

A. G. SCHERER.
HOT AIR PIPE.

APPLICATION FILED APR. 19, 1900.

NO MODEL.

FIG. 1.

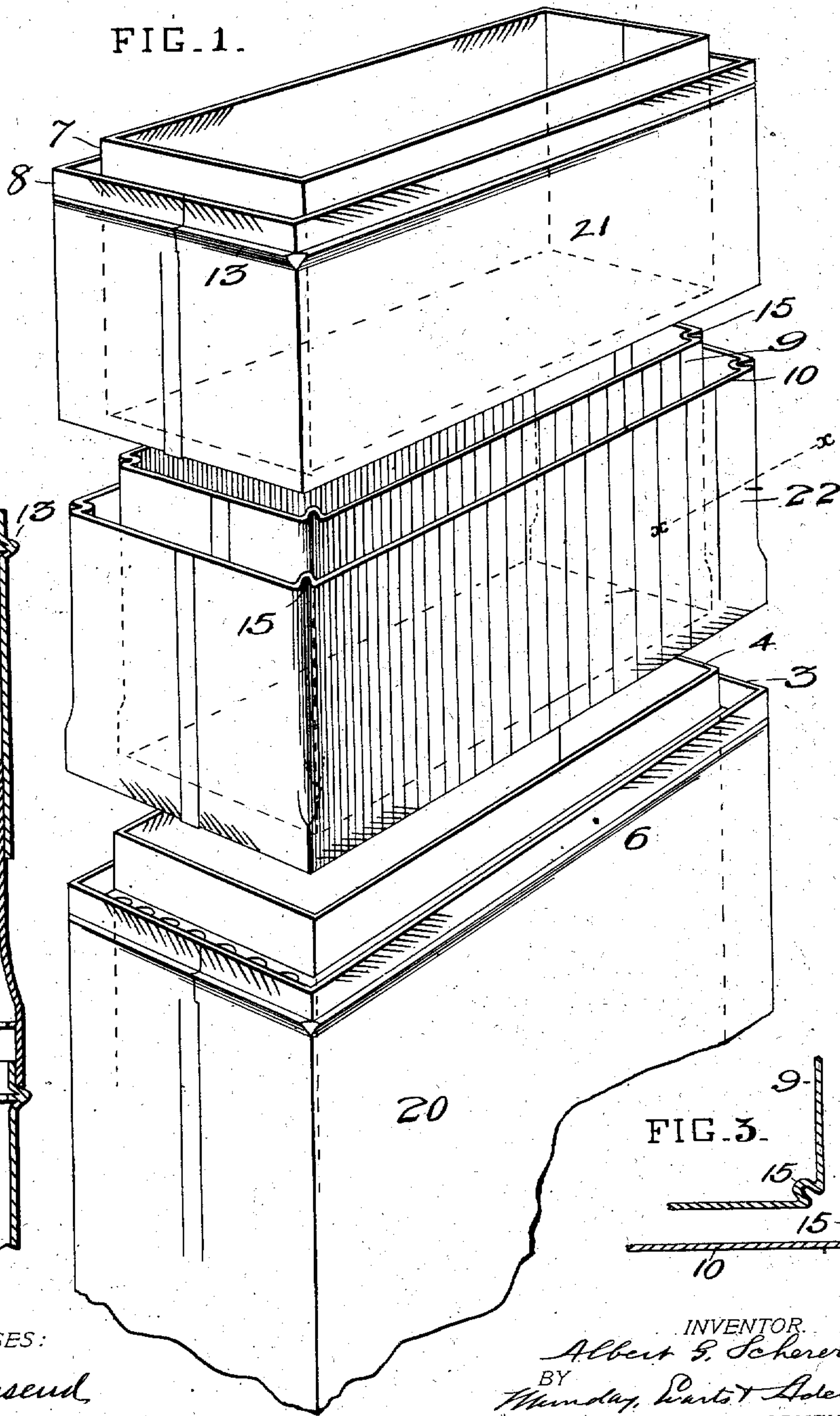


FIG. 2.

