

FIRE-ALARM BRANCH.

---

The woodwork and other fittings for the new office were completed, and the apparatus placed in position, early in the year, and wiring for the same was commenced on the 15th of March.

The extent of this work, which was done by the contractor, and the care required to be exercised in carrying it out, necessarily consumed considerable time, and it was not completed until the middle of May. More than 50,000 feet of wire were used in making the connections. The office is constructed for eighty circuits, which are divided into three systems: Fifty circuits are equipped with apparatus for receiving alarms from the boxes, twenty for striking them out on the bells and gongs, and ten for operating the box-gongs in department houses.

The battery-room is equipped with stands having sufficient capacity to hold fifty-six motor-generators, a power service-board so constructed that current for driving the motors may be taken from four independent sources, and a board which provides for a distribution of the generator currents in such a manner that any desired combination can be made of the eighty circuits at any time without interference with the operation of the system.

On the 20th of May the old plant at the City Hall, which had done effective service for more than thirty years, ended its official existence, and the new office was duly installed.

The transfer of the circuits was made in three hours from the time the first connection was made, careful preparations for making the changes having been made previously.

Notwithstanding the fact that the new plant was equipped with entirely new apparatus, the different construction and operation of which involved a complete change in the methods to be employed, no material interruption to the successful working of the system was experienced at the time of its installation, and the minor faults in construction which developed later being eliminated, it was soon placed on a perfect working basis, and so continued up to the present time.

The dynamo service, which has been referred to as an experiment, in previous reports, has demonstrated by results that a great improvement has been made in this respect, and

the advantages gained by substituting it for the old form of batteries have become more clearly apparent by its continued use.

A new switch-board, constructed for ninety circuits, supplied with three banks of connecting plugs and three sets of transmitters and telephones, has been leased from the New England Telephone Company. It is equipped with all the appliances used in modern exchange business, and by its use the telephone work of the department has been greatly facilitated.

The reconstruction of overhead circuits during the year has been done chiefly in Roxbury and West Roxbury.

In these districts three new bell circuits have been built, and box circuits 7, 8, 13, and 23 partially reconstructed.

Circuit No. 74, in West Roxbury, has been extended to the house of Engine No. 30, and a box-gong of the regular pattern placed in quarters and connected for service.

The wires running along the Parkway in Jamaica Plain have been replaced by an underground cable 2,977 feet in length, containing 17,862 feet of conductors.

Circuits running to Charlestown and Brighton, which were rebuilt in 1894, have been divided, and connected independently in the new office. By this division a new box-gong circuit was created, and the apparatus houses in Brighton connected therewith.

The box-gong service is now extended to the entire department.

All the boxes in Brighton and Charlestown are now connected into circuits by themselves, and the bells and gongs into new circuits, which are used exclusively for striking alarms.

A similar arrangement has been effected by new construction in South Boston, which completes the elimination of the bells and gongs from the box circuits throughout the entire system.

The alarm service has been extended by placing a bell, formerly used on the Phillips School-house, in a new tower which was constructed on the house of Engine No. 41 at Allston, and gongs into the office of Commissioner of Wires, house of District Chief Hussey, Austin & Gove's office, East Boston, and the pumping-station on Wayne street.

Sixteen new circuits have been created, and placed entirely underground. Three of these are connected with lamp-post boxes, and the others with telephones located therein and various department houses. One new overhead telephone circuit has been built, and the service extended by placing telephones in the residence of the Chief of Department,

house of Engine 25, Veterinary Surgeon, Hook and Ladder No. 7, head-room at City Hall, and basement terminal room at Bristol street, Headquarters Building.

Stands and telephones have also been placed on the various desks at headquarters.

The rebuilding of Chelsea bridge has occasioned much work for this branch during the year, as it has been necessary to make temporary changes in the arrangement of the wires from time to time as the work progressed. Wires and cables have been placed, and submarine cables taken up and relaid to meet the existing conditions, the final work being completed late in the season.

The poles formerly supporting the wires at this point have been abandoned, with the exception of some iron posts on the Boston end as far as the draw, and the circuits are now carried on these standards and along the timbers, under the bridge, through a 19-conductor cable 2,600 feet in length.

Submarine cables have been taken up at bridges on Federal, Congress, and Tenean streets and Mt. Washington avenue.

The cable on Federal street was removed on account of becoming defective, and the others because routes of circuits were changed in such a manner that their continued use at those localities was rendered unnecessary. The damaged cable at Federal street was replaced by one of these, and the other two were used at Chelsea bridge.

