

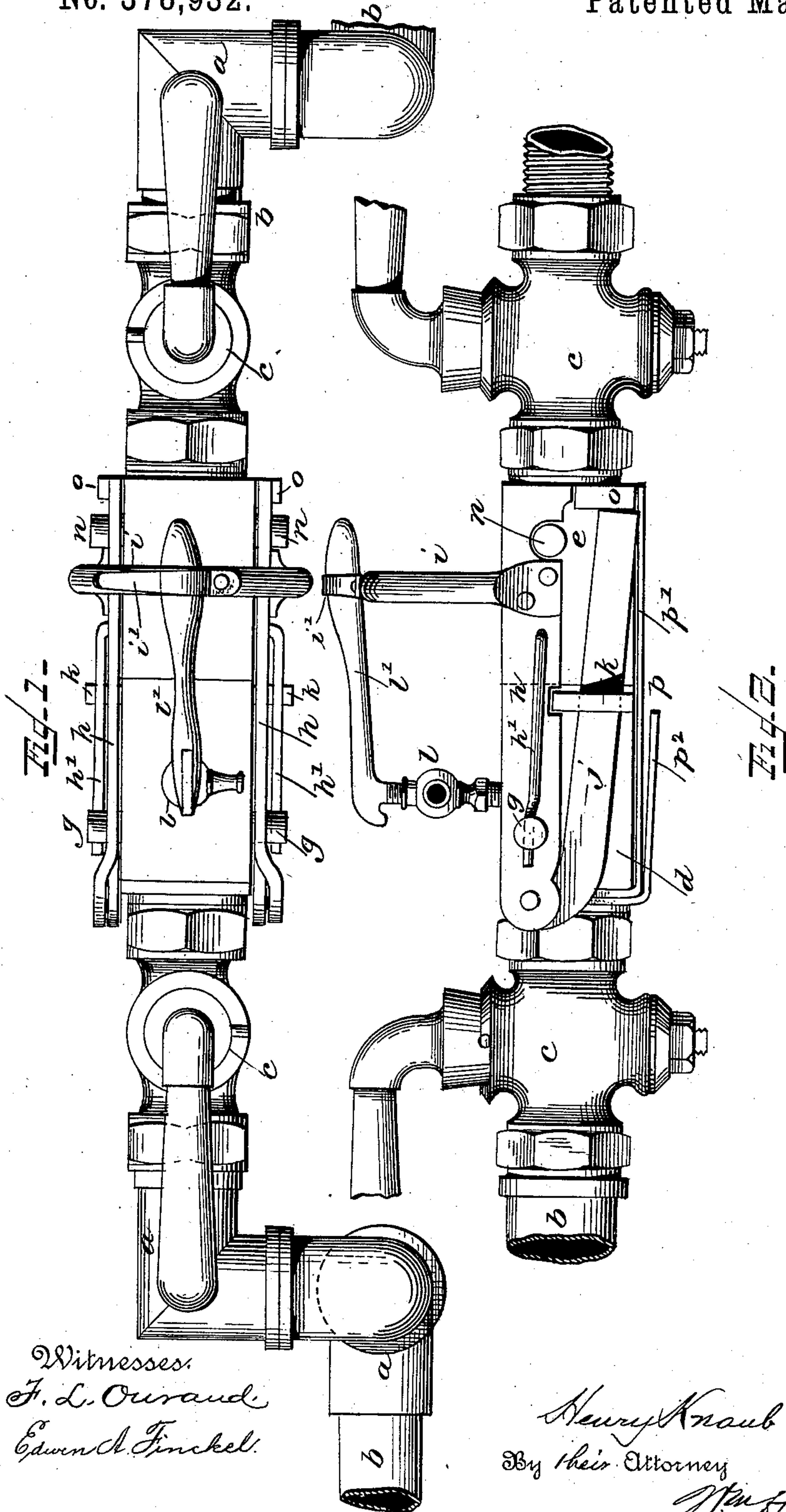
(No Model.)

2 Sheets—Sheet 1.

H. & G. KNAUB.
COUPLING FOR STEAM PIPES.

No. 378,932.

Patented Mar. 6, 1888.



Witnesses,
F. L. Ouraud,
Edwin A. Finckel.

