

(No Model.)

3 Sheets—Sheet 1.

C. L. SHOLES, Dec'd.

G. B. SHOLES, Executor.

TYPE WRITING MACHINE.

No. 583,156.

Patented May 25, 1897.

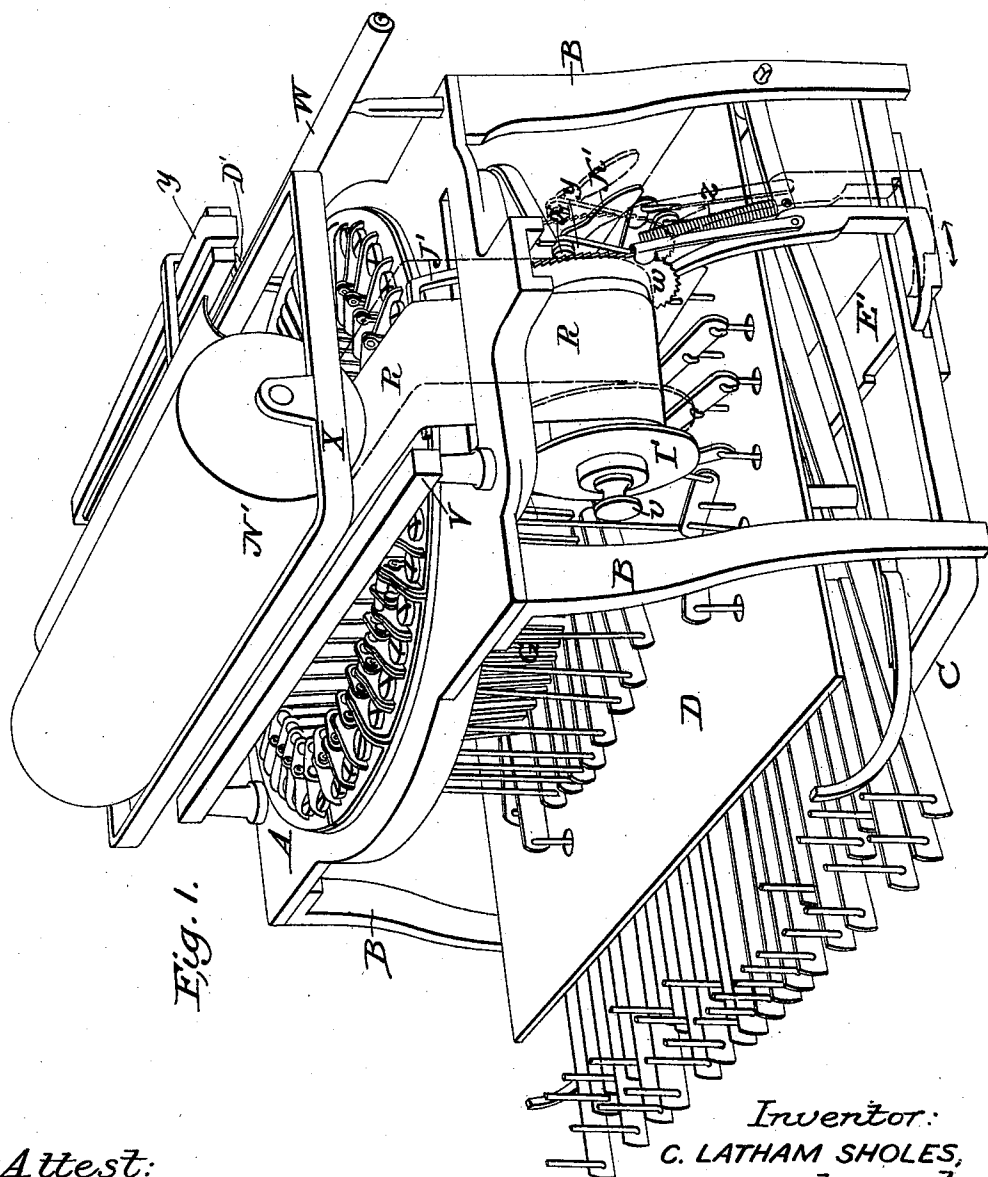


Fig. 1.

