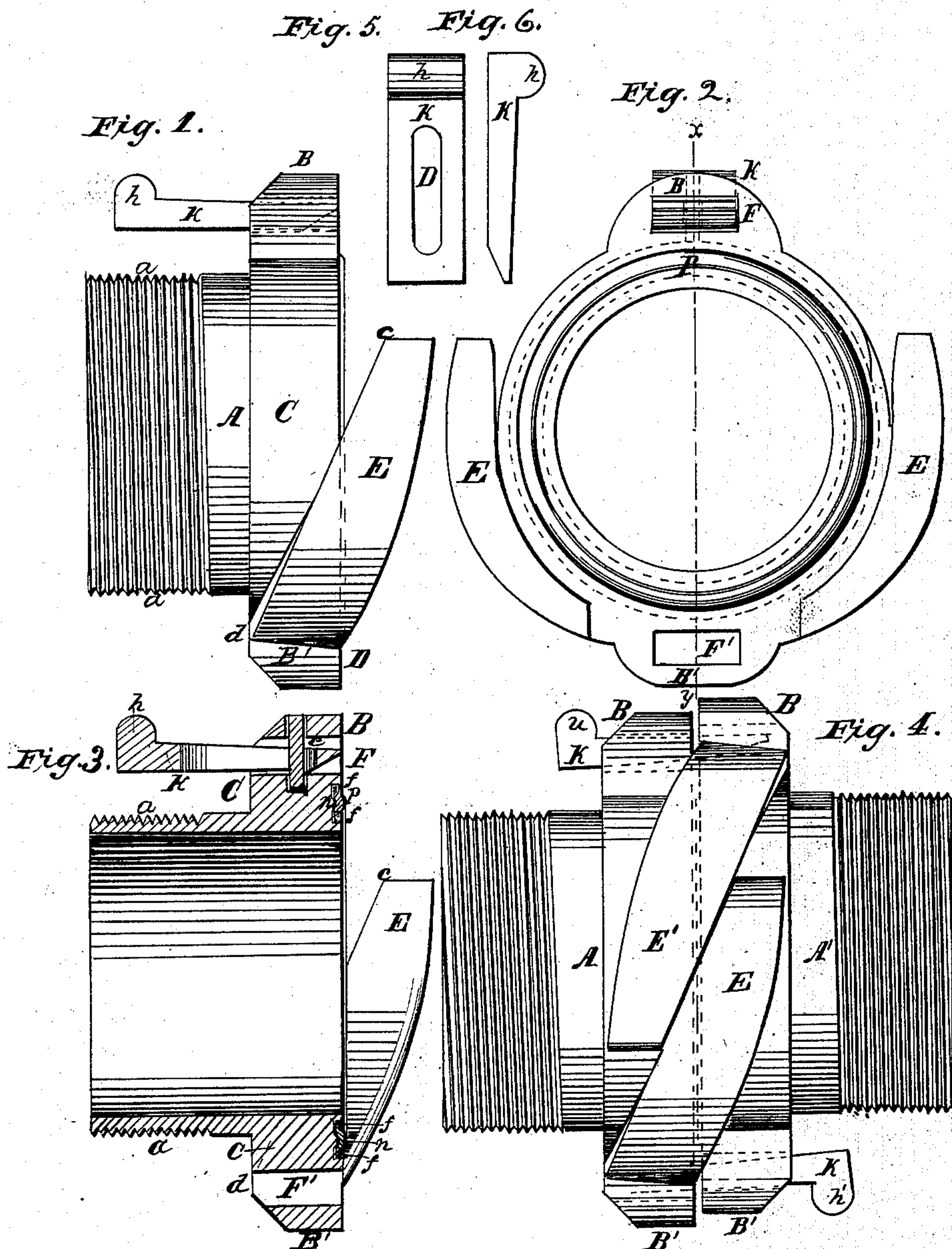


Perkins & Hovey,
Hose Coupling,
No 68,650, *Patented Sept. 10, 1867.*



Witnesses:
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United States Patent Office.

