B. F. ALLEN.
Dowel-Pin.

No. 201,378. Patented March 19, 1878.

Fig. 1.

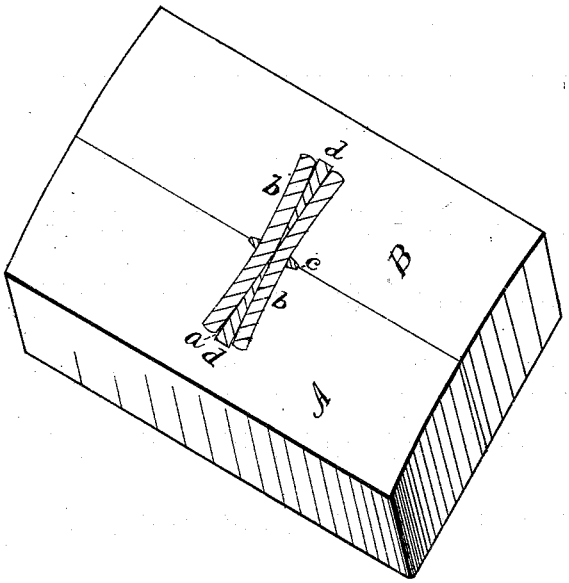


Fig. 2.

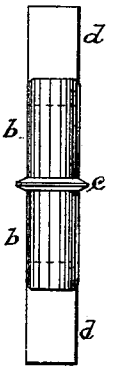
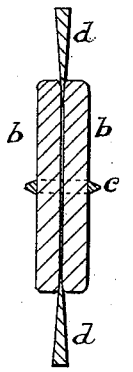


Fig. 3.



WITNESSES =

Frank M. Burnham.
Fred E. Tasker.

INVENTOR =

Benjamin F. Allen
per
J. H. Tasker & Co.
Attorneys

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

BENJAMIN F. ALLEN, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN DOWEL-PINS.

Specification forming part of Letters Patent No. **201,378**, dated March 19, 1878; application filed February 25, 1878.

To all whom it may concern:

Be it known that I, BENJAMIN F. ALLEN, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Dowel-Pins; and I do hereby declare that the following is a full, clear, and exact description of my invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention relates to that class of devices used in joining two or more pieces of wood or other material when it is desired to unite them by a firm and durable joint, as in the leaves and tops of tables, door-panels, barrel-heads, boxes, and many other articles which are frequently composed of more than one piece, and in which it is necessary that the joining should have great strength, and not increase the thickness of the material; and the invention consists in the construction of a dowel-pin in such a manner that it may be completely formed ready for use as an article of manufacture, and will expand when driven into the holes made for its reception in the different pieces of material to be united, as will be hereinafter fully set forth.

In the drawings, Figure 1 is a perspective view of two pieces of material united by means of my improved joining, and then divided longitudinally through the middle, so as to show the relative positions of the different parts of the dowel-pin after being driven into the holes formed for its reception. Fig. 2 is a side view of one of the dowel-pins with its retaining-ring and wedges. Fig. 3 is a longitudinal section of the pin as shown in Fig. 1.

A and B represent two pieces of wood or other material, in each of which has been formed a hole, *a*, gradually increasing in its dimensions as it enters the parts, so that a diametrical section would exhibit a dovetail form, as shown in Fig. 1 of the drawings. A sufficient number of these holes are formed in each part to give the desired strength to the joint when they are filled by the dowel-pins and the parts are brought together, either with or without the interposition of glue or other cementing material.

The dowel-pins are formed of two parts, *b b*, each of which is of semicircular section, the two together forming a pin equal in diameter to that of the holes *a* at their narrowest part, the pin being encircled at or near the middle of its length by the ring *c*, which retains the two halves of the pin in juxtaposition while it is being inserted into the holes in the parts A B.

It is evident these rings may be of other material than metal, if found desirable, for, their function being principally the holding of the parts of the pin together until they are placed in position, no great strain comes upon them, and consequently any material capable of bearing this slight strain will answer; but I prefer the metal ring constructed as shown in the drawing, as it is not only cheap, but efficient, not being affected by variations of temperature or moisture to such an extent as in any way to impair its usefulness for this purpose.

Two wedges, *d d*, are slightly inserted, one in each end of the pin, into the diametrical cleft formed by the union of the two parts *b b*, the slight expansion of these parts by the insertion of the wedges causing them to fill the rings *c* tightly, and by their pressure upon the ends of the two wedges they are also held in place.

It will be apparent that dowel-pins formed in this way ready for use may be placed upon the market for sale like any ordinary article of manufacture, and when applied to use are driven into holes formed in one of the pieces which are to be fastened together. The wedge, striking the bottom of the hole, expands the end of the pin, causing it to fill the hole perfectly, and resist all efforts to extract it. The other piece to be attached is then driven onto the pin or pins, one end of which has already been fixed, the wedge striking the bottom of the hole and expanding the parts, as already stated. The ring *c* will occupy a position at the junction of the two parts, and embed itself in them; or, if desired, a slight countersink may be made for its reception.

The dowel-pin having wedges inserted in a

knife-cleft in its opposite ends for connecting two pieces of wood has long been in use; but these lacked the facility of construction by machinery so necessary to bring an article of this kind into general use.

Having thus described my invention, I claim as new and desire to secure by Letters Patent the following:

A dowel-pin composed of the two semicircular parts, encircled by a ring, and provided at one or both ends with wedges, for the purpose of securing the pin in an orifice into which it is driven, substantially as described.

In testimony that I claim the foregoing as my own I hereunto affix my signature in presence of two witnesses.

BENJAMIN F. ALLEN.

Witnesses:

JOSEPH CUTLER,

JOHN G. JACKSON.