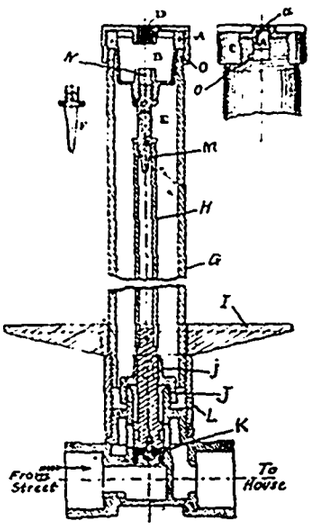
-it has to be renewed, this can be done without digging up the stop cock; and herein the Imperial stop cock supplies a long felt want It can be repaired without being dug up Digging up or removing costs from $3 in a wooden sidewalk to $12 in a permanent sidewalk. The Imperial stop cock saves all this expense, which, in large cities, amounts to thousands of dollars annually It can be taken apart, and the internal parts removed to renew washer in a few moments' time, by the aid of a specially constructed box-wrench supplied to corporations at a nominal cost From its piston motion, no strain can come on the lead pipe joints, thus avoiding the leakage so common with all other styles of stop cocks, caused by turning on and off No part can rust or corrode, the whole being made of brass and rustless iron



The accompanying cut and the following directions for operating will explain the working of this stop cock: The top is locked by the engaging of the projections A (on cup B) with the recesses on the underside of the cap C. The cup is held against the underside of the cap C, by the pressure of the water on the bottom of the plunger K To unlock the cap, drive in the lead plug D with small key, and the plug will fall into the cup B. Insert key into square hole N. Press down till projections A touch bottom of recesses O, and turn to right, locking projections a in recesses o. This holds the cup down, and allows the cap to be screwed off by hand. Now by inserting the key once more into the square hole and turning to the left, the cup is disengaged and can be lifted out by hand, and the plugs E and F interchanged as desired F being shorter than E, allows the piston K to rise by the pressure of water, thereby opening the stop cock E being long keeps piston down and water off When the cup B and cap C are replaced, care should be taken to see cup is locked before replacing lead plug.

To renew the plunger or washer K, the cap is taken off and the cup taken out The long hollow key is slipped down over the small tube H, the square hole in the end fitting on the square part j of cap J The small handle of the key is now turned to the right, which fastens the key to the pipe H at M when it is tapped. The large handle is now used to unscrew the cover J, which releases the plunger K The key is drawn out, bringing with it the plunger, when a new washer can be put on. The plunger is replaced and key detached from tube H The cup B, cap C and lead plug D are then put back, the whole operation taking but a few minutes.

LITERARY NOTES.

Central Station Book-keeping and Suggested Forms, with an appendix for Street Railways. By Horatio A. Foster, Mem. A.I.E.E., New York: The W. J. Johnston Co., Ltd., 253 Broadway. Cloth, 139 pages, 75 forms and diagrams Price, $2.50. Until an attempt is made to gather data relative to the items of cost of the distribution of electric current, it is not easy to judge how little is known about those details by the majority of station managers. Most of the large low tension stations keep quite accurate data of this nature, but among high tension stations, both arc and alternating incandescent, such is seldom found to be the case Small stations of all kinds neglect the matter altogether, and, therefore, have no ground to fight on when the subject of a municipal plant is brought forward, as it is sure to be sooner or later. The importance of going more deeply into the costs of operation and management can scarcely be exaggerated, and no central station manager can be in the best shape to do business in times of close competition with gas and other companies, until he knows the cost of every item going to make up the total unit cost of supplying the electric current to his customers. It is in order to enable him to put his business on a rational basis, as suggested above, that this work has been written, and the well-known competency of the author to undertake the task is assurance that it may be consulted and followed with confidence. The book contains diagrams for the organization of the staff of electrical central stations, the classification of accounts and reports, and includes sample forms for every department As the name indicates, the work is devoted mainly to the accounting department, both of central stations and street railways, and outlines a complete scheme for its organization and routine, which will enable the management to determine at any moment the condition of the business.

The *Engineering Magazine*, of New York, with its October number inaugurated a new feature which will be appreciated by all those interested in the engineering, scientific and allied professions. This new department of that handsome magazine is called a "Review of the Industrial Press," and the editor's idea is to do for the technical press what the "Review of Reviews" has succeeded in doing for the field of politics and literature. His purpose is to give expert reviews of the most important publications of the month in every branch of applied science; to supply a complete index to all the leading articles published in the scientific and industrial journals of the British Empire and the United States, and, finally, by means of a clipping bureau, to furnish the full original text of each article thus catalogued or reviewed The exhaustiveness of this new enterprise will be better estimated when it is stated that in the October number over seventy pages are devoted to it, and as yet the review is only in an experimental stage; as time goes on the publishers will make additions and improvements as they shall be deemed necessary to the thoroughness of the work, and there can be no doubt but that the final outcome of their efforts will be a very valuable addition to the list of the world's indexes.

The legal fraternity and those interested in patents will feel under a debt of gratitude to J. G Ridout, the well-known solicitor of patents, Toronto, for his new work, "Ridout on Patents," just published by Rowsell & Hutchison, Toronto. Considering that seventy years have elapsed since the first patent Act was passed in Canada, and that during all this time no treatise has appeared on the subject, it will be admitted that there is urgent call for such a work As a barrister and civil engineer, and as a solicitor of experience, Mr Ridout was peculiarly well qualified to undertake such a work, and the volume before us shows wide research and patient investigation. The author gives an interesting history of the development of the present patent laws of Canada, showing where they differ from the English and American laws, and giving numerous quotations from cases and judgments rendered in Canada in years past, in illustration of the leading principles of the patent laws of the country. Having had nine years' experience as a solicitor of patents, and having acted both as solicitor and counsel in some of the most important patent suits in the Dominion, he has acquired a wide knowledge of precedents, of which the reader has the full benefit in this volume Our present law, it appears, was founded very largely on the American Patent Act of 1837, but differs in many material respects from both the present American and English Acts, so that till now no knowledge of their points of difference has been available to the ordinary lawyer who is not an expert, nor to the expert who is not a lawyer. The various forms and procedure requisite in obtaining a patent in Canada are given in this treatise, which makes a volume of about 600 pages, and is sold at $5.50 in cloth and $6 in half calf, postage being 12 cents extra.

The *Mining and Scientific Journal* is the title of a new trade journal started in Chicago. The first number to hand is very neatly printed and well edited.

The thirteenth edition of the "Electrical Trades Directory and Handbook," issued by the publishers of the *Electrician*, Salisbury Court, Fleet street, London, Eng., is now in preparation, and bids fair to be more valuable than any previous issue. It will contain apparently lists of almost every trade and business connected with electrical work, as well as electric railway, light and power plants, and will embrace in its scope Great Britain, the United States, and the continent of Europe. The publishers will be glad to receive reports from any firm interested for the new edition, which is to be issued in January next. Sample pages and forms are sent on application.

The *Architects' Directory* for 1894 of the United States and Canada, by Wm. T. Comstock, 23 Warren street, New York, and 260 Dearborn street, Chicago. Price $1. This book has evidently been very carefully compiled. It contains list of architects, with