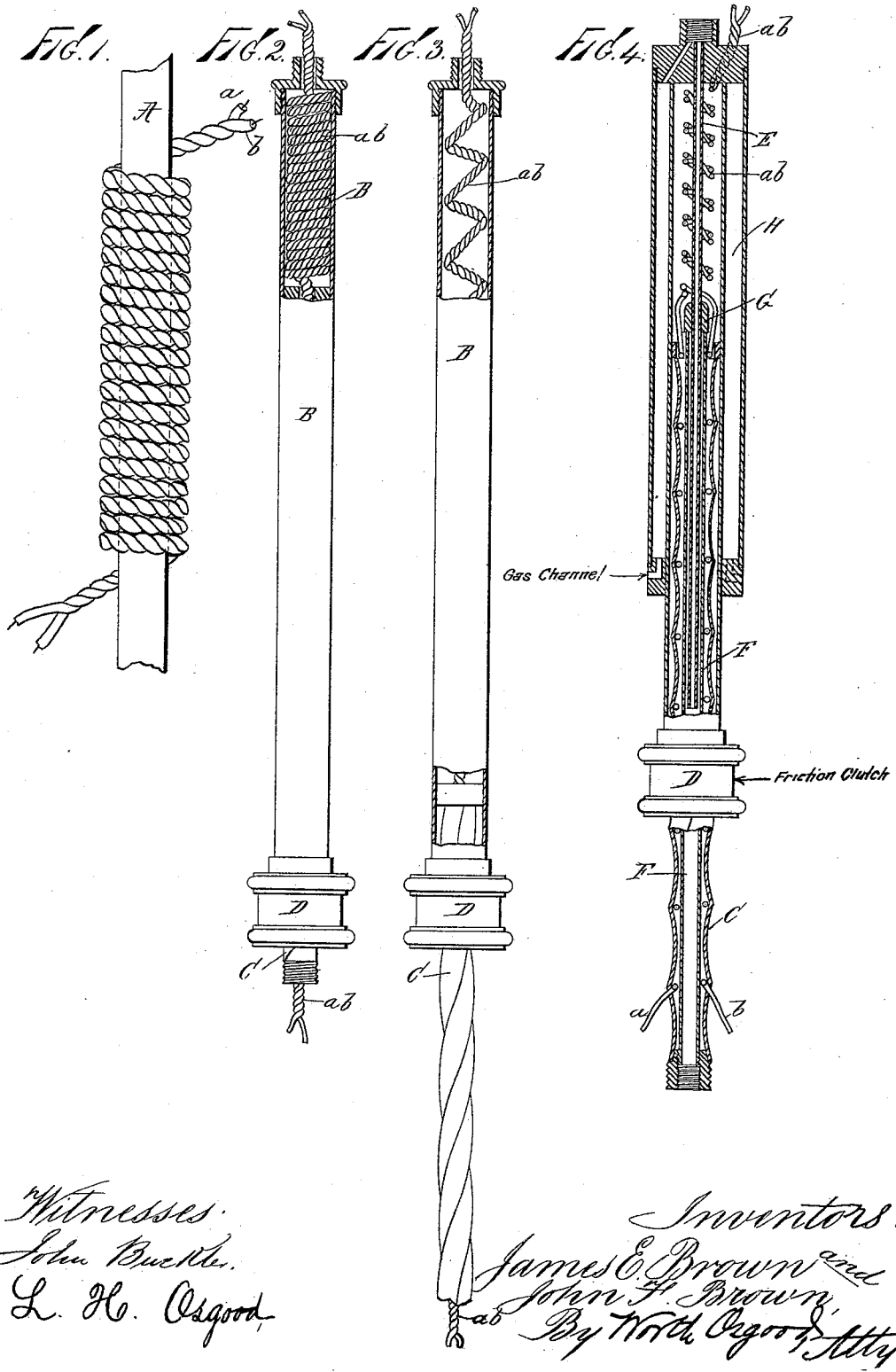
(No Model.)

J. E. & J. F. BROWN.

EXTENSION ELECTROLIER.

No. 420,552. Patented Feb. 4, 1890.



Witnesses:
John Buckle.
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James E. Brown and
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By Wirth, Osgood & Atty.

UNITED STATES PATENT OFFICE.

JAMES E. BROWN AND JOHN F. BROWN, OF BROOKLYN, NEW YORK, ASSIGNORS TO THE ARCHER & PANCOAST MANUFACTURING COMPANY, OF NEW YORK.

EXTENSION-ELECTROLIER.

SPECIFICATION forming part of Letters Patent No. 420,552, dated February 4, 1890.

Application filed September 11, 1889. Serial No. 323,633. (No model.)

To all whom it may concern:

Be it known that we, JAMES E. BROWN and JOHN F. BROWN, of Brooklyn, county of Kings, and State of New York, have jointly invented certain new and useful Improvements in Extension-Electroliers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Our invention relates principally to devices for sustaining electric lamps, which devices are generally known as "electroliers," and particularly to adjustable or extensible electroliers, though part of our improvements may be utilized in extensible or adjustable gasoliers without the electric attachments or appliances.