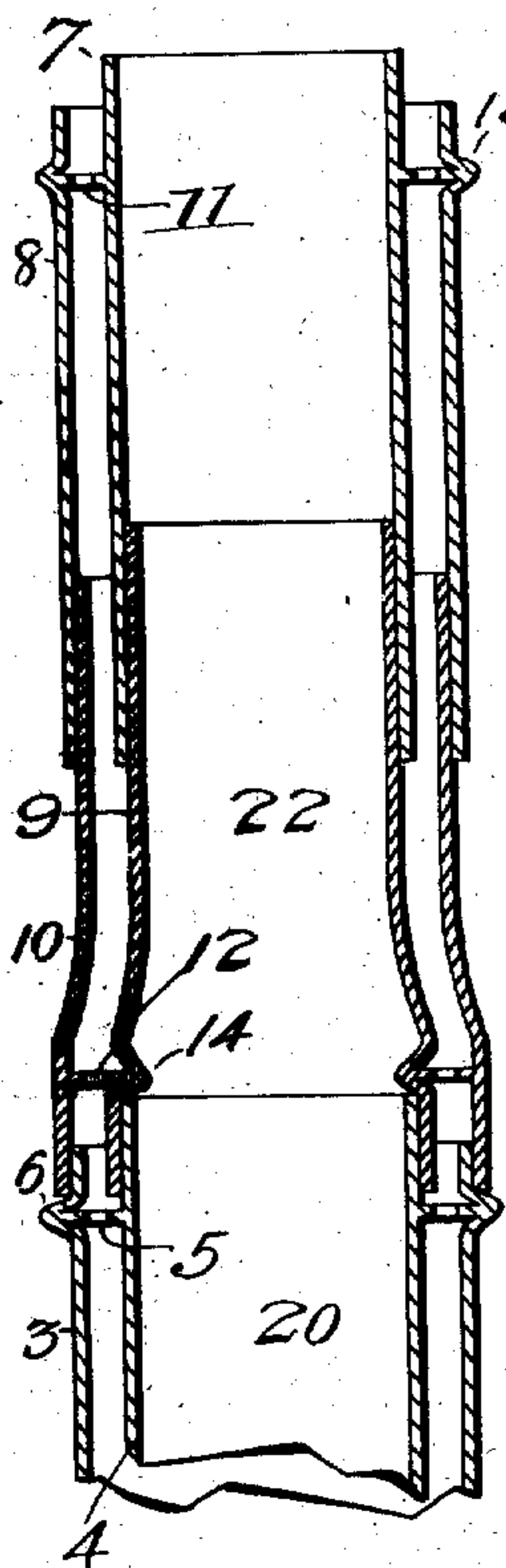
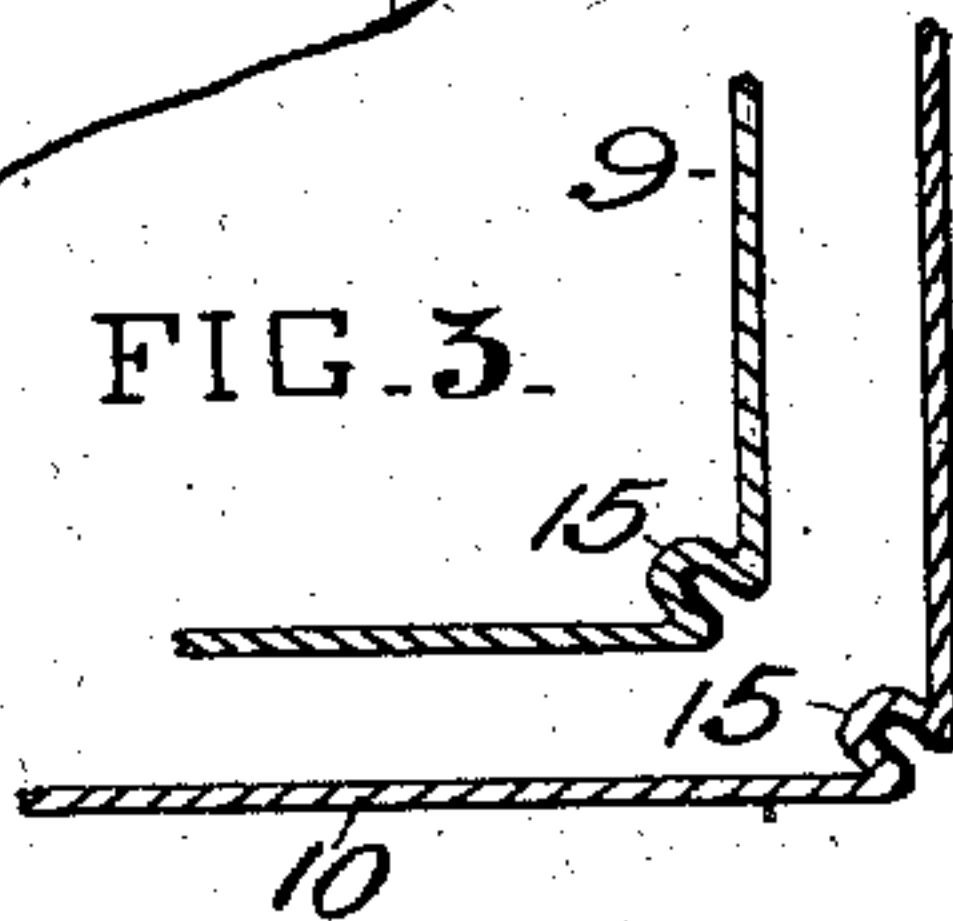


