WILSON & ERWIN.

Car Coupling.

No. 50,994. Patented Nov. 14, 1865.

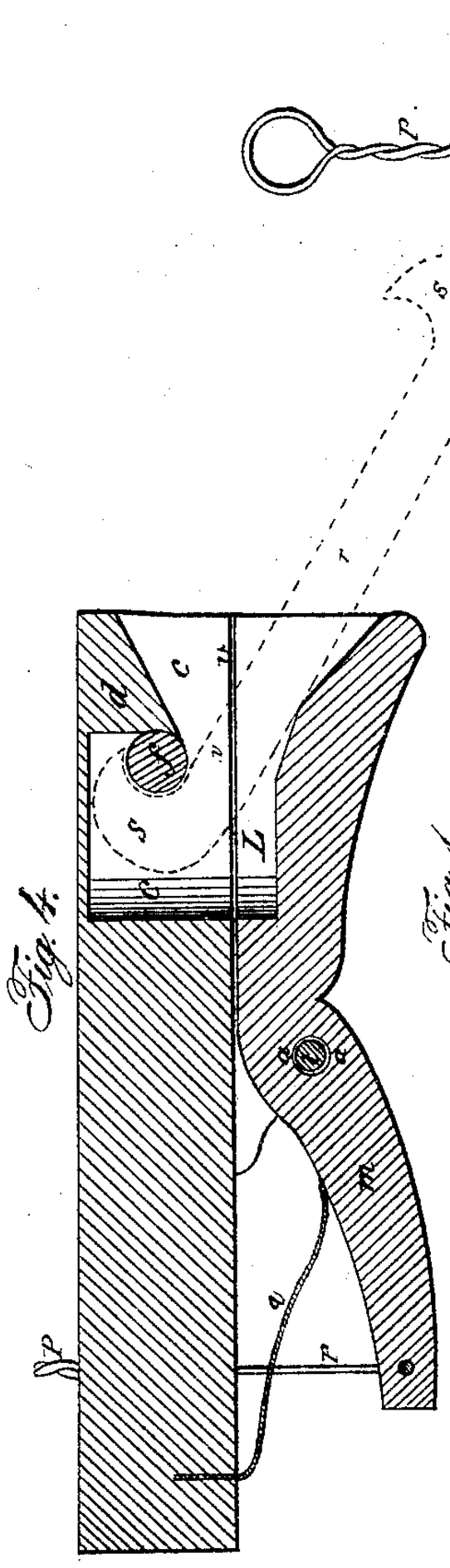

Fig. 4.

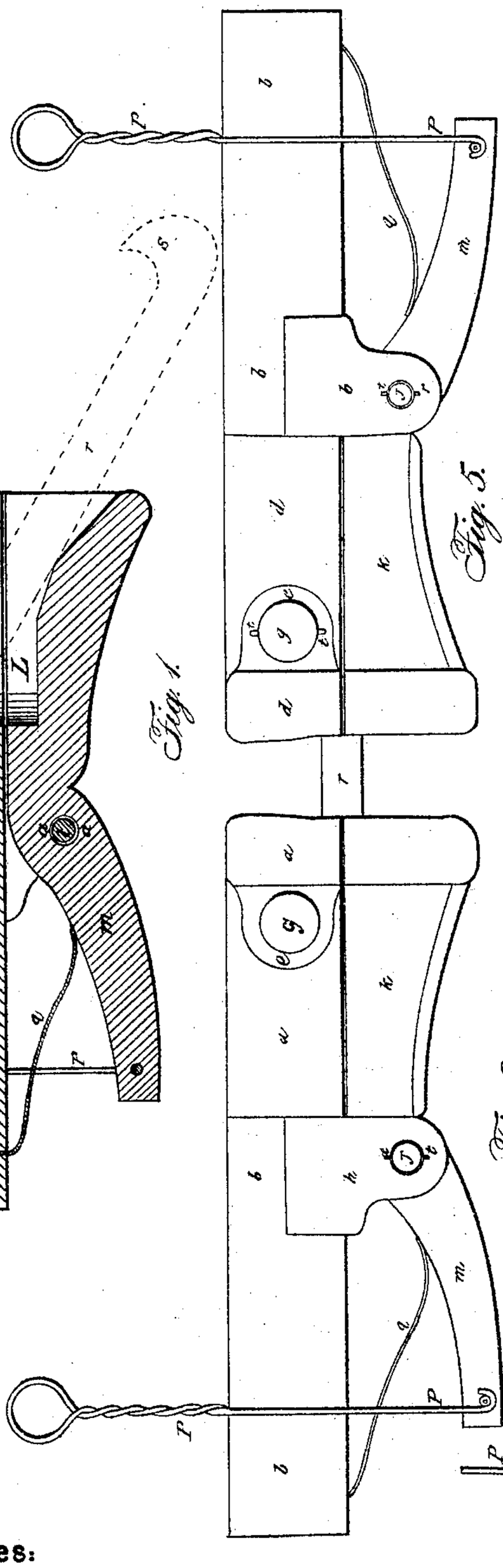

Fig. 5.

