(No Model.) 2 Sheets—Sheet 1.

J. NUTTALL.

PIPE COUPLING.

No. 303,231. Patented Aug. 5, 1884.

Fig. 1.

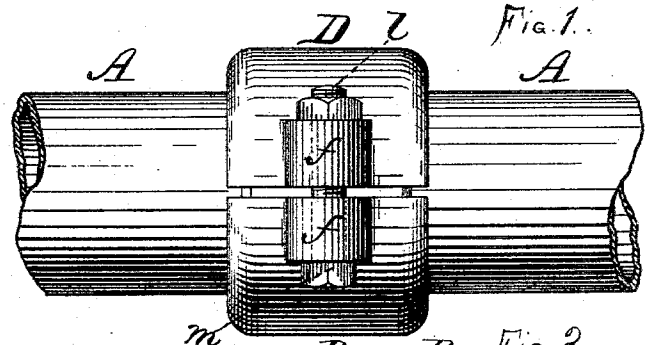


Fig. 2.

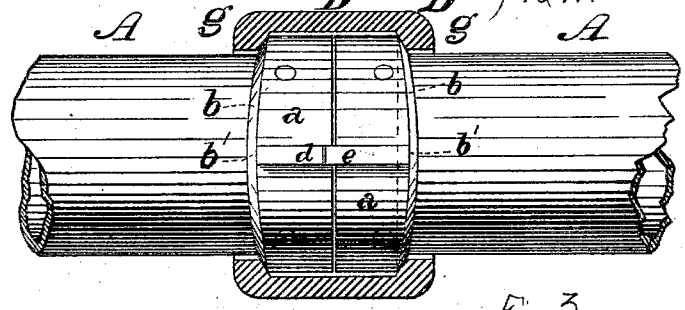


Fig. 3.

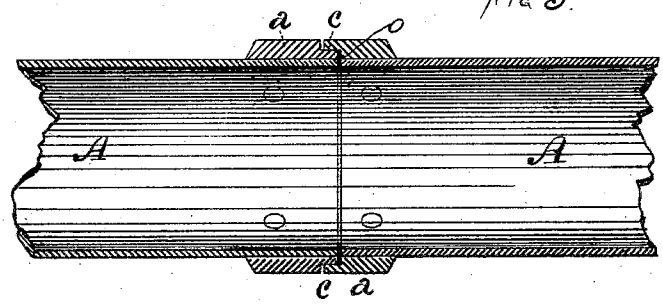
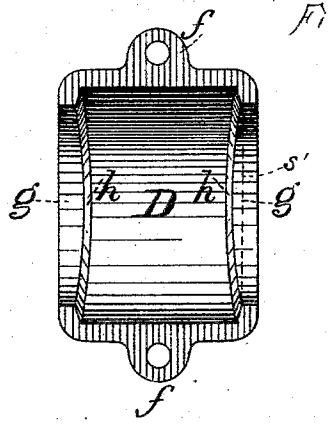


Fig. 4.



WITNESSES:

R. F. Whittlesey,

L. M. Clarke.

INVENTOR

Joshua Nuttall.

By George H. Christy atty.

N. PETERS, Photo-Lithographer, Washington, D. C.

(No Model.) 2 Sheets—Sheet 2.

J. NUTTALL.

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Fig. 5.



WITNESSES:

Dennis S Wolcott

J. Snowden Bell

INVENTOR.

Joshua Nuttall

BY George H. Christy

his ATTORNEY.

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

JOSHUA NUTTALL, OF PITTSBURG, PENNSYLVANIA.

PIPE-COUPLING.

SPECIFICATION forming part of Letters Patent No. 303,231, dated August 5, 1884.

Application filed February 2, 1884. (No model.)

To all whom it may concern:

Be it known that I, JOSHUA NUTTALL, a citizen of the United States, residing at Pittsburg, county of Allegheny, State of Pennsylvania, have invented or discovered a new and useful Improvement in Pipe-Couplings; and I do hereby declare the following to be a full, clear, concise, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—like letters indicating like parts—

Figure 1 is a view in side elevation showing two sections of pipe united by my improved coupling. Fig. 2 is a similar view showing the coupling-sleeve in section. Fig. 3 is a longitudinal vertical section of two sections of pipe placed together preparatory to applying the coupling-sleeve. Fig. 4 is a view showing the inside of one section of the coupling-sleeve. Fig. 5 is a side view of a spiral take-up spring.