The main objects of our invention are to provide or produce a simple, cheap, compact, durable, and efficient adjustable or extensible electrolier, which may be used either with or without gas, which will require no specially enlarged chamber to accommodate the electric conductors, wherein the conductors cannot become tangled in such manner as to interfere with the movements of the slide, and wherein the gas and conductor conduits are effectually separated at all positions of the slide. To accomplish all of this, and to secure other and further advantages in the matters of construction, operation, and use, our improvements involve certain new and useful arrangements or combinations of parts and peculiarities of construction and operation, as will be herein first fully described, and then pointed out in the claims.

In the accompanying drawings, forming part of this specification, Figure 1 is an elevation (enlarged beyond other figures) showing the manner of coiling the electric conductors upon a mandrel in order to prepare them for use in the electrolier. Fig. 2 is a view, partly in section and partly in elevation of one form of electrolier constructed and arranged for use in accordance with our invention, the slide being at its uppermost position; and Fig. 3 is a similar view of the same, showing the slide as having been moved down nearly to its limit of travel. Fig. 4 is a view, partly in section and partly in elevation, representing our improved electrolier adapted for use also with gas, (in the form known as "combination-fixtures,") showing our improved manner of constructing the gas-channels, the slide being only partly lowered.

In all the figures like letters of reference, wherever they occur, indicate corresponding parts.

It has not been deemed necessary to delineate the electric lamps or the gas-burners, for these may be of any pattern and applied in any numbers, as will be readily understood.

It has been proposed heretofore in extension-electroliers to employ an enlarged pipe or socket in which the slide was fitted and the electric conductor (a spiral wire) was connected to the slide and was arranged loosely in the enlarged pipe or socket, and when the slide was pushed up the coils of the spiral conductor would tangle, buckle, or overlap, thus destroying the efficiency of the device; but in our case the spiral conductor has its coils fitting snugly in the pipe, which prevents the coils from tangling.

We dispense with the enlarged pocket, insure the proper and frictionless coiling of the wires, and adapt them for use in connection with any plain slide-chandelier by first coiling the conductors around a mandrel of proper size, substantially as indicated in Fig. 1, wherein A is the mandrel and *a b* the conductors. The outside of the coil is of diameter to fit loosely within any smooth pipe, as B, which is the stationary pipe of the fixture, and the length of the coil is such as to afford the extension required by the travel of the slide. The coil thus made constitutes a spiral spring of sufficient elasticity to insure that when returning from an extended to a compressed condition no one of its members can pass the other, and thus no tangling can take place within the casing or pipe.

C is a sliding pipe through which the conductors pass, and upon which the electric lamp or lamps are sustained in any suitable manner.

D represents a box for a friction or other

clutch, by which the sliding pipe C is maintained at any point to which it may be adjusted.

The pipe C though shown as curved or fluted need not be so made, and the character or kind of holding-clutch is not at all material. The pipes and couplings indicated in Figs. 2 and 3 may be those of any ordinary extension-gasolier, requiring, as will be seen, no additional fittings or appliances other than the electric conductors (applied after the manner of our invention) to adapt the fixture for use as an extension-electrolier. In it the slide may be moved with the same facility and with the same advantages as if used with gas-burners. In the compound or combination fixtures, using both gas and electricity in or on the slide, the wires are coiled and applied as before explained. Through the center of the coil we pass a small gas-conductor, (shown at E, Fig. 4,) and in the center of the slide-pipe C we fix another gas-pipe F. These two pipes are made to slide one in the other, a suitable packing-box, as at G, being employed to insure always a gas-tight joint. The wires within the slide-pipe find lodgment in the space between it and pipe F and are brought out at any desired point to be connected with the lamp or lamps. Gas flows through the central pipes to the burner or burners applied at any point, as on the coupling shown at the lower end.

The gas-channel represented at H may be employed in case burners are to be located above the slide, and omitted if they are not. By use of the two pipes sliding one within the other gas is effectually excluded from the chambers containing the conductors, and the movements of the slide-pipe are in no way impeded by any of the connections.

The interior pipes E and F may be employed in sliding gasoliers without the wires, obviating the packing of the outer slide-pipe and effectually preventing escape of gas except through the burners.

The coil of conductors adds practically nothing to the expense of manufacture, and the improved device admirably answers all the purposes or objects of the invention before set forth.

Having now fully described our invention, what we claim as new therein, and desire to secure by Letters Patent, is—

1. In an extension-electrolier, the combination of a stationary tube, a tube fitting and sliding therein, and a spiral conductor arranged above the sliding tube and having its coils in line and fitting snugly in the stationary tube, whereby the coils are guided by the stationary tube and cannot pass one another, substantially as and for the purpose described.

2. The combination of the stationary tube, the sliding tube, the two inner gas-conducting tubes sliding one within the other, and the electric conductors located and arranged substantially as shown, and for the purposes set forth.

3. The combination, with the stationary tube, sliding tube, and a friction or holding clutch, of the two inner gas-conducting tubes sliding one within the other, and the electric conductors located and arranged substantially as shown, and for the purposes set forth.

In testimony that we claim the foregoing we have hereunto set our hands in the presence of two witnesses.

JAMES E. BROWN.
JOHN F. BROWN.

Witnesses:
S. B. GOODALE,
B. F. ALLEN.