FIG. 3.



WITNESSES:

F. B. Townsend
A. M. Munday

INVENTOR.

Albert G. Scherer
BY *Munday, Porter & Adams*
His ATTORNEYS

UNITED STATES PATENT OFFICE.

ALBERT G. SCHERER, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE EXCELSIOR STEEL FURNACE COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

HOT-AIR PIPE.

SPECIFICATION forming part of Letters Patent No. 724,210, dated March 31, 1903.

Application filed April 19, 1900. Serial No. 13,471. (No model.)

To all whom it may concern:

Be it known that I, ALBERT G. SCHERER, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Hot-Air Pipes, of which the following is a specification.

This invention relates to the construction of the double-wall hot-air pipes used in connection with furnaces for heating houses and other buildings. As is well known, these pipes are usually constructed in sections of tinned sheet metal and either secured together in stacks by the manufacturer or so fashioned that their ends will telescope and permit their being assembled in stacks by the workman who places them in position in the building, and each section is provided with a transverse partition to keep the walls spaced apart. It frequently happens that the stacks are not the proper height to fit the building in which they are placed, and it has heretofore been necessary in such cases either to reduce the height of the stack by cutting off a portion of one of the sections or to add to it a cutting or part of another section. These are objectionable because the partial sections do not have the spreading or spacing partitions at both ends, so that the inner and outer walls of such partial sections are liable to come together, and thus shut off the air circulation in the ventilating-space between the inner and outer walls, which circulation is so necessary to prevent overheating of the outer pipe and the consequent danger of fire. The cutting of the sections is also objectionable, because it requires the taking of accurate measurements, in which there is danger of making mistakes and ruining the cut section.

To obviate the cutting of the pipe-sections and the bad results flowing from the same has been my object in this invention, and I accomplish that end by providing each stack with a transversely-divided section the parts whereof telescope one within the other to the extent required to make the stack fit the building in which it is used.

The nature of this improvement will be

fully understood from the description given below and from the accompanying drawings, in which latter—

Figure 1 is a perspective of a portion of a hot-air-pipe section embodying my improvement, showing parts of the telescoping section and the ordinary full-length section ready to be put together. Fig. 2 is a longitudinal section thereof. Fig. 3 is a transverse section of one corner of the telescoping section.

In said drawings, 20 represents the ordinary stack-section, 3 being the outer pipe, and 4 the inner pipe thereof.

5 is the diaphragm or partition in the upper end of the section for keeping the inner and outer pipes spaced apart, and 6 is the bead supporting said partition and also supporting the outer pipe of the superimposed telescoping or other section. The telescoping section is also double-walled, the upper half or division 21 thereof being composed of inner pipe 7 and outer pipe 8 and the lower half 22 thereof of inner pipe 9 and outer pipe 10. The upper half 21 is provided with a partition 11, like the partition 5, and the lower half with a similar partition 12, the former supported by the bead 13 in pipe 8 and the latter by bead 14 in pipe 9. Bead 14 rests on the top of pipe 4, as plainly shown.

The halves of the telescoping sections are enabled to telescope by making one of them smaller than the other in transverse section for at least a portion of its length, and in my preferred construction I make the pipes of the upper half 21 of the regular size—that is, of the same size as the pipes of the ordinary or full-length section—while both the pipes of the lower half 22 are reduced in size for so much of their length as it is desired may telescope within the upper half, and this is best done by forming longitudinal folds 15, preferably at the corners of the pipes 9 and 10, as indicated at Figs. 2 and 3. These folds bring the upper and main portions of the walls of section 22 within the interior dimensions of pipes 7 and 8 and permit their entrance within the latter. The lower portions of pipes 9 and 10 are full size, so they may receive the

upper ends of pipes 3 and 4. By this construction the two halves of the telescoping section are permitted to expand and contract longitudinally within certain limits, and thus enable the stack to be fitted to buildings whose floors vary many inches in height, and this may be done after the stack is set up without any cutting or measurements. One of the pipes of the lower division is made longer than the other for convenience in assembling the parts of the telescoping section.