A new cable, 300 feet in length, has also been laid at Meridian-street bridge.

A new frame has been built to support the bell in the tower on the Noble School-house, on Princeton street, East Boston, and the usual routine work has been done, repairing circuits and making such changes in their locations as have been made necessary by conditions which have developed from time to time in various parts of the city. Six new boxes have been established and connected with the service during the year.

Ninety miles of No. 9 wire and 16,199 feet of Clark and Kerite wire, 1,881 feet 10-conductor, and 2,668 feet 19-conductor overhead cable have been used in completing the work herein referred to.

Two cables, with 10 and 19 conductors, respectively, have been run through the subway from headquarters to the apparatus repair-shop. Nine new roof structures have been built, 19 poles set, 39 structures removed, and 12 poles taken down since last report.

The total amount of old wire taken down during the year is 589,230 feet: of this amount 195,000 feet were removed

from the underground district for 1895, 204,700 feet from the 1894 district, and the remainder from other parts of the city.

Plans were made and cables purchased early in the year for completing the underground construction in the district prescribed for 1895. Before any part of this work had been done, however, a notice was received from the Commissioner of Wires that it would be necessary to make some changes in the original plans on account of conditions which were not considered at the time of the first arrangement. In consequence of this request the 61-conductor cable which was laid in 1894 was drawn out of the ducts in Tremont street, from Compton to LaGrange streets, through LaGrange and Beach streets to Harrison avenue, amounting to 3,659 feet.

The cable thus removed was laid in other places entirely outside of the 1895 district, and a cable containing 19 conductors was bought and run in its place from the starting-point on Tremont street to a terminal box in the house of Police-station No. 4, on LaGrange street. In order to conform to the new arrangements of the Wire Department it also became necessary to use smaller cables in some other portions of the proposed routes in the district; consequently a cable with 37 conductors was purchased and laid, leaving the 61 conductors to be placed outside the district in connection with the one which was drawn out as before mentioned.

The total amount of cable of all kinds laid during the year, including the 61 conductor taken up from Tremont street, is 27,849.5 feet.

These cables vary in their capacity, containing from 10 to 61 conductors, and have been placed as follows:

Kerite and okonite, 61 conductors, on Tremont, Berkeley, Beacon, Charles, Mt. Vernon, Joy, Myrtle, Derne, Bowdoin, Cambridge, and Court streets, Tremont row, Brattle, Exchange, State, and Congress streets, — 13,005 feet.

Kerite, 37 conductors, on Harrison avenue, Chauncy, Arch, Franklin, Pearl, Atlantic avenue, and High streets, — 5,503.5 feet.

Kerite, 19 conductors, on Tremont and LaGrange streets, — 3,408 feet.

Clark, 10 conductors, on Winter, Essex, Appleton, and Eliot streets, including short leads and side connections, — 2,954.8 feet.

Safety, 6 conductors, on Parkway, Jamaica Plain, — 2,977 feet.

They have been laid in ducts belonging to the New England Telephone Company, with the exception of 3,334 feet, which are placed in ducts constructed by this department.

Twenty-one boxes and 13 department houses have been connected with the underground service in the past year.

Nine of the boxes are located on streets, and the others are inside theatres, stores, and other buildings.

Underground telephone service has been extended to boxes 42, 56, 57, 61, 72, and 85, all of which are placed on lamp-posts in their respective locations.

The total length of cables now underground is 55,900 feet.

Total length of conductors, 2,313,984 feet.

They are laid in ducts, of which 43,520.8 feet belong to the Telephone Company and 7,890 feet to this department.

The fire-alarm ducts are contained in 4,015 feet of conduits, about one-half of which were built in the past year.

Notwithstanding that the changes in the original plans above noted occasioned a large amount of extra labor and an increased expense in doing the underground work, it was all completed within the time required by law, and all the overhead wires and abandoned structures have been taken down.

The benefit of this extra work will be fully experienced when the territory in which it was done shall be included in a district to be designated by the Commissioner of Wires at some future time.

The service has been uniformly successful during the year, no accidents to any portion of the cables having occurred of sufficient magnitude to materially interfere with their work.

Neither have the overhead wires in the outlying districts been seriously affected by storms at any time, and, everything being considered, it may be said that the system has made a good record for itself since the last report.

