

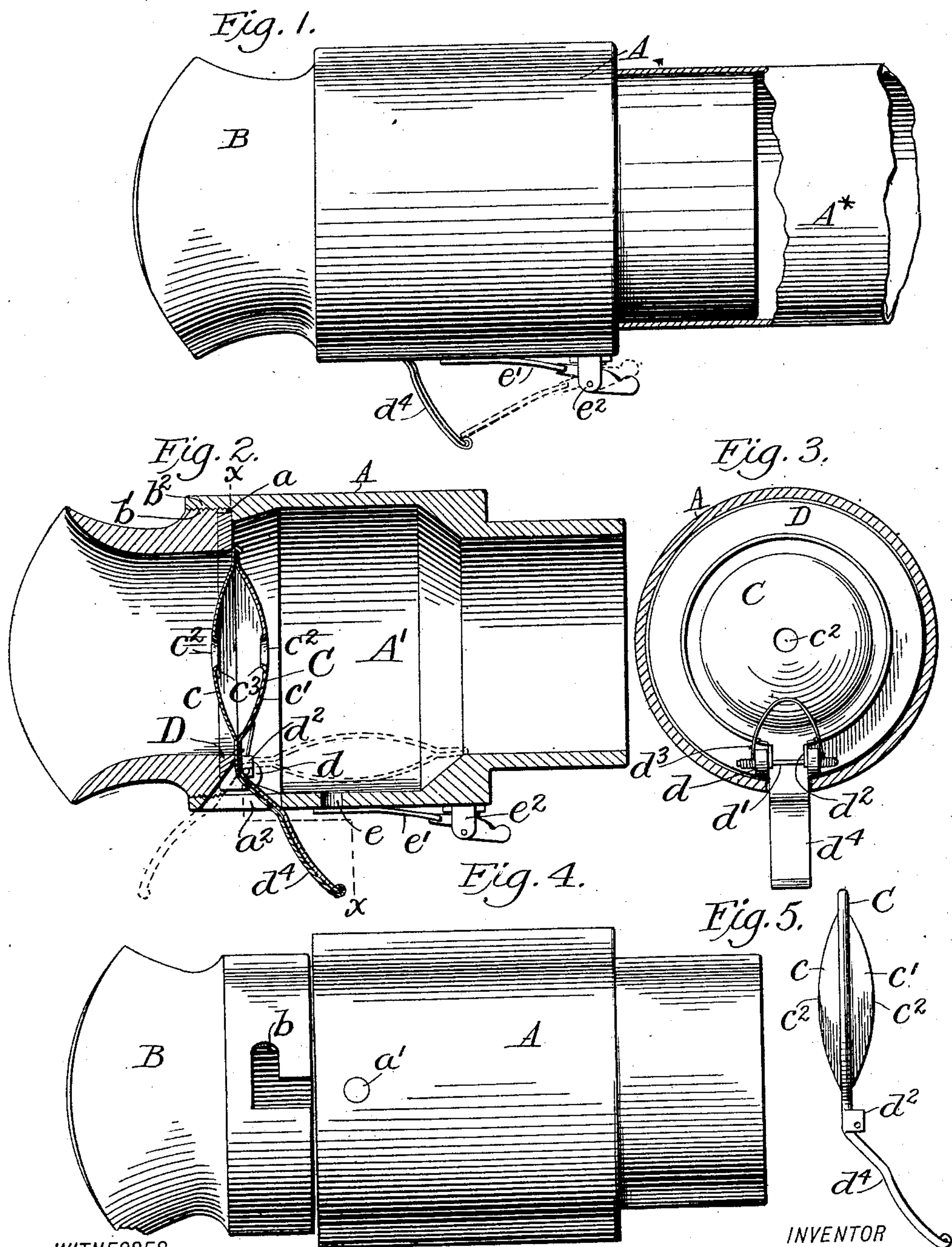
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Patented Jan. 23, 1900.

T. L. DENNIS.
SPEAKING TUBE.

(Application filed Oct. 23, 1899.)

(No Model.)



WITNESSES

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SPEAKING-TUBE.

SPECIFICATION forming part of Letters Patent No. 641,848, dated January 23, 1900.

Application filed October 23, 1899. Serial No. 734,433. (No model.)