Attest:

James F. Duhamel

Robt Miller

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GEORGE B. SHOLES,
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by *Rodger Bone*,
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(No Model.)

3 Sheets—Sheet 2.

C. L. SHOLES, Dec'd.

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TYPE WRITING MACHINE.

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Fig. 2.

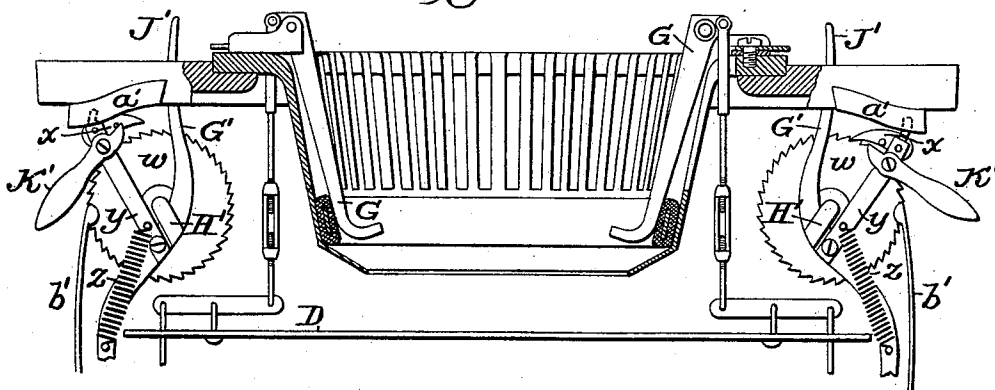
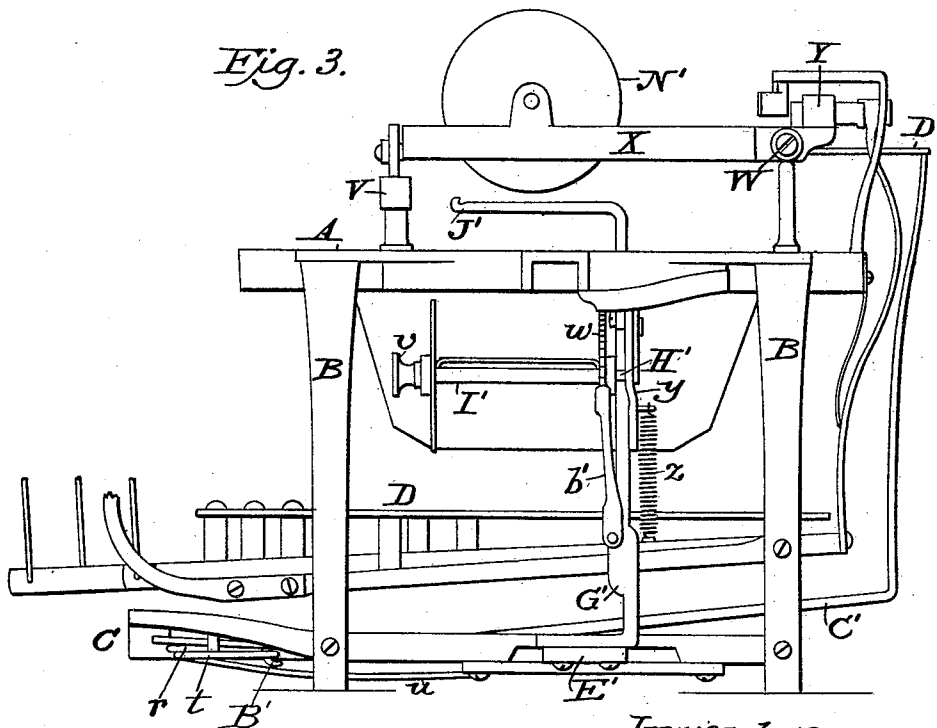


Fig. 3.



Attest:

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(No Model.)