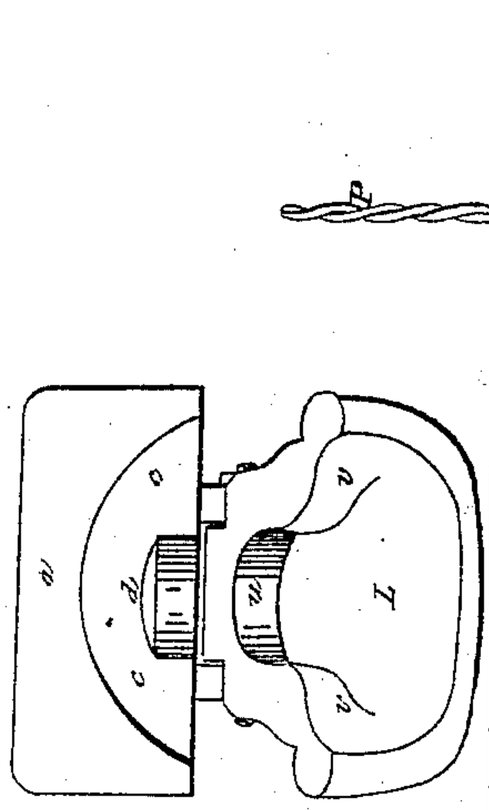

Fig. 1.

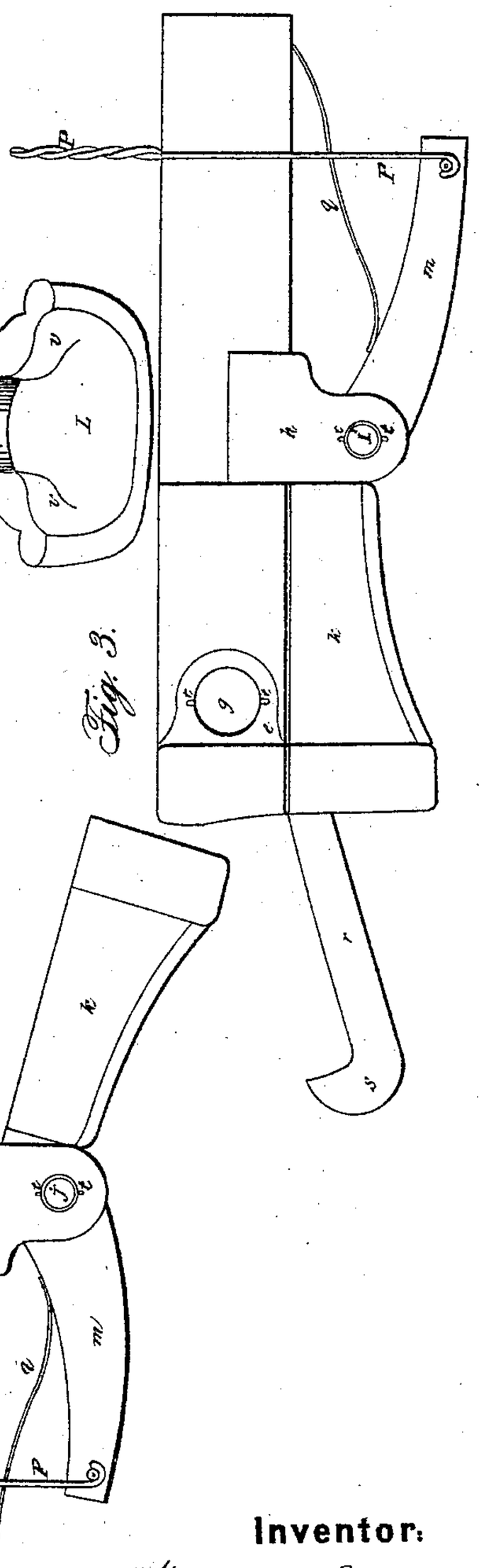

Fig. 3.

