

ESTABLISHED 1841

E. B. Badger & Sons Co.

Manufacturers of Expansion Joints for High and Low Pressure

OFFICE AND WORKS

63-75 Pitts Street, BOSTON, MASS.

SALES OFFICE

101 Park Avenue, NEW YORK

Badger Self-Equalizing Expansion Joints

Made of seamless copper tubes, corrugated and fitted with cast iron or steel rings to control the expansion and provide equal distribution over each corrugation. One piece corrugated construction effectively absorbs vibration and expansion without the use of sliding surfaces which require packing. Space required is usually only that of any flanged fitting. Maintenance is negligible.

Built in Standard and Extra Heavy patterns, furnished with standard flanges for pressures up to 125 lb. and extra heavy flanges for all pressures from 125 to 200 lb., also flangless design for welding into welded lines. Monel metal sleeves are used inside of the corrugations, to protect the copper, when used with super-heated steam and other high temperature fluids.

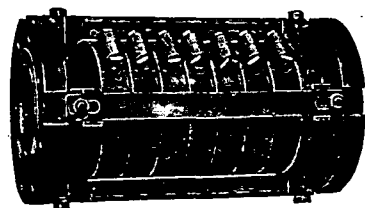


Fig. 1

This type of Joint is furnished in 4 in. and 5 in. sizes, with four and eight corrugations to take 1 in. and 2 in. of expansion. For smaller sizes, we furnish a 4-in. joint with companion flanges, bolts and gaskets, tapped for the size required.

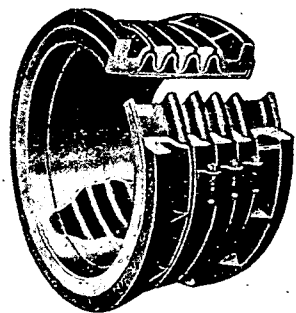


Fig. 3

Flanged Expansion Joint with Monel metal sleeve for super-heated steam.

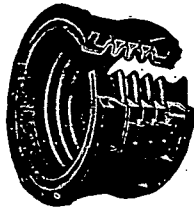


Fig. 2

This type of Joint is made in sizes from 6 to 20 in. inclusive, with two, three, four or five corrugations, $2\frac{1}{4}$ in. deep, each corrugation taking $\frac{1}{2}$ in. of expansion.

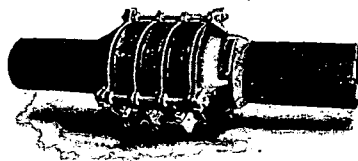


Fig. 4

Welding Expansion Joint.

Self-Equalizing Expansion Joints

Where welded joints are preferred BADGER SELF-EQUALIZING EXPANSION JOINTS are now furnished with steel or wrought iron pipe ends, for welding directly into the pipe line itself.

The same leakless one piece deeply corrugated copper expansion element is retained; with the heavy cast iron equalizing rings that distribute the stresses uniformly throughout the length of the joint.

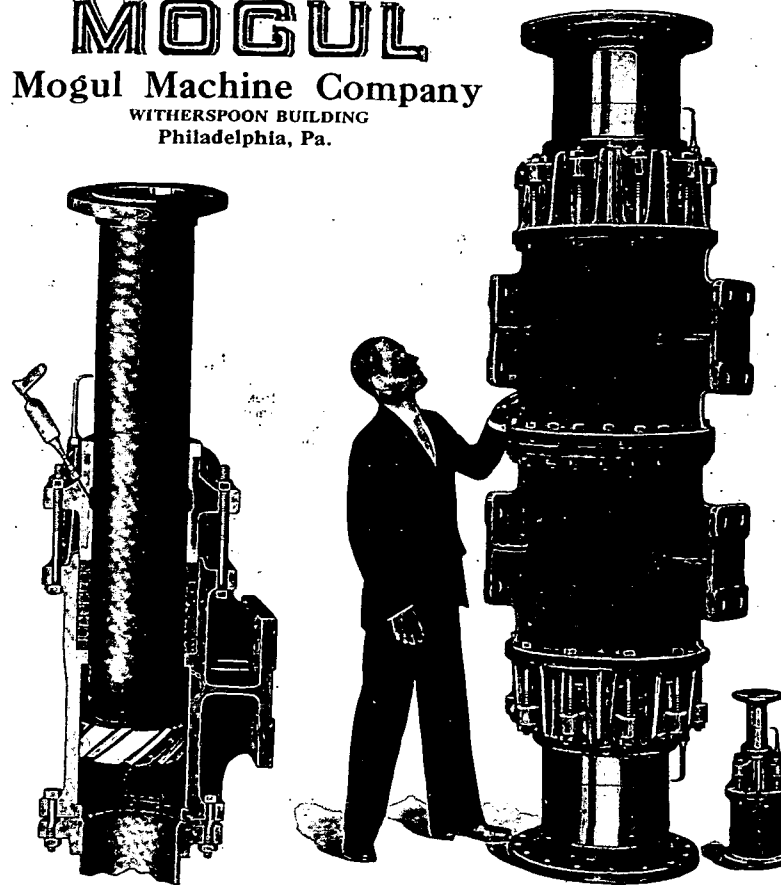
Guaranteed for 200 lb. working saturated steam pressure. Sizes 5 in. and larger.

MOGUL

Mogul Machine Company

WITHERSPOON BUILDING

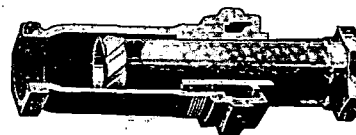
Philadelphia, Pa.



"MOGUL" DOUBLE-END-GUIDED, TYPE F. L. J. (FLANGED) EXPANSION JOINTS

Built in all pipe sizes from $1\frac{1}{2}$ " to 6' diameters, for extremely high or low pressures and temperatures, for saturated steam, superheated steam, hot or cold water, oil or gas and other fluids.

They are Double-End-Guided, have extremely deep packing chambers and unusually long packing-gland take up. They have built-in Traverse Stops and large graphite lubricating chamber. They may be packed while the line is hot and in an expanded condition. Write for Bulletin with complete description and dimensions.



"MOGUL" DOUBLE-END-GUIDED, TYPE R. S. J. (RISER) EXPANSION JOINTS

Built with screwed ends, in all pipe sizes from $\frac{3}{4}$ " to 4" pipe diameters. Write for Bulletin and dimensions.