3 Sheets—Sheet 3.

C. L. SHOLES, Dec'd.

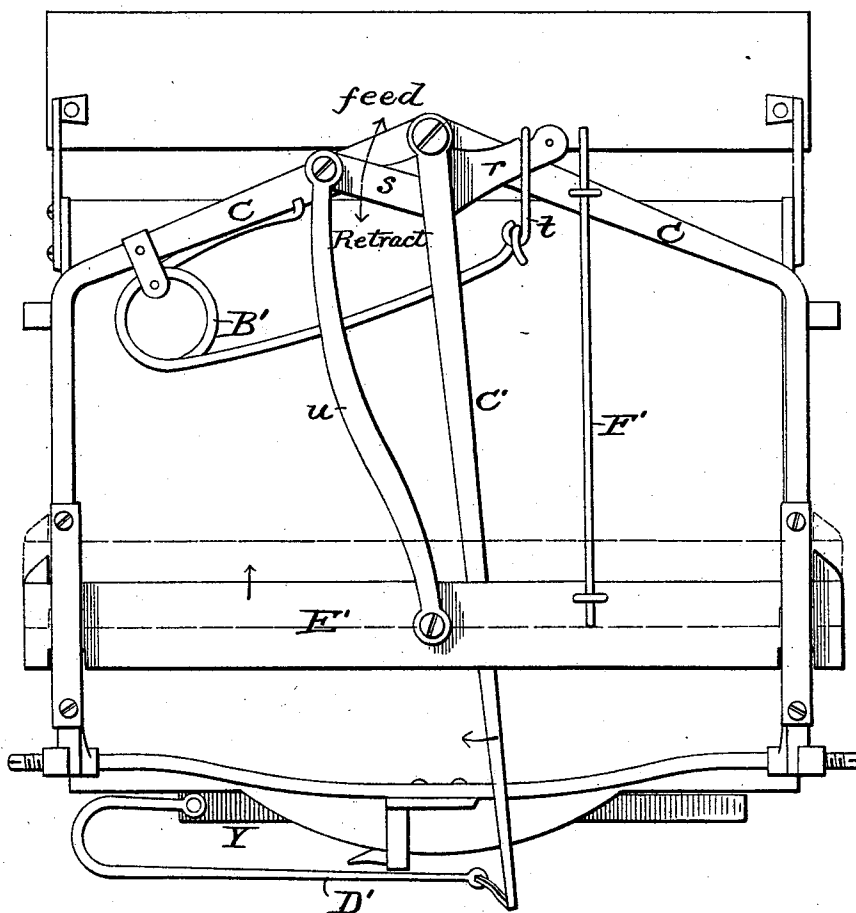
G. B. SHOLES, Executor.

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Fig. 4.



Attest;

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UNITED STATES PATENT OFFICE.

GEORGE B. SHOLES, OF MILWAUKEE, WISCONSIN, EXECUTOR OF CHRISTOPHER LATHAM SHOLES, DECEASED, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE WYCKOFF, SEAMANS & BENEDICT, OF NEW YORK.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 583,156, dated May 25, 1897.

Original application filed February 18, 1890, Serial No. 340,920. Divided and this application filed September 2, 1892. Serial No. 444,925. (No model.)

To all whom it may concern:

Be it known that CHRISTOPHER LATHAM SHOLES, now deceased, but during his lifetime a citizen of the United States, and a resident of Milwaukee, in the county of Milwaukee, State of Wisconsin, did invent certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

This invention relates to type-writing machines, and more particularly to the inking-ribbon carrier, as hereinafter pointed out.

In a patent dated April 14, 1896, and numbered 558,428, Christopher Latham Sholes has broadly claimed an inking-ribbon and means for moving the same in two directions, one crosswise to the other, to utilize substantially the entire surface of the ribbon. In the particular embodiment of his invention therein illustrated the movement of the ribbon in one direction takes place with or is effected by the paper-carriage, and specific claims are also made in said patent directed to or based upon that particular form or embodiment.

The present embodiment of his invention contemplates a ribbon supporting and shifting mechanism distinct from the paper-carriage or mounted in the frame of the machine and not bodily movable with the carriage, but capable of automatically moving the ribbon transversely to the line of printing during the travel of the carriage, and also capable of automatically moving it longitudinally. So far as advised this is the earliest instance of an automatic ribbon-moving mechanism of the character set forth, and hence it is intended herein to claim it broadly.

