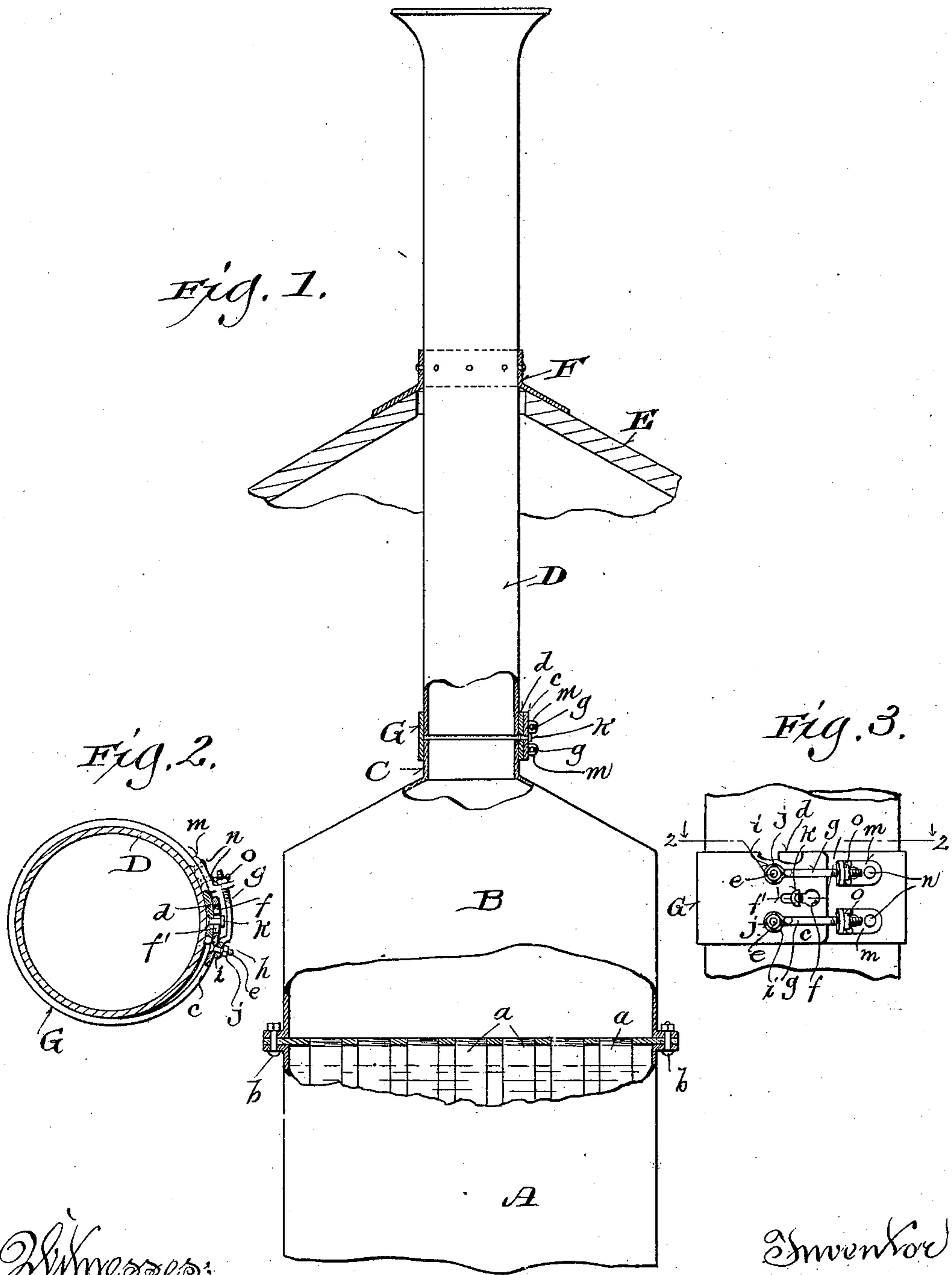


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Patented Nov. 6, 1900.

B. MITCHEL.
SMOKE STACK COUPLING.
(Application filed Aug. 21, 1899.)

(No Model.)



Witnesses:
Geo. W. Young,
B. C. Roloff.

Inventor
Birtrum Mitchel,
By H. G. Underwood,
Attorneys

UNITED STATES PATENT OFFICE.

BIRTRUM MITCHEL, OF OCONOMOWOC, WISCONSIN.

SMOKE-STACK COUPLING.

SPECIFICATION forming part of Letters Patent No. 661,186, dated November 6, 1900.

Application filed August 21, 1899. Serial No. 727,938. (No model.)

To all whom it may concern:

Be it known that I, BIRTRUM MITCHEL, a citizen of the United States, and a resident of Oconomowoc, in the county of Waukesha and State of Wisconsin, have invented certain new and useful Improvements in Smoke-Stack Couplings; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention has especial reference to couplings for the smoke-stacks of vertical stationary boilers; and it consists in certain peculiarities of construction and combination of parts, as will be fully set forth hereinafter and subsequently claimed.