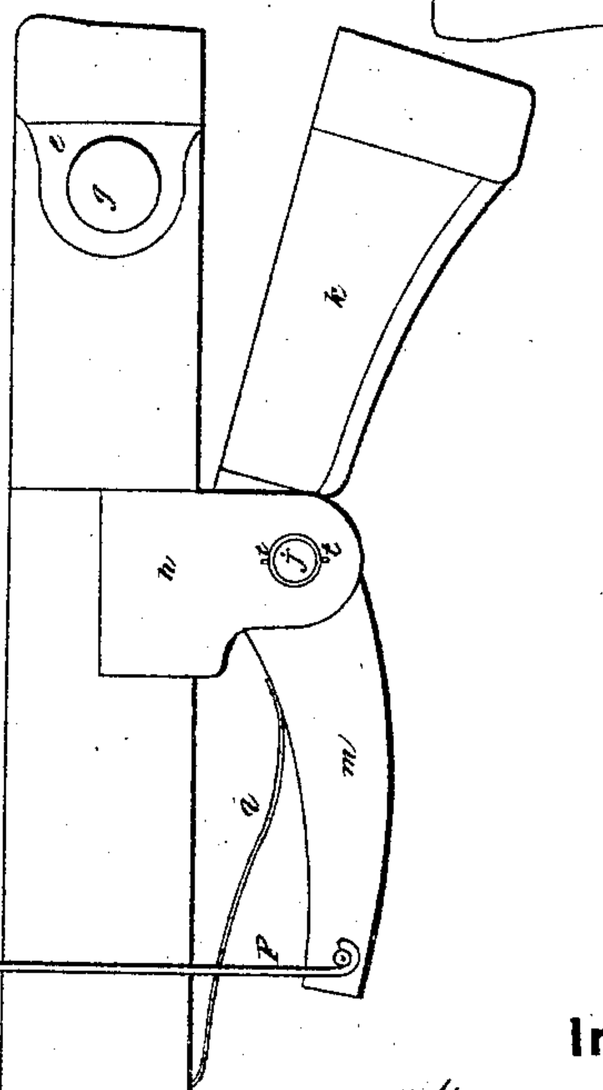

Fig. 2.

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UNITED STATES PATENT OFFICE.

E. W. WILSON AND JOHN E. ERWIN, OF SPRINGFIELD, MASSACHUSETTS, ASSIGNORS TO EMANUEL W. WILSON.

IMPROVED CAR-COUPLING.

Specification forming part of Letters Patent No. **50,994**, dated November 14, 1865.

To all whom it may concern:

Be it known that we, EMANUEL W. WILSON and JOHN E. ERWIN, formerly of Harper's Ferry, in the State of Virginia, have invented and made certain new and useful Improvements in Railway Car-Couplings; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Figure 1 is a longitudinal side view of the couplings connected together. Figs. 2 and 3 represent the couplings detached. Fig. 4 is a longitudinal section of one-half of the coupling. Fig. 5 is an end view of one-half of the coupling.

The nature of our improvements consists, mainly, in the peculiar construction of one immovable and one hinged or jointed jaw-like and yielding lever, acting coupling, said couplings performing the functions of attaching and detaching automatically through the action of the car or cars to which said couplings are affixed, as well as admitting of being operated by manual agency.

Another feature of our improvements is the employment of a wrought-steel pin or bolt, arranged within the recess of the jaw of the upper part of the coupling, so that the hook ends of the connecting-link will rest and pull directly against the circumference of the bolt instead of against the brittle cast-metal lip of the jaw of the coupling.

To enable others to be skilled in the manner of constructing and using our improvement, we herewith give a description thereof.

In Fig. 1, letters *a a a a* mark two upper cast-metal jaw-like and flaring formations of the required size and strength, having continuations *b b b b* of any suitable length and thickness, and, if desired, having bolt-holes made vertically through said continuations for securing the same to the under side of the platform of the cars. The upper half of the coupling has its jaw-like end cast with a concavity or recess, C C, formed with a lip-like shape, *d*, as shown in sectional Fig. 4, said upper half also having an eye-like formation or swell, *e e*, perforated with transverse bore *f*, as in Fig. 4, designed for the insertion of a wrought-steel headed bolt, *g*; also, cast onto the upper half are ear-like projections *h h*, perforated with small bores *i i*, through which pass small pivot or joint pins, J J, and by which the upper jaw or half of the coupling is connected or joined with the lower jaw, which is formed also of cast-metal, with a flaring and somewhat bell-shape end, K K, also having a concavity or depression, L L, as shown in Figs. 4 and 5, and also having a tapering inclined lever end, *m*, with a pivot or joint hole, *n*, Fig. 4, about midway of its length, this pivot-hole forming the axis or joint of the yielding-jaw part of the coupling. Through the tapering-lever end of the lower or yielding jaw is inserted a fixed pin, *o*, over which hooks the hand-lifting fork-like device *p p*. Affixed to the under side of the upper half or immovable jaw is a suitable flat metal spring, *q q*, the disengaged end being bent or turned up and resting on the top surface of the lever end and pressing sufficiently hard against the lever end so as to keep the lower jaw part of the coupling closed and hard up against the upper jaw part, when desired. A pendent weight hooked onto the lever end would be found to answer very nearly the same purpose as the spring, and might, no doubt, be found useful under some circumstances.