Pipe-couplings of the class to which my improved coupling pertains have consisted of a shoulder formed or secured on the ends of the pipe-sections and a sleeve or collar placed on the pipe back of the shoulder, said collar being provided with lugs, through which are passed bolts for drawing the collars against the shoulders and the ends of the two sections of pipe into close contact; but as these collars are formed of cast-iron, it frequently happens that the lugs are broken off in drawing the two sections of pipe together, or by the expansion of those sections after they have been drawn together.

The object of my invention is to so construct the coupling that the lugs on the binding-sleeve will not be subjected to the direct strain of drawing the sections together; and to this end my invention consists in the construction and combination of parts, all as more fully hereinafter described and claimed.

On the ends of two pipe-sections, A, I form or secure, in any suitable manner, the collars *a*. The outer edges of these collars are provided with double-spiral inclines *b*, having their apices *b'* on diametrically-opposite sides of the pipes. The meeting edges of these collars *a* are so formed as to lap by each other, as shown at *c*, and one of the collars is formed with a recess, *d*, into which a tongue, *e*, on the collar of the adjoining section is adapted to fit, so as to bring the two sections of pipe and their collars into proper relation with each other—that is, with the apices *b'* of one collar in line with those of the other collar—as clearly shown in Fig. 2.

The coupling-sleeve D is made in any desired number of sections, preferably two, counterparts of each other, and provided with lugs *f*, by which to draw the two parts together; but in place of attaching one part of the sleeve to one section and the other part to another section, and depending on the lugs to hold the parts together, I so form each part as to extend from one section of pipe to the other, spanning the joint between the two sections of pipe, and form on the inner edges of the parts inwardly-projecting flanges *g*, which are adapted to fit over the edges of the collars *a* on the pipe-sections. These flanges *g* are spirally inclined on their opposing faces *h*, similar to the inclines *b* of the collars *a*.

To join two sections of pipe, the sections are placed together as shown in Fig. 2, the tongue *e* on one fitting into the recess *d* on the other. The parts of the sleeve D are then so adjusted in place as to bring the apices of the inclines *b* at the lowest point of the inclines *h* of the sleeve. The bolt *l* is then passed through the lugs *f*, and the two parts of the sleeves are drawn together by the nuts *m*. As the two parts of the sleeve are drawn together, the inclines of the flange *g* slide over the inclines of the collar *a*, and thereby tightly draw the two sections together.

It will be observed that in my coupling the direct strain of drawing the sections of pipe together is not borne by the lugs, but by the body of the coupling where it is strongest, and that the strains due to expansion are also borne by the same part. Rubber or steel springs *m*, Fig. 5, may be placed between the bolt-head and the lug, which will allow the parts of the sleeve to separate, to compensate for expansion, and will draw the parts together when the pipes contract, thereby insuring a tight joint at all times. In placing the two sections of pipe together a lead washer, *o*, or any other suitable packing, is placed between their meeting faces to pack the joint.

In place of having the outer edges of both of the collars inclined, as at *b*, only one of said

collars may be so inclined, the outer edge of the other collar being made straight, as indicated by dotted line *s*, Fig. 2. In that case the inner face of only one of the flanges *g* of the sleeve would be inclined, the inner surface of the other flange being formed straight, as indicated by dotted line *s'*, Fig. 4. I prefer, however, to form inclines on both collars and flanges, as in such construction the strain of tightening the joint is equally borne by each, and by inclining or beveling both the collars and flanges I obtain an equal bearing-surface entirely around the pipe.

I claim herein as my invention—

1. The pipe-sections A, provided with collars at their ends, in combination with the sectional sleeve D, having inwardly-projecting flanges, said sections being adapted to be drawn together at their adjoining ends, substantially as set forth.

2. In a pipe-coupling, the sectional sleeve D, provided with flanges *g*, spirally inclined, as described, on their interior faces, in combination with collars *a*, correspondingly inclined on their outer edges, substantially as set forth.

3. In a pipe-coupling, the sectional sleeve D, provided with flanges *g*, spirally inclined, as described, on their inner faces, in combination with collars *a*, correspondingly inclined on their outer edges, and provided with recess *d* and tongue *e*, substantially as set forth.

4. The combination of the pipe-sections A A, provided with collars *a*, having their outer edges constructed as described, and the sectional sleeve D, provided with flanges correspondingly constructed at their inner edges, whereby said pipe-sections may be drawn into close contact when the sleeve-sections are closed around the same, substantially as set forth.

In testimony whereof I have hereunto set my hand.

JOSHUA NUTTALL.

Witnesses:
R. H. WHITTLESEY,
C. M. CLARKE.