-telephone suspended on the arm beneath the mouth of a tube leading to one or more remote

rooms or places, and with connections leading from said remote rooms or places to the lever which supports the telephone, whereby a person at either of the remote rooms or places may raise the supporting-lever and seal the telephone to the mouth of the tube, substantially as described.

7. The combination, with the push-button of the signaling apparatus located at one room or place, of a lever for pressing upon said button, and cords or wires leading from the push-button-operating lever to operating-levers at one or more remote rooms or places, whereby signals may be sent from the single signaling-instrument by an operator at either of the remote rooms or places.

8. The combination, with the clapper or lever of the signal-receiving apparatus at the room or place where the telephonic apparatus is located, of the sound-receiving tube connected to the telephonic receiver and leading to one or more remote rooms or places, said clapper or bell-lever being arranged in proximity to said tube, so that its vibration will cause it to strike the tube and indicate the signal at the remote rooms or places, substantially as described.

9. The combination, substantially as described, at one room or place, of the telephone-transmitter, the telephone-receiver hung upon the switch-arm, the push-button and the lever for pressing it, the call-box having the drum upon its shaft, with tubes connecting remote rooms or places with the telephone receiver and transmitter, respectively, and the several cords or wires and connections for raising the switch-lever for operating the push-button lever, and for rotating the call-bell shaft from the remote rooms or places, substantially as described.

10. The combination of a telephone located in one room or place, with two or more independent tubes leading from one or more remote rooms or places to the room where the telephone is located, and with means whereby said telephone may be put in communication with any of said independent tubes in the room where the telephone is located, substantially as described.

CHARLES T. DICKSON.

Witnesses:

EDWARD W. RECTOR,
GUS A. MEYER.