In the drawings, Figure 1 is an elevation, partly broken away or in section, showing my invention applied to the smoke-stack of a vertical boiler. Fig. 2 is a horizontal sectional view taken on the line 2 2 of Fig. 3. Fig. 3 is a detail elevation showing my device fastened in place on a smoke-stack.

Heretofore the cleaning of the flues of a vertical stationary boiler has been a matter of considerable inconvenience; and the principal object of my present invention is to obviate this difficulty, although my said invention is applicable wherever a divided smoke-stack or smoke-pipe may be employed.

Referring to the drawings, A represents the upper part of a vertical steam-boiler of the ordinary type, having the usual vertical flues *a a*. B represents the dome of said boiler, resting on the upper end of the latter, to which it is removably secured by bolts *b b* passing through flanges on the dome, the said bolts having proper nuts on their upper outer ends for the ready attachment or detachment of the said dome when required.

C represents the lower short section of the smoke-stack, made rigid with the dome, and D the upper and principal part of the said smoke-stack, shown passing through the roof E over the boiler, said stack D being suspended from said roof by means of the collar F, secured to the stack and resting on the upper surface of the said roof, as shown, so that the opposing end edges of the sections C D of the smoke-stack will be slightly separated.

G represents the collar of my coupling, the same consisting, preferably, of a strip of galvanized iron having overlapping ends *c d*.

The end *c* is provided with two screw-bolts *e e*, passing therethrough, and is further formed with a keyhole-slot *f f'* on a line intermediate of the said bolts. A pair of screw-bolts *g g* are formed with their unthreaded ends shouldered or offset, as shown at *h*, said ends being free from the ordinary bolt-heads; but in place thereof each bolt end is bent into a coil or ring *i* to receive and snugly fit around the described screw-bolts *e*, to which said ends are tightly secured by nuts *j j*. The end *d* of the collar G has secured thereto a headed rivet *k*, the head of said rivet being of a size to slip through the large end *f* of the keyhole-slot in the end *c* of the collar, and the shank of said rivet being of the proper diameter to move in the narrower part *f'* of said slot when the two ends are put together, as shown in Figs. 2 and 3. At a little distance back from and on each side of said headed rivet *k* the end *d* of the collar G is provided with two angle-plates *m m*, which are secured to the collar end by rivets *n n*, the projecting ends of said plates *n* having holes therethrough for the reception of the threaded ends of the described bolts *g g*, the two ends *c d* of the collar G being drawn together and tightened to place around the divided sections C D of the smoke-stack by means of the thumb-nuts *o o* on the ends of said bolts *g g*.

When it is desired to clean the vertical flues *a a* of the boiler, the thumb-nuts *o o* are loosened and the collar G slipped on one of the sections of the divided smoke-stack above or below the line of separation and the bolts *b b*, which secure the dome B to the boiler A, removed, and then the said dome, with its attached lower section C of smoke-stack, is bodily slid off the top of the boiler, and all of the flues *a a* are exposed, so as to be readily and quickly cleaned by any suitable appliance, after which the dome is replaced and fastened to the boiler and the collar G restored to its former position and tightened to place, as before, this last operation being quickly performed and with the described thumb-nuts *o o* not even requiring the use of a wrench in the loosening and tightening of said collar. If desired, the nuts on the bolts *b b* may also be thumb-nuts.

My invention will be found of great convenience and utility to stationary engineers

for the purpose described and, as stated, is also capable of general use wherever divided smoke stacks or pipes are employed.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination with a divided smoke-stack, the sections of which are held out of contact with each other, of a sheet-metal split collar, having overlapping ends, surrounding the said smoke-stack, and covering the space between the said two separated sections thereof, one of said ends having a projecting headed rivet, and the other of said ends being provided with a keyhole-slot for the reception of said headed rivet, whereby the said ends are adjustably held together in an overlapped position, together with suitable means for diminishing the circumference of said collar, while the ends are thus held together.

2. In a removable split collar, the combination with an integral band of sheet metal bent into tubular form, with overlapping ends, of

a pair of angle-plates secured to one of said ends, the free projecting portions of said angle-plates having round smooth-bored perforations therethrough; a pair of screw-bolts formed with their unthreaded ends shouldered or offset, and said shouldered ends being bent into a coil or ring, and rigidly and immovably secured by screw-bolts and nuts to the other of said overlapping ends, with the threaded ends of said first-named screw-bolts projecting in line with the described perforations in said angle-plates; and tightening-nuts for engagement with said projecting threaded ends after the same have passed through the perforations in said angle-plates.

In testimony that I claim the foregoing I have hereunto set my hand, at Milwaukee, in the county of Milwaukee and State of Wisconsin, in the presence of two witnesses.

BIRTRUM MITCHEL.

Witnesses:

H. G. UNDERWOOD,
B. C. ROLOFF.