In the accompanying drawings, Figure 1 is a perspective view of a type-writing machine embodying the invention; Fig. 2, a vertical sectional view illustrating portions of the mechanism; Fig. 3, a side or end elevation of the machine, and Fig. 4 a bottom plan view.

The present invention is confined to the matters above indicated, and for this reason only so much of a type-writing machine will be described as is necessary to a full and clear comprehension of the ribbon supporting, feeding-and shifting devices.

The frame of the machine may be of any suitable construction, but is here represented as consisting of a top plate or table A, sustained by four legs or uprights B, a bar C, extending across the front and ends of the machine, as shown in Figs. 1 and 4, and a platform D below the top or table A.

V and W indicate rails or ways to support and guide a frame or carriage X, in which is carried a roll or platen N', and which carriage is here represented as provided with a bar Y at its rear side. The construction of the carriage is, however, immaterial to the present matter.

Type-bars G are arranged to strike at a common point and to print upon the paper carried by the roll or platen N' as usual.

C' indicates a bar or sweep, one end of which is pivotally attached to the bar C of the frame and the other end of which extends upward at the rear side of the machine and is connected by a link D' with the bar Y or other part of the carriage. This bar C' is formed with two lateral branches r and s near its pivot end, the former provided with a notch in which is seated one end of a link t, by which the arm r and the free end of spring B' are connected.

From the end of arm s a bar or link u extends to and is pivotally connected with a flat bar E', the two ends of which project through slots or openings in the side portions of bar C of the main frame, as shown in Figs. 1, 2, and 4.

As will be readily understood upon reference to Fig. 4, the spring B' tends to swing the bar or sweep C' about its pivot or center of motion, and as this action takes place during travel of the carriage from right to left the outer end of arm s will swing toward the front of the machine, and as the bar C' is returned to its starting-point by the recession of the carriage the arm s will move backward or away from the front of the machine. In thus moving back and forth the arm s will, through link u, impart a forward-and-backward movement to the bar E', the two ends of which are caused by a guide-rod F', Fig. 4, to move alike.

Rising from each end of the bar E' is an upright or standard G', (well shown in Figs. 1, 2, and 3,) each of which carries a horizontal stem or spindle H' below the table A to receive a ribbon-spool I', and each of which has above said table a lateral arm J', which serves as a ribbon support and guide to raise the inking-ribbon R above the type-bars and to hold it in proper relation to the platen-roll.

A nut r, screwed upon the end of each stem or spindle H', prevents the spool from working off.

The ribbon spools and guides being carried by and moving with the bar E', it follows that as the bar is moved back and forth the ribbon will be moved transversely to its length across the printing-point, and that as a consequence the entire width of the ribbon will be utilized instead of merely a narrow line thereof, as is usually the case.

To cause the longitudinal travel of the ribbon, the spools I' are both made with a ratchet wheel or disk w at one end, with which engages a dog or pawl x, carried by a swinging arm or lever y, pivoted one to each upright or standard G', as shown in Fig. 2. A spring z serves to normally draw and hold back each of the arms or levers y or to return each after a forward movement. A throw-out lever K' is pivoted to each standard or upright G' and engages beneath a projection on the dog or pawl x, serving to lift and hold the same out of engagement with its ratchet wheel or disk when desired, only one pawl and disk being in engagement at any one time.

The upper ends of the levers y bear against oblique guides or ways a', whereby as the bar E', during the recession of the carriage, moves toward the rear of the machine the levers y are thrown inward, feeding the ribbon longitudinally a suitable distance, the springs z returning them to their first positions as the bar E' again moves forward.

Each ratchet-wheel w is prevented by a click-spring or detent b' from being turned backward by the pawl or dog x on its backward movement. This detent must be thrown out of engagement with its ratchet-wheel whenever the pawl is, so as to permit backward rotation and allow the ribbon to be drawn off and wound upon the spool being actuated, or else the ribbon-spools must be transposed when the direction of travel is to be reversed. It is preferred to disengage the detent from the ratchet-wheel, as handling of the ribbon is thereby obviated.

