Feb. 25, 1941. G. F. RUHL 2,233,270

EXTENSIBLE PIPE SECTION

Filed April 11, 1940

Fig. 1

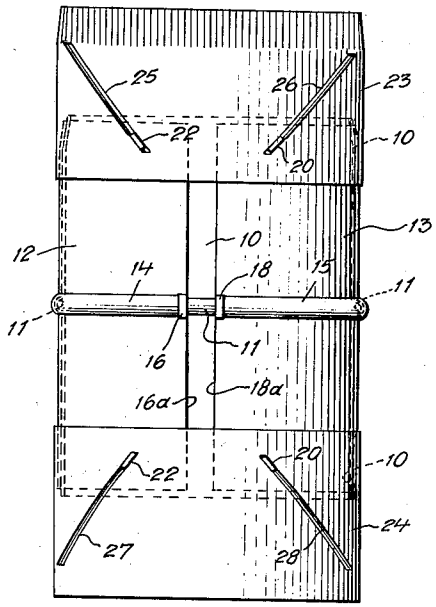


Fig. 2

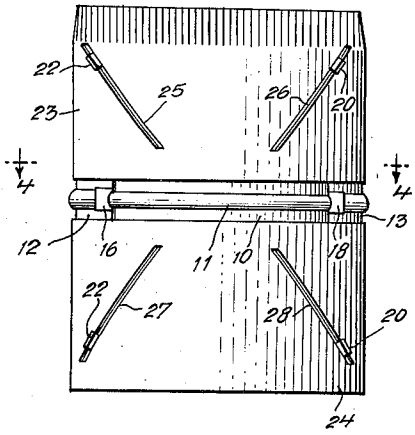


Fig. 5

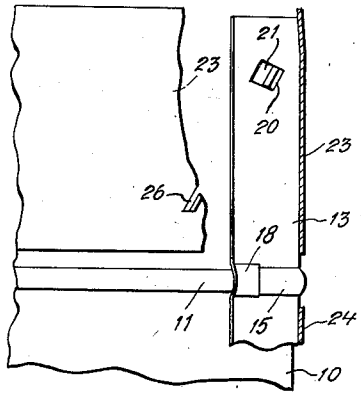


Fig. 3

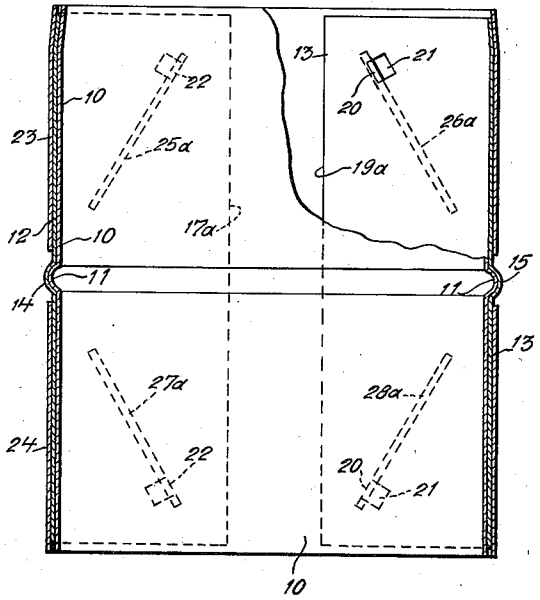
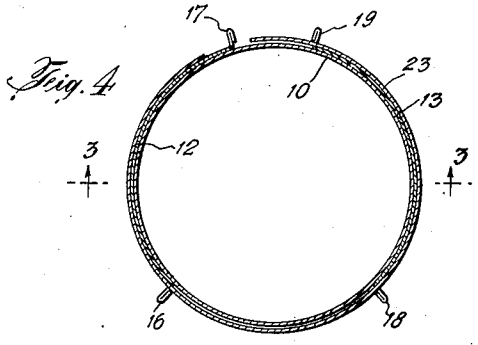


Fig. 4



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EXTENSIBLE PIPE SECTION

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Application April 11, 1940, Serial No. 329,093

3 Claims. (Cl. 285—199)

This invention relates to stove pipes and aims to provide an extensible stove pipe by means of which a length of such pipe may be extended or retracted at will by a very simple manual operation. However, the invention may also be applied in any or every other field in which it would be desirable to provide an extensible pipe or tube section (whether cylindrical or rectangular) after the manner of the invention, and the inventor does not wish to limit the application of the invention to stove pipes.

As shown in the accompanying drawing and described in detail below, the simple pressing together of two of the projecting ears on one side of the pipe will cause elongation of the pipe, and similar pressing together of the opposite two ears will cause contraction of the pipe. The entire extensible pipe is made of only five pieces or sections, and it is apparent that these sections present but a simple problem to the manufacturer. The many uses to which such a pipe could be put are too obvious to require enumeration.

Referring briefly to the drawing,

Figure 1 is a front elevational view of the pipe section, in elongated condition.

Figure 2 is a similar view of the same in retracted condition.

Figure 3 is a cross-sectional view taken on the line 3—3 of Figure 4.

Figure 4 is a cross-sectional view taken on the line 4—4 of Figure 2.

