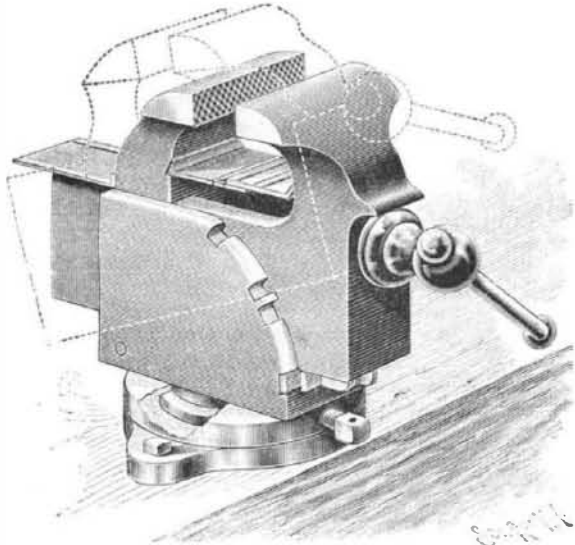


A CONVENIENT BENCH VISE.

The illustration represents a vise which may be readily moved into any desired position to hold the work at different angles to the horizontally moving file in the hands of the mechanic, to facilitate the proper filing of hexagons, octagons, or articles of other shapes. The improvement has been patented by Mr. Abraham Lurie, of No. 330 East Seventieth Street, New York City. In the base plate turns a circular offset projecting from the bottom of a casing carrying the vise proper, which is locked in place by



LURIE'S BENCH VISE.

a set screw. In the rear end of the casing, near its bottom, is a pivot on which is hung the foot of the shank of the fixed jaw, the opposite movable jaw having its shank formed in the shape of a casing fitted between the parallel sides of the outer casing. The bottom of the casing for the shank of the movable jaw has dovetails engaging corresponding grooves in opposite sides of the shank of the fixed jaw, so when the latter is moved into an angular position on its pivot, as indicated by the dotted lines in the illustration, the movable jaw moves with it, without disturbing the relative position of the two jaws, the screw rod at the same time operating to move the movable jaw toward or from the fixed jaw. To lock the fixed jaw in the desired angular position, a locking device, consisting of two L-shaped latches, is attached to its foot, the latches being normally held in an outermost position by a spring, when they engage correspondingly shaped notches in the segmental edge of the sides of the outer casing. The latches may, by press-

ing inward, be readily disengaged from either set of notches, and the casing carrying the jaws may be turned in its base on loosening the set screw. There are sliding plates between the jaws, and a fixed plate extending rearward from the fixed jaw, to prevent filings from passing into the casing.

THAWING OUT FROZEN PIPES, ETC.

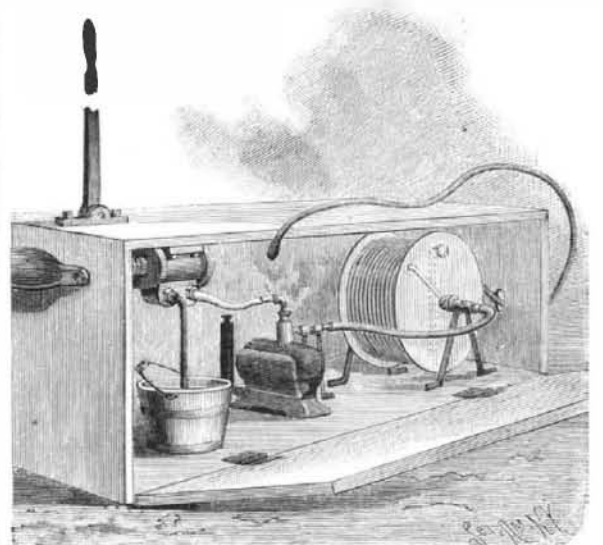
The difficulties, inconvenience, and sometimes very considerable loss which may attend the sudden freezing up of pipes, drains, etc., have suggested the improvement shown in the accompanying illustration, for the ready thawing out of such conduits, and for which a patent has been granted to Mr. Daniel H. Streeper, of Norristown, Pa. The apparatus is contained in a box, in which a boiler is held over a plumber's furnace, a hand pump at one end of the box forcing water into the boiler through a hose, while a pipe from the boiler leads to a pipe which forms the axle of a drum supplied with water by an independent filling tube. A portion of the pipe forming the axle of the drum is perforated, and it is surrounded by a hollow axle whose ends are closed by stuffing boxes, a pipe leading from one end of the hollow axle outward on one face of the drum to the rim, on which the pipe is formed into a coil, adapted to be unwound from the drum as required in use. The pipe is preferably of lead, but a hose may be employed instead, and on its outer end is a pilot for conveniently guiding the end of the pipe into and through the frozen pipe to be thawed out. For forcing a flexible hose forward in a frozen pipe a rod may be attached to the pilot, or the pilot may be flexibly attached in case the pipe is to pass around curves. In operation the water heated by the furnace is forced by the hand pump from the boiler into the hollow axle, where it heats the water in the drum and the pipe coiled on it, the hot water or steam at the same time passing through the pipe itself, and through the pilot at its end, into the frozen pipe, the coil being unreeled from the drum and pushed into the frozen pipe as the operation progresses.

THE IMPERIAL INSTITUTE, LONDON.