The force employed is as follows :

*Superintendent.*

BROWN S. FLANDERS.

*Assistant Superintendent.*

CYRUS A. GEORGE.

*Operators.*

CHARLES M. CHAPLIN,  
UZZIEL PUTNAM,  
JAMES L. CROWLEY,

JAMES L. GETHINS,  
RICHARD DONAHUE,  
JONA. M. MORRIS.

*Assistant Operators.*

JOHN B. JEFFERS,

JOHN FLAVELL.

*Care of Dynamos.*

JOHN GALWAY.

*Foreman of Construction.*

HIRAM W. CHERRINGTON.

*Repairers.*

G. J. H. GUTERMUTH,

E. M. ILLINGWORTH,

WM. H. BARKER,

JERRY HURLEY,

GRANVILLE S. MENDELL,

DANIEL F. McCARTY,

ISSACHAR WELLS,

PETER M. KENDRICK.

A constant watch is kept at the headquarters, Bristol street, night and day, by the operators. Each set of operators have assigned to them certain hours of duty, during which time they are responsible for the correct working of the apparatus in giving alarms, and all testing of the circuits and other details pertaining to the service. No operator is permitted to sleep during his watch, unless expressly relieved by some one else, and by consent of the Superintendent.

Each operator is accountable to the Superintendent for any mistakes that may occur at the office during his hours of duty.

An accurate account is kept of the time of giving each alarm, and of the station from which it originates, and all other necessary information.

There are 572 fire-alarm boxes now in service.

The following boxes are private property: 38 duplicate, 115, 149, 152, 227, 228, 244, 271, 279, 281, 283, 299, 422, 442, 443, 445, 446, 447, 448, 449, 511, 533, 617, 623, 624, 626, 629, 698, 711, 714, 715, 716, 718, 722, 723, 724, 725, 726, 727, 728, 729, 731, 732, 733, 735, 737, 738, 739, 741, 742, 744, 745, 746, 766, 778, 779, 789, 791, 792, 794, 795, 796, 797, 799, 816, 838, 842, 919, 927, 974.

## STOCK AND FIXTURES.

Magnetic fire-alarm apparatus, the estimated value of which is \$171,000. Working lines of wire, about 1,000 miles; signal-boxes in use, 572; striking-machines, 24; gongs, 125; box-gongs, 75; tappers, 3; local registers in department houses, 50; two clocks; two four-dial repeating-machines for striking signals; one old three-dial ditto; relays, 70; 1 fifty-pen register; 1 ten-pen ditto; chime-bells, 10; other bells, 21; telegraph keys, 70; main circuit annun-

ciators, 70; local ditto, 70; fuse-boards, 2; telephones in use, 103; 2 switch-boards; 83 galvanometers; 1 voltmeter; 1 mil-ammeter; 1 rheostat and bridge; 1 indicator; 84 battery rheostats; 27 motor-generators; 2 generator stands; 1 power-service board; 1 distributing board; 1 fire apparatus covering map; 2 portable rheotropes; 1 typewriter; 1 copying-press; 1 safe; 1 chronometer; 1 set telegraphic apparatus in Superintendent's house; 5 sets telegraphic apparatus in assistants' houses; brackets, wire, insulators, etc., office furniture, bedsteads, bedding, and sundry small articles.

#### ALARM BELLS.

The Fire-alarm Telegraph is connected with the following bells:

- Adams School-house, Sumner street, East Boston, steel, 2,995 lbs., owned by city.
- Bunker Hill School-house, Charlestown, 2,009 lbs., owned by city.
- Chapman School-house, Eutaw street, East Boston, steel, 3,109½ lbs., owned by city.
- City Hall, Charlestown, composition, 3,600 lbs., owned by city.
- Engine-house No. 16, Temple street, Dorchester, composition, 4,149 lbs., owned by city.
- Engine-house No. 17, Meeting-House Hill, Dorchester, composition, 4,000 lbs., owned by city.
- Engine-house No. 18, Harvard street, Dorchester, composition, 3,184 lbs., owned by city.
- Engine-house No. 19, Mattapan, Dorchester, composition, 2,927 lbs., owned by city.
- Engine-house No. 20, Walnut street, Dorchester, composition, 3,061 lbs., owned by city.
- Engine-house No. 21, Boston street, Dorchester, composition, 3,026 lbs., owned by city.
- Engine-house No. 28, West Roxbury, composition, 4,000 lbs., owned by city.
- Engine-house No. 29, Brighton, steel, 1,535 lbs., owned by city.
- Engine-house No. 30, West Roxbury, 300 lbs., owned by city.
- Engine-house No. 34, Brighton, composition, 1,501 lbs., owned by city.
- Engine-house No. 40, Orleans street, East Boston, composition, 817 lbs., owned by city.