To all whom it may concern:

Be it known that I, THOMAS L. DENNIS, a citizen of the United States, and a resident of the borough of Brooklyn, in the city of New York, county of Kings, and State of New York, have invented certain new and useful Improvements in Speaking-Tubes, of which the following is a specification.

My invention, while referring generally to speaking-tubes that are made use of in houses and on shipboard for communicating from one part thereof to another, has reference more particularly to that form thereof in which a whistle or other signal is employed at or near the ends thereof for calling the attention of the party with whom it is desired to communicate preparatory to the commencement of the conversation or otherwise.

Heretofore in the construction of speaking-tubes the whistle or other signal has either been contained within a tubular plug which in practice was inserted in the mouthpiece of the tube, with a projecting flange that extended outward over the edge of the same in the form of a cover, or else the whistle or other signal has been pivoted near its lower edge to the lower portion of the interior of the mouth by a pivot extending to the outside thereof and provided at its extremity with a crank-like portion, whereby the whistle or other signal could be turned downward when it was desired to converse through the tube into a plane approximating parallelism to the axis of the latter to thereby open the same. With the first of these constructions, however, it is necessary after the whistle or other signal has been sounded to remove the tubular plug from the mouthpiece before the conversation can be carried on between the parties at the different ends of the tube, and when so removed it is liable to be misplaced, distorted, or lost, or else not returned to its place in the tube, in which cases the calling thereafter of the person desired is rendered impossible. On the other hand, with the pivoting of the whistle or other signal on an axis that extends through the walls of the tube to the outside thereof and provided at its end with a crank-like arm or portion it is found impossible to so locate this axis as to permit of the whistle or other signal being

swung down sufficiently far in the tube when it is desired to converse through the latter as to carry it substantially below the inner surface thereof and prevent it acting as an obstruction to the transmission of sound. Moreover, with the axis thus extending laterally of the tube and provided with a crank-like portion at its end difficulty is experienced in locating the tubes in close relationship to one another, as is sometimes necessary when a number of these tubes are to be arranged side by side in a limited space, and sufficient room be left to manipulate the whistle or signal of any of the intermediate tubes.

To obviate these objections and to provide a speaking-tube in which the crank-like portion of the axis may be dispensed with and the pivoting of the whistle or other signal in the tube sufficiently low down in its interior as to carry it substantially below the general interior diameter thereof are the objects of my invention.

To these ends my invention consists, first, in a suitable tubular body or socket provided with an interior chamber or recess and a detachable mouthpiece, with a detachable ring or annulus interposed between them and a whistle or other signal jointed thereto; second, in a suitable body or socket provided with an interior annular chamber or recess and a detachable mouthpiece secured thereto, with a ring or annulus arranged within the interior of the body or socket and a whistle or other signal pivoted near the periphery thereof and provided with an arm or finger-piece extending therefrom outward through the walls of the body or socket for swinging the whistle or signal upon its axis; third, in the combination, with a body or socket having an annular chamber or recess formed in its interior, a mouthpiece detachably secured thereto, and a detachable ring or annulus arranged in the interior of the former, of a whistle or other signal pivoted to the side of the ring or annulus and provided with an arm or finger-piece extending outward through the walls of the body or socket for swinging the whistle or other signal on its axis and a second signal or tell-tale arranged in coöperative relationship to such arm or finger-piece for indicating when the first-mentioned whistle or signal has been

sounded, and, fourth, in various other constructions and combinations of parts, all as will hereinafter more fully appear.

Referring to the accompanying drawings, which form a part of this specification, Figure 1 is a side elevation of a mouthpiece of a speaking-tube and the parts in close relationship thereto constructed in accordance with my invention; Fig. 2, a longitudinal section of such mouthpiece and parts taken in the plane of the axis thereof; Fig. 3, a transverse section of the same taken in the plane xx of Fig. 2, looking toward the left in that figure; Fig. 4, a side elevation of the mouthpiece of a speaking-tube and the parts arranged in connection therewith of a slightly-modified construction, and Fig. 5 an edge view of the signaling device constructed in the form of a whistle detached.

In all the figures like letters of reference are employed to designate corresponding parts.