Among all the stately and happy ceremonials of the Queen's Jubilee, none possessed greater intrinsic significance than the recent opening of the Imperial Institute by Her Majesty. That event, as it marked the completion of the idea of showing by a permanent memorial the expansion of the empire during the fifty years of Queen Victoria's reign, was of national importance. To-day a magnificent palace, ample in its proportions as befitting the world-wide empire which it symbolizes, and well adapted for the several purposes for which it is intended, occupies the site at South Kensington made familiar by the series of exhibitions

of which the Colonial and Indian Exhibition of 1886 was the last.

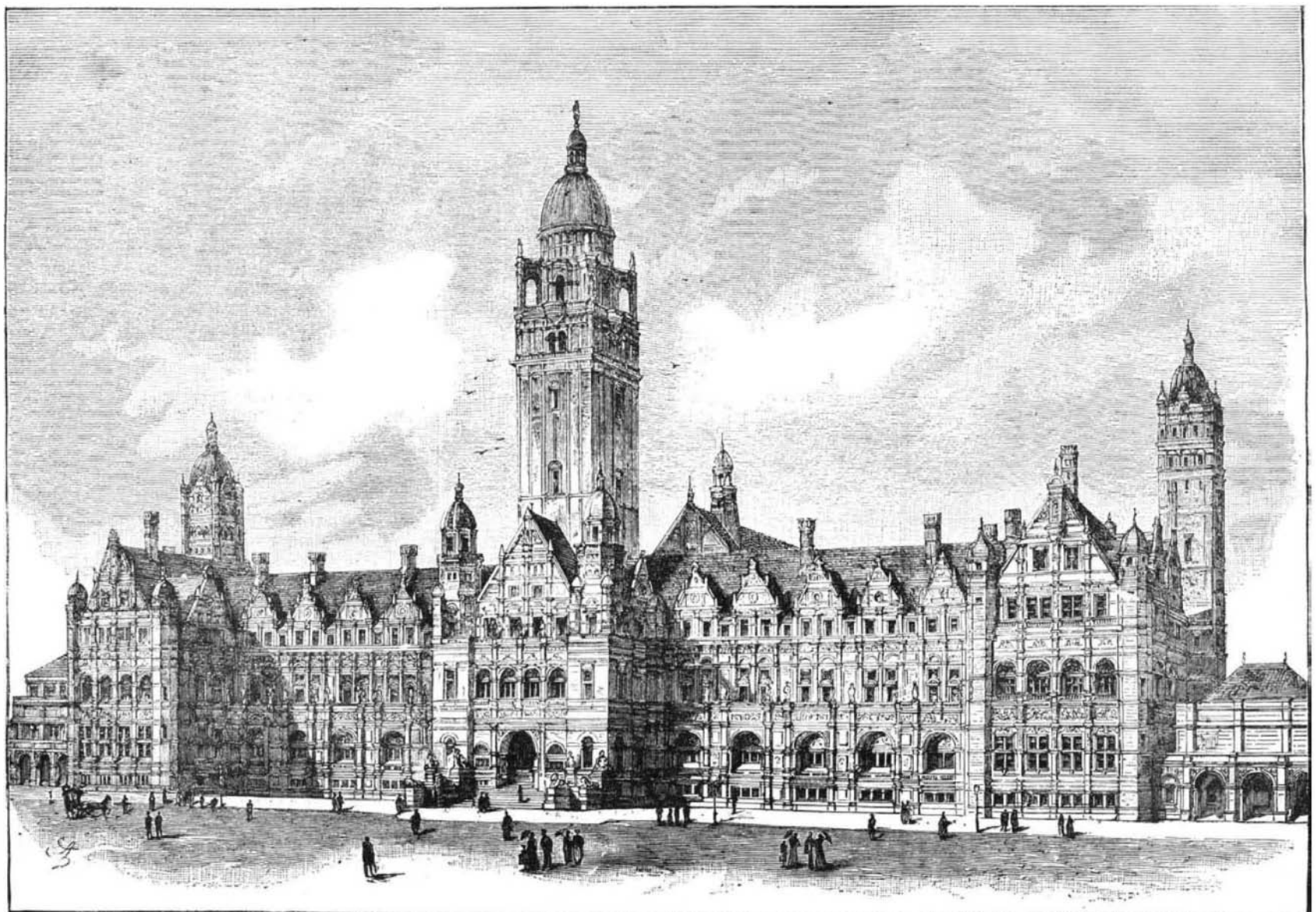
By accepting the advantageous offer of the Royal Commissioners of the first International Exhibition, the owners of the site, the executive of the Imperial Institute have been enabled to devote to the building the greater part of the public funds raised, and a total area of nine acres is now covered with the structure and its courts. Looking down from the great square central tower, one notes immediately on the north side the full proportions of the Albert Hall dome, with the



STREEPER'S APPARATUS FOR THAWING OUT FROZEN PIPES, ETC.

cross of the Prince Consort Memorial rising behind it. The Royal College of Music, also in process of building, occupies the ground between the north gallery of the Institute and the Albert Hall, with the City and Guilds of London Technical Institute adjacent. In front, to the south, the immediate object seen is the Natural History Museum, the ground intervening on the other side of the new wide avenue lying ready for new buildings of the South Kensington Museum, or other public institution, which should harmonize with the surroundings. The trees of Hyde Park and Kensington Gardens, the open spaces, and the glint of the Serpentine form an agreeable contrast to the regular lines of streets and blocks of tall houses—dwarfed from this height, however—which characterize this part of London.

Though the building is to a certain extent shut in by its surroundings, and it is difficult to get an adequate



THE NEW IMPERIAL INSTITUTE, LONDON.