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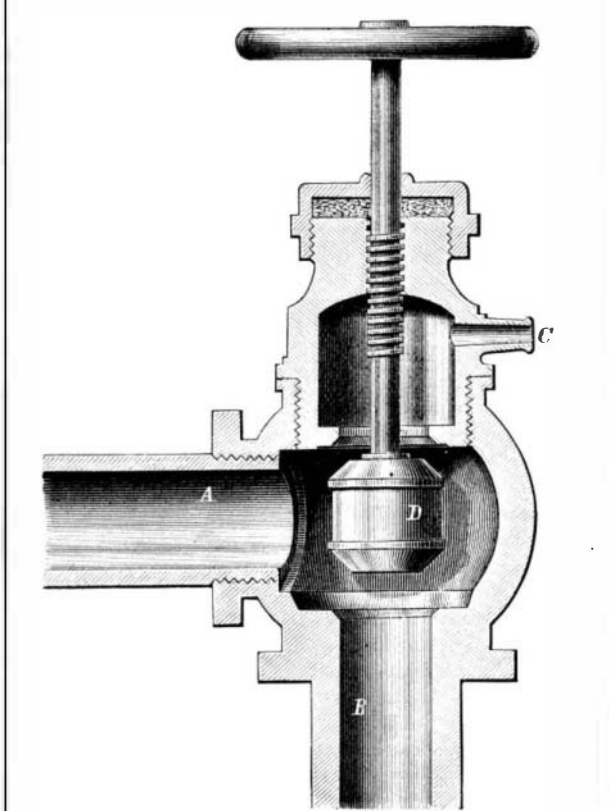
The Speaking Telephone in New York.

Professor A. Graham Bell has recently completed a series of three lectures, in which he introduced his speaking telephone to New York audiences. There can be no question but that the instrument is a most wonderful invention. Without the aid of any battery, using only the current induced in the circuit by its permanent magnet, the telephone on the occasion of the last lecture transmitted musical sounds and speech from Yonkers to New York, a distance of 26 miles. With the battery attached, melodies and chords played on a small organ at Yonkers were distinguishable throughout the large hall where the lecture took place. It is a most bewildering sensation to hear a song faintly emitted first from a box on the stage, then from another suspended overhead, and finally from a third across the room, as the operator switches the current from one telephone to another.

Professor Bell prefaced the exhibition of his instrument with a brief account of the principles on which it is based, and gave an interesting statement of the investigations leading to its invention.

WIGGINS' IMPROVED RELIEF AND SAFETY STOP VALVE.

The improved stop valve illustrated herewith is designed to prevent the accidents due to the careless closing of the feed pipe while the pump is in motion. It is so constructed as always to leave an open discharge. In the annexed engraving, A is the opening leading to the pump. B is the conduit to the boiler, and C opens into the atmosphere. There are two valve seats, one on each side of the opening, A. D is a double valve which may be adjusted to rest upon the lower seat, and so close the passage to the boiler, or upon the upper seat, and so shut off the discharge. It can never close both openings at once; so that there is always a free discharge for the water. In the shell above the upper seat, there is a chamber through which the water passes to



the discharge opening. The stem is screw-threaded, so that the valve may be easily adjusted to either seat. It will be seen that, should the discharge of water into the boiler be

stopped while the pump is at work, the water will escape through the passage, C; and there will be no danger of bursting the pipes or breaking the pump.

This valve is used exclusively on the Atlas farm engine, made at the Atlas Works, 700 North Second street, St. Louis, Mo.