The present application is a division of application Serial No. 340,920, filed in the name of Christopher Latham Sholes, on the 18th day of February, 1890, upon which Letters Patent numbered 559,755 were issued May 5, 1896, and any matters herein illustrated or referred to, but not distinctly claimed, have been reserved to the parent application.

Having thus described the invention, what is claimed is—

1. In a type-writing machine, the combina-

tion with an inking-ribbon, of mechanical devices for automatically moving it lengthwise step by step from one spool to the other, and mechanism for automatically moving it widthwise during the travel of the carriage.

2. In a type-writing machine, the combination with a printing mechanism, of an inking-ribbon, winding-reels on which the ribbon is carried, and an intermittently-operating shifter by which the reels are shifted laterally.

3. In a type-writing machine, the combination of an inking-ribbon, a laterally-movable ribbon-spool provided with ratchet-teeth; an inclined way; a lever; and a driving-pawl.

4. In a type-writing machine, the combination of a carriage adapted to travel back and forth transversely of the machine; an inking-ribbon; and automatic means connecting the carriage and ribbon; whereby the ribbon is moved laterally or at right angles to the path of the carriage as the latter travels back and forth across the machine.

5. In a type-writing machine, the combination with the carriage, inking-ribbon, and ribbon-spools of a type-writing machine, of the spool-shafts connected together, and mechanical means for reciprocating said shafts during the back-and-forth movements of the carriage.

6. In a type-writing machine, the combination of an inking-ribbon; a reciprocating ribbon-spool carrier for automatically moving said ribbon widthwise during the movements of the carriage; and a pawl-and-ratchet mechanism for automatically moving said ribbon longitudinally.

7. In a type-writing machine, the combination with an inking-ribbon, of mechanical devices for automatically moving it lengthwise step by step from one spool to the other, and mechanism mounted in the frame, for automatically moving it widthwise during the travel of the carriage.

8. In a type-writing machine, the combination with a printing mechanism, of an inking-ribbon; winding-reels on which the ribbon is carried; and an intermittently-operating shifter, mounted in the frame, by which the reels are shifted laterally.

9. In a type-writing machine, the combination of a carriage adapted to travel back and forth transversely across the machine; means for moving said carriage; an inking-ribbon; and means connecting the carriage-moving devices and the ribbon; whereby the ribbon is automatically moved laterally or at right angles to the path of the carriage as the latter travels back and forth across the machine.

10. In a type-writing machine, the combination with the carriage, of an inking-ribbon; ribbon-spools; a spool support or carrier distinct from the carriage and serving to connect the spools together; and mechanical means for reciprocating said spools during the back-and-forth movements of the carriage.

11. In a type-writing machine, the combi-

nation of an inking-ribbon; a pair of ribbon-spools; and an automatically-reciprocated ribbon-spool carrier, for moving said ribbon widthwise during the movements of the carriage, substantially as described.

12. In a type-writing machine, the combination of an inking-ribbon; a pair of ribbon-spools; an automatically-reciprocated ribbon-spool carrier for moving said ribbon widthwise during the movements of the carriage; and mechanism for automatically moving said ribbon longitudinally, substantially as set forth.

13. In a type-writing machine, the combination of a traveling carriage; an arm or sweep for moving said carriage; and an ink-ribbon frame or carrier connected with said sweep, substantially as described and shown, whereby the ink-ribbon carrier is moved transversely to the line of travel of the carriage.

14. In a type-writing machine, the combination of a traveling carriage; means for moving said carriage; and an ink-ribbon frame or carrier connected with said carriage-moving means; whereby the ink-ribbon carrier is moved transversely to the line of travel of the carriage.

15. In a type-writing machine, the combination of an inking-ribbon carrier, and means for automatically moving the same transversely to the length of the ribbon as the printing progresses, and thereby causing different portions of the width of the ribbon to be utilized.

16. In a type-writing machine, the combination of an inking-ribbon carrier mounted in the frame; and means for automatically moving the same transversely to the length of the ribbon as the printing progresses, and thereby causing the ribbon to be used widthwise.

17. In combination with a traveling carriage, as X; a spring-actuated sweep or bar C' connected with and serving to propel the carriage, and provided with an arm s; bar E', carrying the inking-ribbon spools and their supports; and link u, connecting the arm s and the bar E', substantially as and for the purpose set forth.