Of course I do not wish to be limited to the described method of reducing the size of the telescoping section 22, as such reduction can be obtained in other ways.

It will be noted that in the construction illustrated there is nothing whatever to space, brace, or support the telescoping ends of the two parts of the adjustable section, although the pipes are made of ordinary tin and rectangular in form, so that there are four flat sides. It might be supposed and I have no doubt has been supposed impossible to telescope such pipes and keep the walls properly spaced apart; but I have found that when the two parts of the section are telescoped together their walls brace each other mutually, and thus render a spacing or bracing diaphragm unnecessary for a considerable distance each way from the telescope-point, and this feature makes the telescope-joint a possibility in this class of double-wall flat-sided pipes.

I claim as my invention—

1. The double-wall hot-air stack consisting of the combination of a series of sections hav-

ing connected inner and outer walls, said sections being adapted to fit together end to end by both the inner and outer walls, and a double-wall section made in two halves each arranged to fit and abut at one end a section of said series, said two halves at their other ends being telescopically connected with each other and longitudinally adjustable, substantially as set forth.

2. The combination with the double-wall sections 20, of the double-wall section 21, 22 made in two halves, each shaped at one end to fit and abut one of the sections 20, at their other ends telescopically connected with each other and adjustable, and having at their remote ends connections between their inner and outer walls, substantially as set forth.

3. A flat-sided sheet-metal pipe-section having its corners formed with inwardly-turned compressible bends, whereby the flat sides of the pipe are inwardly yielding.

4. As a means for jointing telescopically sheet-metal pipe-sections, the combination of two such sections composed of flat walls meeting each other at angles, the inner pipe having its corners formed with inwardly-turned compressible bends.

5. A flat-sided section for hot-air stacks consisting of inner and outer walls or pipes and a connecting-diaphragm, the corners of said pipes being formed with inwardly-turned compressible bends.

ALBERT G. SCHERER.

Witnesses:

EDW. S. EVARTS,
H. M. MUNDAY.

DISCLAIMER.

724,210. *Albert G. Scherer*, Chicago, Ill. HOT-AIR PIPE. Patent dated March 31, 1903. Disclaimer filed March 7, 1922, by the assignee, *Excelsior Steel Furnace Company*.

Enters this disclaimer—

"To that part of the claims in said specification which is in the following words, to wit:

"1. The double-wall hot-air stack consisting of the combination of a series of sections having connected inner and outer walls, said sections being adapted to fit together end to end by both the inner and outer walls, and a double-wall section made in two halves each arranged to fit and abut at one end a section of said series, said two halves at their other ends being telescopically connected with each other and longitudinally adjustable, substantially as set forth.

"2. The combination with the double-wall sections 20, of the double-wall section 21, 22 made in two halves, each shaped at one end to fit and abut one of the sections 20, at their other ends telescopically connected with each other and adjustable, and having at their remote ends connections between their inner and outer walls, substantially as set forth."

[*Official Gazette March 21, 1922.*]

upper ends of pipes 3 and 4. By this construction the two halves of the telescoping section are permitted to expand and contract longitudinally within certain limits, and thus enable the stack to be fitted to buildings whose floors vary many inches in height, and this may be done after the stack is set up without any cutting or measurements. One of the pipes of the lower division is made longer than the other for convenience in assembling the parts of the telescoping section.

Of course I do not wish to be limited to the described method of reducing the size of the telescoping section 22, as such reduction can be obtained in other ways.

It will be noted that in the construction illustrated there is nothing whatever to space, brace, or support the telescoping ends of the two parts of the adjustable section, although the pipes are made of ordinary tin and rectangular in form, so that there are four flat sides. It might be supposed and I have no doubt has been supposed impossible to telescope such pipes and keep the walls properly spaced apart; but I have found that when the two parts of the section are telescoped together their walls brace each other mutually, and thus render a spacing or bracing diaphragm unnecessary for a considerable distance each way from the telescope-point, and this feature makes the telescope-joint a possibility in this class of double-wall flat-sided pipes.

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