A indicates a body or socket which in practice is secured to and forms the extremity of the speaking-tube A^* , and B is a mouthpiece for coöperating therewith. The body or socket A is constructed in tubular form and is provided at its outer end with an annular recess a , in which is received the inner end of the mouthpiece that is detachably secured therein. In the securement of this mouthpiece in the recess or chamber various means may be employed. In some instances I find it convenient to effect this securement by means of a bayonet-joint, in which case suitable pins a' preferably extend through the walls of the body or socket A and engage at their inner ends with angular grooves b , that are formed in the outer surface of the mouthpiece, as shown in Fig. 4. I prefer, however, to make use of screw-threads for the purpose, in which cases male and female threads b' and b^2 are employed that are respectively formed on the exterior of the mouthpiece B and in the interior of the recess or chamber a , as shown in Fig. 2, but either of these forms of securement may be employed, as desired, and the devices operate with equal efficiency.

C indicates a signal by means of which the attention of the person to be communicated with may be called. This signal may be of various forms. As here shown, however, it is constructed in the form of a whistle, and is preferably composed of two hemispherical sheet-metal disks $c c'$, that are united around the edges of their concave faces in lenticular form and are each provided in its central portion with an orifice c^2 , that is constructed with an inwardly-extending flange c^3 around its periphery, whereby to insure of the proper whistling sound being made when air is forced through the former. In the securement of these disks together solder or other equivalent uniting material may be employed, if so desired. I prefer, however, to dispense with those materials and to unite them by bending the edge of one—as, for instance, c —over the other, as shown in Fig.

2, in which case the disk whose edge is bent over is constructed somewhat larger than the other to permit of this operation being performed. As thus constructed the signal is pivoted within the body or socket A in such a manner that it may be swung across or to one side of the longitudinal orifice therethrough, as may be desired, and to this end I make use of a ring or annulus D, which is preferably clamped in the annular or other recess a between the vertical walls thereof and the inner end of the mouthpiece B, and is provided on one of its faces near its outer edge with lugs d , between which the signal is pivoted by a pivot d' , that extends through the former and through similar lugs d^2 , formed on or supported from the latter.

In its normal position the signal will extend across the longitudinal orifice through the body or socket A with the edges of its outer face in contact with the ring or annulus D, as shown by full lines in Fig. 2, and in this position, which is that occupied by it when it is to be sounded, it will be held by a spring d^3 , which coiled at its ends around the extremities of the pivot d' bears with its looped middle portion against its inner side. On the other hand, when it is desired to converse through the tube the signal will be swung on its pivot from across such orifice to one side thereof or into the position illustrated by dotted lines in that figure, to permit of which and allow of its being carried substantially outside of the general diameter of the same the orifice in the body or socket A is preferably enlarged midway of its length, as shown at A' . For effecting this swinging of the signal to one side when desired various forms of mechanism may be employed. In the form selected by me for the exemplification of my invention, however, it consists of an arm or finger-piece d^4 , which extends outward across the pivot d' through a suitable orifice a^2 , formed in the walls of the body or socket A, and carries the lugs d^2 , by means of which the signal is pivoted to the ring or annulus D through the lugs d . In some cases I find it convenient to construct this finger-piece separately from the signal and secure it thereto by rivets or otherwise. In others I construct it integrally therewith, and to that end I form each of the hemispherical disks $c c'$ with a narrow radially-projecting portion, which in the completed finger-piece is superposed upon the other and the two bound together by bending the end of the one over the end of the other, as shown. Either of these forms of construction may be adopted, as preferred, it only being essential that whatever the form selected may be the finger-piece be projected through the walls of the body or socket A on the side of the pivot d' opposite that upon which the signal is located.

In some cases it is found desirable or necessary to locate a number of speaking-tubes side by side or in other close relationship, and

when so located it is often found difficult to determine in which of the several tubes a particular signal has been sounded. To obviate this, I sometimes find it convenient to employ
 5 a secondary signal or a telltale to furnish the desired information. The form of this secondary signal or telltale which I have found the most desirable and efficient when employed consists of an aperture e , which passes
 10 through the walls of the body or socket A from the inside to the outside thereof, and of a lever e' , that is made in the form of a plate at one end, which extends over and normally covers the aperture e and is pivoted at the
 15 other end to the outside of the body or socket in a stand e^2 , with this latter end so weighted as to counterbalance the other in whatever position it may be placed. In its normal position the flat end of this lever will rest upon
 20 the aperture e and close the same, and in that position it will remain until the signal C is sounded, when the air passing through the speaking-tube for that purpose will force up this end of the lever e' , and thereby indicate
 25 that its appropriate main signal C has been sounded. In this position it will remain until returned to its original position by the hand of the person ready for the next sounding of its appropriate signal, when it will be again
 30 raised, and so on. This secondary signal or telltale may be located at any convenient point upon the body or socket, as desired. I prefer, however, to locate it slightly in rear of the finger-piece d^4 , which in practice will
 35 be preferably disposed on the under side of the body or socket A , and to so arrange the parts that the free flattened end of the lever e' will be in close relationship to the rear side of the finger-piece, as thereby its return from
 40 its raised position (shown by dotted lines in Fig. 1) to its depressed or normal position (shown by full lines in Fig. 2) will be insured by the finger of the person as it is applied to the finger-piece to swing down the signal C
 45 from across the longitudinal orifice in the body or socket A to one side thereof when it is desired to converse through the speaking-tube.

