

# A. Bigelow, Universal Joint.

N<sup>o</sup> 84,161.

Patented Nov. 17, 1868.

Fig. 1.

Fig. 2.

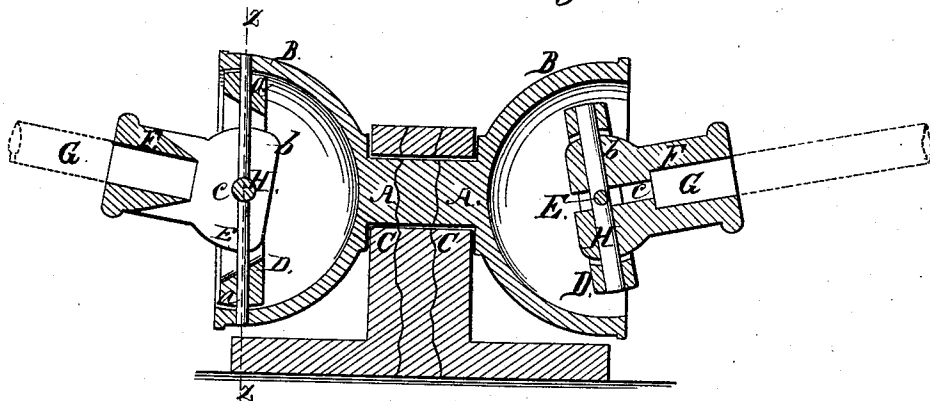
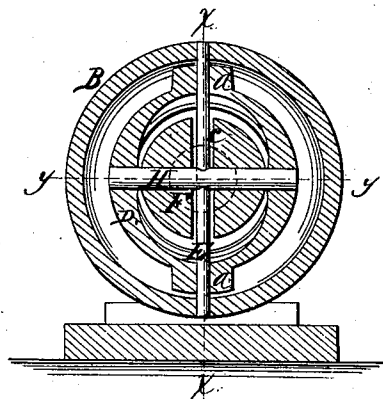


Fig. 3.



Witnesses:  
Albenneuerdorf  
G & Cotton

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per *Mumford*  
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# United States Patent Office.

A. BIGELOW, OF HAMILTON, CANADA.

Letters Patent No. 84,161, dated November 17, 1868.

## IMPROVEMENT IN SHAFT-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 I, A. BIGELOW, of Hamilton, in the Province of Ontario, in Canada, have invented a new and improved Coupling for Shafting; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to a new and improved coupling for shafting of machinery, by which shafts may be connected in such a manner as to admit of being rotated freely when out of line, or when forming a greater or less angle with each other.

The invention is applicable to various kinds of machines, some of which are in very common use, such, for instance, as threshing-machines, horse-powers, &c. In the accompanying sheet of drawings—

Figure 1 is a vertical section of my invention, taken in the line *x x*, fig. 3.

Figure 2, a longitudinal section of the same, taken in the line *y y*, fig. 3.

Figure 3, a vertical section of the same, taken in the line *z z*, fig. 1.

Similar letters of reference indicate like parts.

A represents a shaft quite shut, leaving at each end a semispherical shell, B. The shell and shaft may be of cast-iron, and all cast in one piece, if desired. I do not, however, confine myself to any precise mode of construction.

Figs. 1 and 2, when united as indicated by the red lines, give a correct idea of the shaft and shells.

The internal parts of these shells, it will be seen, are represented in different positions, one shell leaving its line of section at right angles to that of the other. The shaft A is fitted in a suitable bearing, C.

In each shell B there is fitted a ring, D, and through these rings bolts E pass, in which the rings are allowed to turn freely, the ends of the bolts being fitted in the shells.

The rings D are considerably smaller in diameter than the inner diameter of the outer parts of the shells, and the portions of the rings through which the bolts E pass have projections or hubs, *a*, which extend to the inner surfaces of the shells, as shown clearly in figs. 1 and 3.

The interior of the rings is not circular, like the ex-

terior, but has an oblong or oval form, as shown in fig. 3, and the inner diameter of the rings gradually contracts from their front to their inner ends, as shown clearly in fig. 1.

F F represent sockets in which the shafts G G, which are connected by the device, are secured. (See figs. 1 and 2.)

The inner parts of these sockets are made with a swell, *b*, of globular form, the diameter of which is slightly less than the inner diameter of the interior of the rings D, so that the sockets may work freely within the rings or bolts H H, which pass through the swells *b* of the sockets, and are fitted in the rings D. (See, more particularly, fig. 3.)

The swells *b* of the sockets are slotted, as shown at *a*, to admit of the bolts E passing through them without interfering with the free play of the sockets F in the rings, and the bolts H of the sockets F have holes made centrally through them, to admit of the bolts E of the rings D passing through them.

By this arrangement it will be seen that the shafts G are connected to the shells by what may be termed universal joints, and that the shafts may be placed at a greater or less angle relatively with each other, and both allowed to rotate freely, and either to turn or drive the other.

The device also is extremely strong and durable, in consequence of the bolts E H being long, one passing through the other, and no short pivots used.

Having thus described my invention,

I claim as new, and desire to secure by Letters Patent—

The shells B B on shaft A, in combination with the rings D, and sockets F F, which receive the shafts G G, the rings and sockets being connected together and to the shells respectively by the bolts E H, with the bolts E passing through the bolts H, all being constructed and arranged substantially as and for the purpose set forth.

Hamilton, 15th August, 1868.

A. BIGELOW.

Witnesses:

R. N. LAW,  
of the City of Hamilton.

I. IMSLEY BURSON,  
of St. Catharines, C. W., Esquire.