Figure 5 is a fragmentary elevational view, partly in section and with parts broken away, of the pipe section in retracted condition.

Referring in detail to the drawing, the numeral 10 indicates a unitary cylindrical tube having an outwardly extending equatorial bead 11 formed integral therewith. A pair of partic-ylindrically shaped slides 12 and 13 each having a peripheral bead 14 and 15, respectively, lie substantially flush but slidably against the outer surface of the tube 10, with the bead 11 registering within the beads 14 and 15. The bead 11 thus provides a track on which the beads 14 and 15 are adapted to slide. Each of the beads 14 and 15 has, as is apparent, two ends. At its two ends, the bead 14 has outwardly extending lugs or handles 16 and 17, respectively; at its two ends the bead 15 has two similar lugs or handles 18 and 19, respectively.

Near each vertical edge of each slide 12 and 13, ears 20 are anchored by means of their bases 21 (which are at right angles to the ears) in the slides, at the position shown, i. e., the slide 13 has such an ear 20 above the bead 15 and another equidistantly below the bead 15, in a vertical line, near the edge 18*a* of the slide adjacent the handle 18. A similar pair of ears 20 are similarly mounted near the opposite edge 19*a* of the slide 13, as shown in Figure 3. The slide 12 is similarly provided with a like number of similarly spaced ears 22, i. e., two ears 22 near the edge 19*a* and two near the edge 17*a*.

A sleeve 23 slidably surrounds the slides 12 and 13 above the beads 14—15, and a similar sleeve 24 similarly surrounds the slides below the beads 14—15. The sleeve 23 is provided with four slots, of which the two at the front, shown at 25 and 26, incline divergently upward, and the two at the rear, 25*a* and 26*a*, incline divergently downward. Likewise, the sleeve 24 is provided with two slots 27 and 28 which incline divergently downward, at the front, and with two similar slots 27*a* and 28*a*, which incline divergently upward, at the rear. The upper ears 20 and 22 register in the slots 26 and 26*a*, and 25 and 25*a*, respectively, and the lower ears 20 and 22 register in the slots 28 and 28*a*, and 27 and 27*a*, respectively. It is apparent that the ends of the slots 25, 26, 27, 28, 25*a*, 26*a*, 27*a*, and 28*a*, serve as limit stops to the axial movement of the sleeves 23 and 24 toward or away from the beads 14—15.

The operation of the device is as follows. Assuming that the pipe section is in retracted position, as shown in Figure 2, it is elongated by grasping the handles 16 and 18 between the fingers of one hand and drawing them together. As these handles approach each other, they force the ears 20 toward the ears 22, both in the sleeves 23 and in that 24. Thus, the slots 25, 26, etc. act as cam surfaces, and as the ears ride in the slots they force the sleeves 23 and 24 to be projected outward. When fully extended, the handles 16 and 18 lie close to each other, as shown in Figure 1, and the handles 17 and 19 are spread apart. To retract the pipe section to its original position, the handles 17 and 19 are grasped and drawn together into the position shown in Figure 4, whence the reverse action takes place and the sleeves 23 and 24 are drawn toward each other.

It is to be noted, in Figure 3, that the upper peripheries of the sleeve 23, slides 12 and 13, and tube 10 are slightly bent inward. This is done so as to provide a friction contact between the various parts to prevent them from slipping owing to their own weight when the section is any desired extended position.

Obviously, modifications in form and structure

may be made without departing from the spirit and scope of the invention.

I claim:

1. A device of the class described comprising a tube having a peripheral bead extending outward therefrom intermediate its length, a pair of slides concentric with said tube slidably mounted against the outer surface thereof and having aligned beads formed therein, said tube bead registering in said slide beads and serving as a track on which said slide beads are adapted to ride, finger grips on the ends of said slide beads, a pair of sleeves, each of said sleeves being slidably mounted on one end of the device with its inner surface lying slidably against the outer surfaces of said slides, divergent slots in one of said sleeves, oppositely divergent slots in the other of said sleeves, and ears on said slides registering in said slots.

2. A device of the class described comprising a tube having a peripheral bead extending outward therefrom intermediate its length, a pair of slides concentric with said tube slidably mounted against the outer surface thereof and having aligned beads formed therein, said tube bead registering in said slide beads and serving as a track on which said slide beads are adapted to ride, finger grips on the ends of said slide beads, a pair of sleeves, each of said sleeves being slidably mounted on one end of the device with its inner surface lying slidably against the outer surfaces of said slides, divergent slots in one of said sleeves, oppositely divergent slots in the other of said sleeves, and ears rigid on said slides registering in said slots, said ears comprising angle-shaped members each having a base anchored in said slides and a wing portion projecting through the slot.

3. A device of the class described comprising a tube having a peripheral bead extending outward therefrom intermediate its length, a pair of slides concentric with said tube slidably mounted against the outer surface thereof and having aligned beads formed therein, said tube bead registering in said slide beads and serving as a track on which said slide beads are adapted to ride, finger grips on the ends of said slide beads, a pair of sleeves, each of said sleeves being slidably mounted on one end of the device with its inner surface lying slidably against the outer surfaces of said slides, divergent slots in one of said sleeves, oppositely divergent slots in the other of said sleeves, and members on said slides registering in said slots.

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