With the parts constructed and arranged
 50 as above described I not only dispense with the crank-like arm projecting from the side of the body or socket heretofore employed and arrange the signal-operating device on the side of the pivot opposite that upon which
 55 the signal is located, as will be seen, but so locate such pivot with respect to the periphery of the longitudinal orifice in the body or socket that the signal when swung from across the orifice may be carried more completely
 60 to one side thereof than has been possible with the constructions heretofore in use.

Although in the foregoing I have described the best means contemplated by me for carrying my invention into practice, I wish it
 65 distinctly understood that I do not limit myself strictly thereto, as it is obvious that I

may modify the same in various ways without departing from the spirit thereof.

Having now described my invention and specified certain of the ways in which it is or
 70 may be carried into effect, I claim and desire to secure by Letters Patent of the United States—

1. The combination, with a tubular body or socket provided with an interior chamber or
 75 recess, and a tubular mouthpiece secured thereto, of a ring or annulus arranged in such recess, and a signal jointed thereto, substantially as described.

2. The combination, with a body or socket
 80 provided with an interior annular chamber or recess, and a mouthpiece detachably secured thereto, of a detachable ring or annulus arranged in such chamber or recess, a signal pivoted thereto, and devices by means of
 85 which the signal may be swung upon its pivot, substantially as described.

3. The combination, with a tubular body or socket, and a mouthpiece detachably secured
 90 thereto, of a ring or annulus detachably arranged within the body or socket, a signal pivoted thereto near its periphery, a spring for swinging the signal in one direction upon its pivot and yieldingly holding it in one position,
 95 and devices by which it may be swung in the other direction, substantially as described.

4. The combination, with a tubular body or socket provided with an annular chamber or
 100 recess formed in its interior and an orifice through its side, and a mouthpiece detachably secured thereto, of a ring or annulus detachably secured in such chamber or recess, a signal pivoted thereto and provided with a finger-piece extending through such orifice whereby
 105 to swing the signal in one direction, and a spring for swinging it in the other and yieldingly holding it in contact with the ring or annulus, substantially as described.

5. The combination, with a tubular body or socket provided with an annular chamber or
 110 recess in its end and an orifice through its walls, and a mouthpiece secured therein, of a ring or annulus detachably clamped between the vertical walls of the chamber or recess and the inner end of the mouthpiece, a whistle pivoted to
 115 the face of such ring or annulus near its periphery and provided with a finger-piece that extends outward from its edge over the pivot to the opposite side thereof and through said orifice, for swinging such whistle in one direc-
 120 tion, and a spring for swinging the whistle in the opposite direction and yieldingly holding it in contact with the ring or annulus, substantially as described.

6. The combination, with a tubular body or
 125 socket provided with a chamber or recess in its end, and an orifice through its walls, and a mouthpiece detachably secured thereto, of a ring or annulus detachably secured in such chamber or recess, a signal pivoted thereto
 130 and provided with a finger-piece that extends outward through said orifice, and a secondary

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signal or telltale, comprising an orifice and lever arranged with its free end in close relationship to the said finger-piece, substantially as described.

5 7. The combination, with a ring or annulus provided with lugs on its side, and a whistle composed of two perforated hemispherical disks united in lenticular form and provided
10 with two narrow radially-extended strips bound together to form a finger-piece, and

carrying lugs, and a pivot passing through these lugs and through the former lugs, to hinge the whistle to the ring or annulus, substantially as described.

In witness whereof I have hereunto set my hand this 20th day of October, 1899.

THOMAS L. DENNIS.

Witnesses:

WM. HOWARD SLANE,
CHARLES H. BULKLEY.