18. In combination with carriage X; sweep C' provided with arms r and s; spring B'; link t, connecting arm r with spring B'; bar E', carrying the inking-ribbon spools; and link u, connecting the arm s and bar E'.

19. In a type-writing machine, the combination of a laterally-movable ribbon-spool carrier; spools mounted upon said carrier; ratchet mechanism for positively rotating said spools one at a time; and inclines upon the main frame of the machine for moving the ratchet-actuating mechanism.

20. In a type-writing machine, the combination of a laterally-shiftable ribbon-spool carrier; ribbon-spools carried thereby; swinging arms provided with dogs to actuate the

spools; inclines formed upon the main frame of the machine and serving to throw forward the dog-carrying arms; and throw-out levers, one for each dog; whereby either dog may be thrown out of operation at will.

21. In combination with a main frame having inclines a'; a shiftable ribbon-spool carrier; a ribbon-spool mounted thereon and provided with a ratchet-wheel; swinging arm or lever y provided with pawl x and arranged to travel upon incline a'; and a spring z connected with and serving to retract arm y.

22. In a type-writing machine, the combination of a series of type-bars arranged to strike at a common point, and a shiftable ribbon-spool carrier provided with arms above the striking plane of the type-bars, to support and guide the ribbon.

23. In a type-writing machine, the combination of a paper-carriage; an inking-ribbon; a support for the ribbon distinct from the carriage; connections substantially as described, for moving the ribbon laterally; and means, substantially as described, for moving it longitudinally.

24. In a type-writing machine, the combination with a carriage, an inking-ribbon, and ribbon-spools; of spool-shafts connected together; and mechanical means substantially as described for reciprocating said shafts during the back-and-forth movements of the carriage, substantially as and for the purpose set forth.

25. In a type-writing machine, the combination with a carriage, an inking-ribbon, and ribbon-spools; of the connected spool-shafts; mechanical means substantially as described for automatically reciprocating them; and means for automatically moving the inking-ribbon longitudinally, substantially as and for the purposes set forth.

26. In a type-writing machine, the combination with an inking-ribbon, of mechanical devices for automatically moving it lengthwise step by step from one spool to the other, and mechanism distinct from the paper-carriage for automatically moving it widthwise progressively during the travel of the carriage.

27. In a type-writing machine, an inking-ribbon arranged to move automatically lengthwise step by step from one spool to the other, and mechanism distinct from the carriage, to automatically move the ribbon widthwise step by step during the travel of the carriage.

28. In a type-writing machine, the combination of an inking-ribbon, a driver for automatically moving it lengthwise, and a reciprocatory driver for automatically moving it widthwise during the travel of the carriage.

29. In a type-writing machine, the combination of an inking-ribbon, and feed mechanism for automatically moving it lengthwise and widthwise; the arrangement being such that the ribbon is automatically moved step

by step widthwise during the travel of the carriage from right to left, and automatically moved widthwise in the opposite direction a distance substantially equal to its width, and
5 also moved longitudinally during the return of the carriage from left to right.

30. In a type-writing machine, the combination of an inking-ribbon, a pair of ribbon-spools, a reciprocatory ribbon-spool carrier
10 mounted in the frame, for automatically moving said ribbon widthwise during the movements of the carriage, and a pawl-and-ratchet mechanism for automatically moving said ribbon longitudinally.

31. In a type-writing machine, the paper-
15 holding roll, the actuating-keys, and automatic mechanism substantially as described

for shifting the inking-ribbon sidewise with reference to the paper-roll.

32. In a type-writer, the combination with 20 the paper-holding and type-operating mechanism, of an inking-ribbon, spools sustaining said ribbon, and an automatic shifter driven by the moving parts, operating on the ribbon-
25 spools to shift the same laterally and longitudinally.

In witness whereof I hereunto set my hand in the presence of two witnesses.

GEORGE B. SHOLES,
Executor of the estate of Christopher Latham
Sholes, deceased.

Witnesses:

THOMAS A. WOODHALL,
JOHN T. BOWE.