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Letters Patent No. 68,650, dated September 10, 1867.

IMPROVEMENT IN HOSE-COUPLING.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that we, DUANE T. PERKINS and CHARLES F. HOVEY, both of Springfield, in the county of Hampden, and Commonwealth of Massachusetts, have invented a new and improved Hose-Coupling; and we do hereby declare that the following is a full and exact description thereof, reference being had to the annexed drawings, making a part of this specification, and to the letters of reference marked thereon, whereof—

Figure 1 is a side elevation of one of the two similar portions of said hose-coupling.

Figure 2 is an elevation of the same.

Figure 3 is a longitudinal vertical section through the line X Y, fig. 2.

Figure 4 is a side elevation of said hose-coupling, showing the two portions locked together for use; and

Figures 5 and 6 are respectively a front and side elevation of the slotted key.

The nature of our invention consists in constructing a metallic hose-coupling, composed of two corresponding and similar portions, which portions are designed to be applied to the ends of sections of hose or tubing, for the purpose of connecting the ends of such sections together, and forming a firm and water-tight joint at the point of such connection. Our invention relates particularly to the means by which the two similar portions of the coupling can be interlocked and afterwards keyed firmly in place, and also to the method of applying a suitable packing to the meeting faces of such portions.

The construction of our invention is as follows: A complete coupling consists of two portions which are precisely similar, and the main parts of which are or can be cast in the same mould, and all parts fitted and finished alike, so that one portion of said coupling is in every respect a duplicate of the other. In fig. 1 is shown one of the portions A of such hose-coupling, which is in the form of a hollow cylinder, having its inner surface smoothly finished. A male screw-thread, *a a*, is cut upon a portion of its length at one end, and a ring or annular projection, C, is formed upon the opposite end, from which projection extend the ears or inclined lugs E E, and the parts B B', in which are placed the key-seats F F'. The end of A upon which is cut the screw-thread *a a* is inserted in the end of the hose, which latter is encompassed by a sleeve of brass or other metal, the screw-thread serving as a ready means of causing the cylinder A to enter the hose as far as the projection C. The method of attaching the coupling to the hose as described, is not set forth as a part of our invention, and the conformation of the entering end of A in this regard is not material to the use of our invention, many methods of attaching couplings to hose being now in use which are equally adapted to be employed with our improved coupling. Two ears or lugs E E are formed upon the ring C, the position and conformation of which are shown in figs. 1 and 2. A plane surface, of width sufficient for a durable bearing surface, is formed upon the inner side of E, extending from *c* to *d*, and a similar face is formed upon the corresponding ear E, on the opposite side of C, the two ears E E, upon the portion A, being formed in the same manner. The remaining surface of the ears E E is finished so as to insure sufficient strength for holding securely when interlocked, and for withstanding the violent usage to which hose-couplings are subjected when in use. Instead of a plane surface, we have formed a bearing surface curved from *c* to *d*, but prefer the plane surface as shown in the drawings. The angle of inclination of the bearing surface *c d* on each ear to the diametric plane of the cylinder A, is intended to be such that the bearing surfaces of the two ears which interlock, shall slide readily upon one another, and at the same time draw the two portions of the coupling closely together end to end. To force the interlocking ears to place, and there secure them, we employ slotted keys of the form shown in figs. 5 and 6. One key is attached to each portion of the coupling, and is made of smoothly-finished metal, having a head, *h*, formed at one end for convenience of driving in and out, and being "chamfered" or bevelled at the other end. A slot, D, is formed in the key, extending nearly from end to end. A projection, B, rises from the ring C, of sufficient size to allow the rectangular prismatic opening F to be formed in it, of proper shape to allow the key K to slide freely in it. The upper and lower sides of the opening F are made parallel to the axis of the cylinder A, but may be constructed slightly oblique to such axis. The slotted key K is introduced into the opening F, with the head *h* towards the screw-threads *a a*, and held in place by a pin or screw, *e*, passing through the slot D and seated in B and A. A similar opening, F', is made in a similar projection, B', which is formed upon

the ring C diametrically opposite to B, but no key is attached to B', which only furnishes a socket into which a key is driven from the other portion of the coupling.