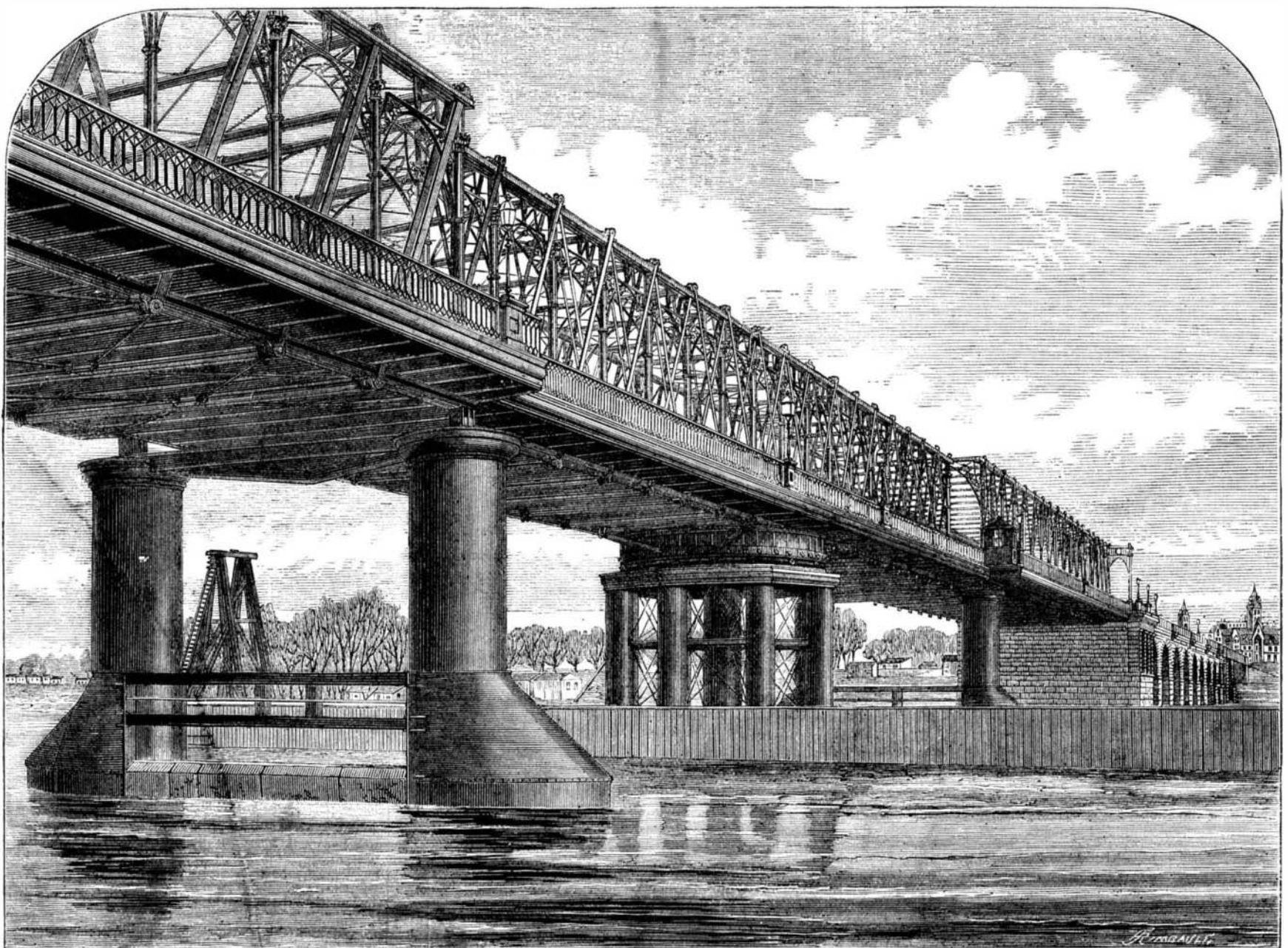
Patented through the Scientific American Patent Agency, March 20, 1877. For further information, address the inventor, Mr. Charles P. Wiggins, 1940 O'Fallon street, St. Louis, Mo.

THE SOUTH STREET BRIDGE, PHILADELPHIA, PA.

The large and handsome engraving on this page is a perspective view of the South Street Bridge, Philadelphia, Pa. We select the engraving from the pages of *Engineering*, which journal published the following description, from the pen of Mr. W. Barnet Le Van, a well known engineer of Philadelphia.

The bridge commences at the intersection of Chippewa and South streets upon the eastern side, to the high ground of the Almshouse property beyond the Junction and West Chester Railroads on the west side of the river, connecting with Spruce street. The entire length of the structure is 1,934 feet 7 inches, consisting of two fixed spans 195 feet 8 inches each, and a draw 198 feet 2 inches in length, supported by a pier at each end of the draw and one in the center to receive the pivot. Each end pier is formed by two columns of cast iron 8 feet in diameter, cast in sections 10 feet in length, 1½ inches thick, with inside flanges 2¼ inches wide by 1¼ inches thick at top and bottom of each section. The flanges are pierced with holes 5 inches apart, from center to center, to receive 1½ inch bolts. The bottom flange is omitted in the section forming the bottom of the column, when in position, for greater facility in penetrating the soil.

[Continued on page 354.]



SOUTH STREET BRIDGE, PHILADELPHIA, PA.