Engine-house No. 41, Allston, composition, 900 lbs., owned by city.

Engine-house No. 45, Roslindale, composition, 1,059 lbs., owned by city.

Faneuil Hall, steel, 5,816 lbs., owned by city.

Lewis School-house, Dale street, Boston Highlands, composition, 3,104 lbs., owned by city.

Maverick-street Church, East Boston, composition, 2,000 lbs.

Princeton-street School-house, East Boston, composition, 2,470 lbs., owned by city.

Saratoga-street M. E. Church, East Boston, steel, 1,968 lbs., owned by city.

Warren School-house, Charlestown, composition, 3,000 lbs., owned by city.

Winthrop School-house, Charlestown, composition, 3,000 lbs., owned by city.

Bells owned by the city, which have been disconnected from service, are located as follows :

Fire-alarm Repair-shop, bell formerly used on house of Chemical Engine 5 ; one composition, 400 lbs., formerly used on house of Chemical Engine No. 4 ; one composition, 400 lbs., formerly used on house of Chemical Engine No. 6 ; and two small bells from other locations.

Engine-house No. 1, Dorchester street, South Boston, composition, 800 pounds.

Engine-house No. 2, composition, 800 lbs.

George-street School-house, Boston Highlands, composition, 4,160 lbs.

Hook-and-Ladder House, No. 4, Dudley street, Boston Highlands, composition, 3,509 lbs.

Lawrence School-house, B street, South Boston, steel, 3,400 lbs.

Lincoln School-house, Broadway, South Boston, composition, 3,110 lbs.

Quincy School-house, Tyler street, composition, 2,941 lbs.

Smith-street School-house, Highlands, composition, 4,083 lbs.

Ticknor School-house, Dorchester street, Washington Village, steel, 2,995 lbs.

Trinity Church, Trenton street, East Boston, composition, 1,760 lbs. Formerly used on Castle-street Church.

Van Nostrand's Brewery, Charlestown, composition, 818 lbs. Formerly used on Boylston School-house.

Wells School-house, Blossom street, composition, 1,675 lbs.



## PUBLIC CLOCKS.

The following public clocks, forty in number, are taken care of by the Fire Department :

*City Proper.*

Arlington-street Church.  
Charles-street Church.  
Christ Church, Salem street, owned by city.  
Commercial Wharf.  
Lynde-street Church.  
Odd Fellows Hall, Tremont street, owned by city.  
Old South Church, owned by city.  
Old State-House, owned by city.  
Park-street Church.  
Suffolk County Jail, owned by city.  
St. Stephen's Church, Clark street, owned by city.  
Shawmut-avenue Church.  
Tremont M. E. Church, owned by city.  
Young Men's Christian Union, owned by city.

*South Boston.*

Bigelow School-house, owned by city.  
Gaston School-house, owned by city.  
Lincoln School-house, owned by city.  
Phillips Church, owned by city.  
St. Augustine Church, Dorchester street, owned by city.  
Ticknor School-house, Washington Village, owned by city.

*East Boston.*

Central Square Church.  
London-street Church, owned by city.  
Lyceum Hall, owned by city.  
Trinity Church, owned by city.  
Orient Heights Church, owned by city.

*Boston Highlands.*

Winthrop-street Church, owned by city.  
West End stables, Tremont street, owned by city.  
Roxbury High School, owned by city.

*Dorchester.*

Baker Memorial (Upham's Corner), owned by city.  
Neponset Church.

Tileston School (Mattapan), owned by city.  
Unitarian Church (Milton Lower Mills).

*Charlestown.*

Bunker Hill Church.  
City Hall, owned by city.  
Harvard Hill Church.  
High School-house, owned by city.  
Unitarian Church.

*West Roxbury.*

Dr. Strong's Church.  
Unitarian Church.

*Brighton.*

Bennett School-house, owned by city.

After a year's experience here, I can heartily commend the officers and men of the department for uniform energy and intelligence in their work, and earnest endeavor to understand and carry out the requirements of the Commission.

Your obedient servant,

HENRY S. RUSSELL,  
*Commissioner.*