Inventors,
Henry Knaub & George Knaub,
By their Attorney
Wm. H. Finckel

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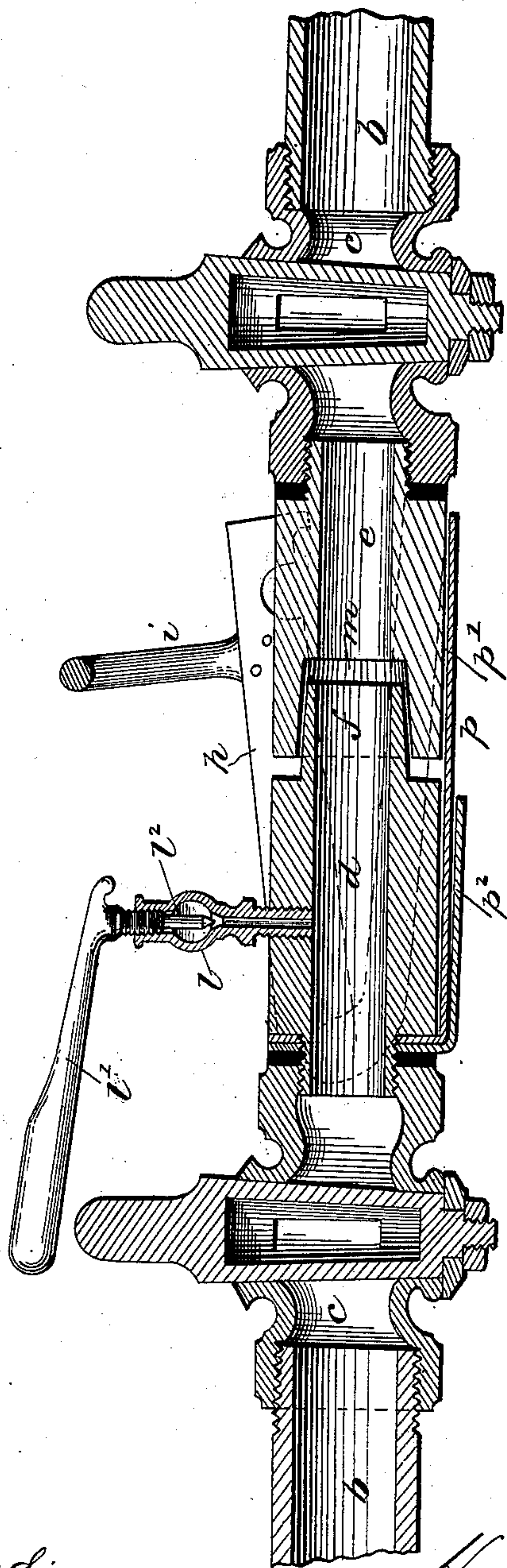


Fig. 3.

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UNITED STATES PATENT OFFICE.

HENRY KNAUB, OF YORK, AND GEORGE KNAUB, OF SPRING GARDEN,
PENNSYLVANIA.

COUPLING FOR STEAM-PIPES.

SPECIFICATION forming part of Letters Patent No. 378,932, dated March 6, 1888.

Application filed May 14, 1887. Serial No. 238,210. (No model.)

To all whom it may concern:

Be it known that we, HENRY KNAUB, a citizen of the United States, residing at York, in the county of York, in the State of Pennsylvania, and GEORGE KNAUB, a citizen of the United States, residing at Spring Garden township, in the county of York and State of Pennsylvania, have invented a certain new and useful Improvement in Couplings for Steam-Pipes, of which the following is a full, clear, and exact description.

The object of this invention is to provide means for connecting between the cars steam-pipes used in steam-heating apparatus for railway-cars, though the invention is equally applicable for other heating agent used for this purpose, and is generally applicable as a coupling for pipes where it is desired to periodically or occasionally connect and disconnect the pipes at intervals in their length.

For the sake of conciseness the invention will be described as applied to a system of steam-heating for railway-cars where the pipes on adjacent cars are connected between adjacent ends of said cars.

The invention comprises male and female coupling-heads provided with means for locking them together, which locking means assists in the act of their unlocking to disconnect the coupling-heads, the construction and operation being substantially as hereinafter more particularly set forth and claimed.

In the accompanying drawings, in the several figures of which like parts are similarly designated, Figure 1 is a plan of a connected coupling, showing, also, one form of jointed pipe-connections. Fig. 2 is a side elevation, omitting the pipe-connections; and Fig. 3 is a longitudinal section, also omitting the pipe-connections, and showing the coupling-heads separated as they will be by the act of unlocking.

For the sake of clearness it will be assumed that the coupling is to be applied to a steam-heating apparatus in which the steam-pipes pass underneath the platforms of the cars. The ends of the pipe of each car will be supplied with suitably-jointed, and hence flexible, connections, herein shown as unions *a* and sections of pipe *b* and ordinary cocks or turning-

plugs, *c*, for closing the pipes when the car is disconnected. Opposite ends of the car will be supplied with male and female coupling-heads *d e*, respectively. The male head *d* is by preference a square or angular box having a tapering nozzle, *f*. Lugs *g* project laterally from the sides of the male head, and to these lugs are pivoted hooks *h*, which project beyond the end of the head on either side thereof, and are connected by a bow-handle, *i*, so as to be moved together, said bow-handle being rigid. The rear ends of these hooks project beyond the lugs *g*, and are extended downwardly and below the said lugs, and to said projecting ends are pivoted the arms *j*, which likewise extend beyond the face of the male head, and are supported in position by means of loops *k* on the sides of the male head. A vent-cock, *l*, is arranged in the upper part of the male head, and is provided with a handle, *l'*, to operate the needle-valve in said cock by rotation. For the sake of clearness it may be here said that this vent-cock and its needle-valve are of ordinary construction; but in order to make the description exact it may be said that the needle-valve has a screw-threaded stem, *l''*, which engages a screw-threaded opening in the vent-cock shell, and the handle *l'* is rigidly affixed to said screw-threaded stem at right angles thereto and projects forward to engage a spring-clip, *i'*, on the bow-handle *i*, to close the valve when the coupling-heads are united, and by disconnecting said handle *l'* from the said clip and turning it backward a quarter-revolution the needle-valve is raised from its seat to permit the escape of the fluid from the coupling and relieve the pressure in uncoupling the device.