The coupling or connecting link, *r*, should be of the best wrought metal, and of the requisite length and strength, all of which, however, must be determined by the amount of strain or draft thereon. The holding ends S S, Fig. 4, must not be too much curved, but more of the shape indicated in Fig. 3.

The several transversely-inserted bolts or pins are kept in place by small confining-pins *t t*, inserted through the ends thereof, as marked in Figs. 1, 2, 3, and 5.

Our improved couplings are designed to be made of cast metal, of any required size, weight, and strength that may tend to bring about in the most effectual manner the desired result; and we do not confine or limit ourselves to the precise shape or form shown.

We do not claim any special manner or mode of affixing our couplings to the platform or "bumper" part of the cars, for any secure and convenient method may be adopted. Nor do we restrict ourselves to the peculiar mode of using the hooked and forked lifting device

passing up through the platform of the cars, as the coupling may be operated by a laterally-arranged connecting-lever working on the side of the platform.

In the employment of the wrought-metal transversely-inserted bolt *g*, the hook ends *s s* of the connecting-link, having the rounded-off surface of the wrought-steel bolt to bear against, (and as said bolt is movable in position,) the bearing-surface can be changed, so as to prevent any undue wear of the bolt.

The advantage in using a movable surface of a wrought-steel metal bolt is that a tough tenacious surface is pressed or pulled against instead of a brittle or crumbling material, the wrought bolt being detachable and readily replaced if worn or broken; but should the cast lip *d* wear round or break off the whole upper jaw would become useless and an entirely new one be required instead. This is one advantage of our improvements, but the most important feature claimed is the great facility of self attaching and detaching, for in the operation of our couplings, should any car jump off or be canted or thrown off the railway, right or left, the least variation from the usual plane and line of direct motion of one car relative to another will instantly press downwardly the connecting link or hook, which, bearing hard against the lower yielding jaw, causes it to open, thereby releasing the hook end from the upper fixed jaw and readily detaching or separating the couplings and most effectually preventing the dragging or throwing off any car contiguous to the ones detached.

In the connecting together a train of cars all that is required to be done is to insert in position by hand the hooking-link to one end of each car when the coming together of the several cars will cause the complete attaching or coupling of the whole train. The rounded surface of the ends of the coupling-links, sliding upwardly on the concavity of the lower jaw, will readily pass up and within the recess of the upper jaw, bearing up and against the transversely-inserted bolt *g*, getting into position, as shown in Fig. 1.

When it is desirable to detach any car by hand, either moving or standing, it is merely necessary to operate or lift up the hooked forked lifting device *p p*, when the lower yielding jaw will immediately open downwardly, and the connecting-link, by its own weight, will drop out of position and become disengaged from the upper jaw of the coupling.

It must be observed that when all the cars of a train are in motion in their usual plane and line of movement the lower jaws of the couplings are held firmly in place, bearing up and kept closed against the upper jaw by the agency of the spring *q q*, and as the neck-like part *u* of the bell-shaped space *v v*, Figs. 4 and 5, is smaller in diameter vertically than the hook end of the connecting-link, said link cannot become detached from the gripe of the jaws. The neck part *u* referred to is, however, horizontally wider than vertically, so as to afford sufficient lateral play, right and left, of the connecting-link, in order to compensate and give sufficient play while the cars may be turning or passing around curves or moving over inequalities of the railway.

Having described the nature, construction, and operation, and set forth the several advantages of our improvements, what we claim as new, and desire to have secured by Letters Patent of the United States, is as follows, viz.:

1. A car-coupling formed of one rigid semi-bell-shaped jaw, *a a b b*, provided with a cavity, *c*, and lip *d*, combined with a vertically-yielding semi-bell-shaped jaw, *k k*, having an extended lever-like end, *m*, the said jaws, when together, forming an inclosed cavity, *c*, and bell-shaped entrance C U V, Figs. 1, 2, 3, 4, and 5, substantially as shown and described.

2. In combination with the bell-shaped jaws *a a k*, a movable detachable bolt, *g g*, inserted transversely through the upper jaw, *a a*, as shown in Fig. 4, substantially as and for the purpose set forth.

3. In combination with the bell-shaped-jaw coupling *a a k*, the fork-like hooked lifting device *p p* and the link *r*, having two hooking ends *s s*, substantially as shown, set forth, and described.

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