Having described the construction and arrangement of the devices for interlocking and securing in place the two portions of our improved coupling, we next describe the method of applying packing to the same for the formation of a water-tight joint. In the end of the cylinder A which is applied to the end of the other portion of the coupling, an annular channel, *f n f*, of peculiar shape, is formed, to receive the packing *p*. For use as packing, we employ vulcanized rubber, but any flexible packing material made in the form of sheets or thin strips may be used for the purpose. The two edges of a strip, *p*, of packing, of suitable width and thickness, are inserted in the annular channel, and the strip is then pressed into place, so that the edges are forced towards the sides of the channel at *f f*. The small projection *n* in the middle of the channel serves to press out the packing in the middle of the channel beyond the face of the end of A. If the packing is of proper width and thickness, it remains firmly in place in the channel, and cannot be removed without effort, while the outer face of it is smooth, uniform, and durable. Any wear of the bearing surfaces of the ears E E is readily compensated for by removing the packing *p* and inserting a wider strip, so that the face of the packing will project more from the face of A. It has been before stated that the two portions of the coupling are constructed in form and manner precisely similar, and the two portions A and A' appear in fig. 4 as applied to one another, being interlocked by means of the ears E E' on each side of A and A', and forced closely together and secured by means of the keys K K, which are driven home, the line of contact of the packing faces being at the dotted line between the ends of A and A'. When one portion A is applied to the other portion A', it is evident that the position of one portion will be the reverse of the position of the other.

The operation of our invention is as follows: The portions A are attached to the ends of sections of hose, and fastened permanently to such sections, and are then ready for use. The keys are to be driven in sufficiently to hold the parts closely together, and can be readily displaced by striking with a hammer on the rear of the projection *h*. The driving of one key is generally sufficient to hold the parts of the coupling in close contact.

Some of the advantages of our invention may be stated as follows: It combines simplicity, cheapness of construction, and strength, from its conformation and the few parts of which it is composed, and when properly constructed is not liable to be disarranged or disabled, and possesses a great degree of durability. The two portions are applied to one another and interlocked with readiness, the formation of the ears being such as to guide the parts into proper position, so that a section of hose through which water is flowing with full force can be attached to an empty section in the shortest possible time, and by any inexperienced person. The two portions being duplicates, either end of a section of hose can be applied to either end of another section, whereas in most of the couplings now in use the two portions which meet are of different form, or male and female, so that only one end of a section can be applied to a corresponding end of another section, and a piece of hose has frequently to be reversed when taken from the hose-carriage before it can be coupled to the hose already laid down. The key being attached to the coupling by the pin can never become lost or displaced, as if an independent device, or attached by a chain or cord. The simplicity and durability of the method of applying the packing is a matter of great importance in connection with hose-couplings, which are frequently rendered imperfect or useless for the time being by the failure of the packing.

Having described our invention, what we claim as new therein, and desire to secure by Letters Patent, is—

1. The fixed ears or inclined lugs E E, formed upon the parts of a hose-coupling for interlocking and holding such parts in contact, substantially as described.
2. A hose-coupling formed of the part A and duplicate part A', each having two ears or inclined lugs thereon, as described, in combination with the slotted keys K, pins *e*, and key-seats, the whole constructed and operating substantially as set forth.
3. The method of applying packing to a hose-coupling, by means of the channel *f n f*, and packing *p* inserted therein, substantially as set forth.

Witness our hands this 25th day of May, A. D. 1867.

DUANE T. PERKINS,
CHARLES F. HOVEY.

Witnesses:

OGDEN GRISWOLD,
J. BIRNES.