It may as well be stated here that the object in providing the vent-cock needle with the connection with the bow-handle *i* is to hold down said bow-handle and its attached hooks *h* to lock the hooks in engagement with the female head, as shown in Figs. 1 and 2. We do not limit ourselves to this precise form of vent-cock. The hooks *h* are provided with springs *h'*, which are connected to the lugs *g* in such manner as to tend to throw up and disconnect the hooks when the bow-handle of said hooks is released from engagement with

the vent-cock needle *l*, to thus assist in disconnecting the coupling-heads. The female head *e* is likewise a square or angular box, and is provided with a socket, *m*, to receive the nozzle *f* of the male head. On the sides of the female head are arranged lugs *n* in line to be engaged by the hooks *h* of the male head. This female head is also provided with abutments *o* in line with the arms *j*, and these abutments are located on the female head relatively to the male head at points less than the length of the throw of said arms when they are moved by raising the hooks *h*; hence when the hooks are raised and the coupling-heads brought together the abutments *o* will strike the ends of the arms *j*, and thereby cause said arms to act upon the hooks *h* and throw down said hooks into position to engage the lugs *n* on the female head *e*, the further and effectual engagement of said hooks with said lugs being effected by manual pressure or a blow in a downward direction upon the bow-handle *i*. When the hooks are thus engaged with the lugs *n*, the vent-cock needle is turned around and made to engage with the spring-clip on the bow-handle *i*, to thus lock the hooks, and consequently lock the male and female heads together. To uncouple the heads the handle *l'* is rotated a quarter-turn, so as to disconnect it from the spring-clip on the bow-handle, when the springs *h'* are free to assist in throwing up the hooks *h*, and then by an upward pull on the bow-handle *i* the said hooks are disengaged from the lugs *n*, the arms *j* are moved forward toward abutments *o*, and, acting upon said abutments, force the female head away from the male head, thus assisting in the uncoupling of the device.

It is preferred to provide a way or guide for the female coupling in connecting it with the male coupling, and for this purpose the male coupling may be provided in any suitable manner with a forwardly-projecting shelf, *p*, extending from its lower surface. One form of such shelf, as herein shown, consists of a right-angled plate, *p'*, having a supporting-bracket, *p''*, both attached to the pipe-connection with the male head. These parts *p'* *p''* may be conveniently made of spring-steel. They may be attached to the male head in any suitable manner, either that shown or any other.

What we claim is—

1. A pipe-coupling composed of a male and a female head, combined with hooks pivoted to the male head and engaging lugs on the fe-

male head, and arms connected to the said hooks and projecting forwardly to engage the female head to assist in uncoupling the male and female heads, substantially as described.

2. A pipe-coupling comprising a male and a female head, hooks pivoted to the male head and extending forwardly, lugs on the female head with which the hooks engage, arms connected to the hooks below the pivotal points of the latter and projecting forwardly, and abutments on the female head located at a point short of the throw of the said arms, substantially as described.

3. A pipe-coupling composed of a male and a female head, combined with hooks pivoted to the male head and engaging lugs on the female head, springs connected to the hooks and tending to elevate them, a locking device to retain the hooks in engagement with the said lugs, and arms connected to the said hooks and projecting forwardly to engage the female head to assist in uncoupling the male and female heads, substantially as set forth.

4. The male and female heads, the former provided with pivotal hooks and the rigid bow-handle connecting them, and the latter provided with lugs with which the said hooks engage, a vent-cock having a rigid handle, and a spring-clip on the bow-handle for connecting the handle and bow-handle, substantially as described.

5. A pipe-coupling composed of a male head having a tapering nozzle and a female head having a tapering socket to receive said nozzle, hooks pivoted to the male head and engaging lugs on the female head, and arms connected to the said hooks and projecting forwardly to engage the female head to assist in uncoupling the male and female heads, all combined substantially as set forth.

6. In a pipe-coupling, a male and a female coupling-head, combined with a spring shelf or guide composed of the right-angled plate *p'* and the supporting-bracket *p''*, projecting forwardly from the male head to direct the female head in effecting the coupling of the two, and means for holding the two heads in connection, substantially as described.

In testimony whereof we have hereunto set our hands this 12th day of May, A. D. 1887.

HENRY KNAUB.
GEORGE KNAUB.

Witnesses:

M. L. EBERT,
E. S. CRONE.