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PARALLEL FOR MACHINE TOOLS AND THE LIKE.

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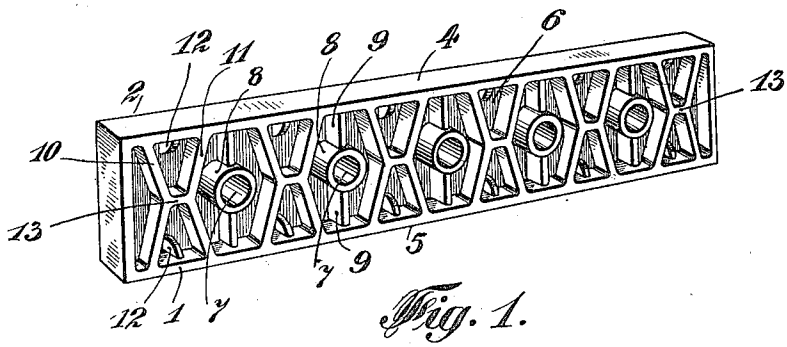


Fig. 1.

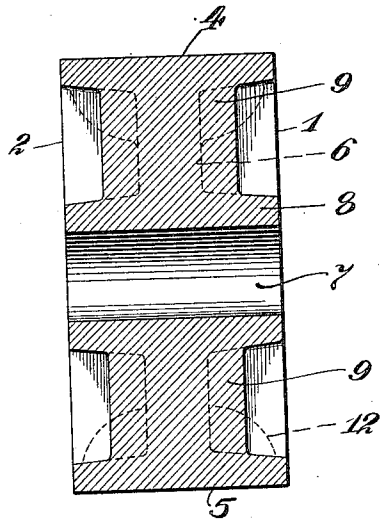


Fig. 2.

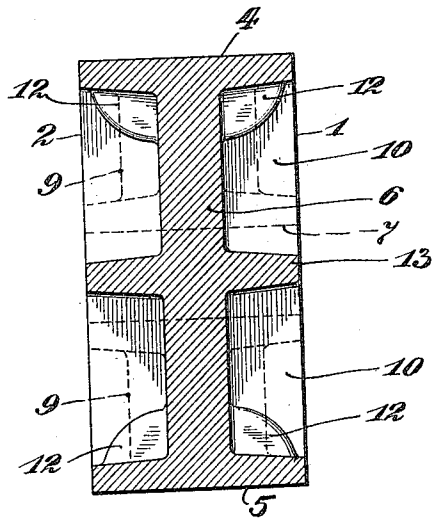


Fig. 3.

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PARALLEL FOR MACHINE-TOOLS AND THE LIKE.

1,383,979. Specification of Letters Patent. Patented July 5, 1921.

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To all whom it may concern:

Be it known that I, ELMER J. BRYANT, a citizen of the United States, residing at Woonsocket, in the county of Providence, State of Rhode Island, have invented certain new and useful Improvements in Parallels for Machine-Tools and the like, of which the following is a specification.

This invention relates broadly to small tools and more particularly to parallels and the like.

The principal object of the present invention is to provide a parallel or the like for planers or boring machines wherein the construction is such as to provide maximum strength with a minimum weight.

A further object of the present invention is a parallel or the like comprising a construction having a plurality of relatively small surfaces lying in a common plane so that the device may be used on a machine bed without liability or danger of a chip or foreign material getting between the parallel and the machine bed.

A still further object of the present invention is a parallel or the like comprising substantially a reinforced channel iron construction provided with strengthening members arranged to withstand both compression and tension stresses.

A still further object of the present invention is a parallel comprising a reinforced channel iron construction provided with a plurality of bolt openings or wells adapted to permit the use of bolts in securing the parallel in position or upon the work with which the parallel is being used, and wherein the bolt wells terminate co-planar with the sides of the parallel to prevent springing of the parallel when it is bolted up.

Other and further objects of the present invention will in part be obvious and will in part be pointed out hereinafter in the specification following by reference to the accompanying drawings.

Realizing that the present invention may be embodied in a construction other than the specific form shown herein it is desired that the present form shall be understood as illustrative and shall not be taken in the limiting sense.

Throughout the several figures of the drawings like characters are used to represent like parts, and

Figure 1 is a perspective view of the preferred form of the present invention.

Fig. 2 is a sectional view taken through one of the bolt openings.

Fig. 3 is a sectional view taken between a pair of reinforcing transverse webs.

Heretofore in the art it has been customary to utilize solid bars or blocks of metal for parallels where it was desired to support work on a machine bed or to build up work in such manner as to bring the work to an effective position for operation on a machine tool.

Where solid bars are used there is a liability of a small chip of metal being between the bars and the bed of the machine so that the bars would be distorted, also where parallels of considerable length were desired the weight of solid bars is objectionable. Furthermore there is a tendency of solid bars to bend somewhat more readily than a trussed construction.

The present invention overcomes the difficulties of the known art by providing a parallel constructed in such manner as to sustain forces either as directly applied forces tending to crush the bar or a force parallel to the surface which would be transformed into a composite tension and compression force in the bar. In one embodiment of the invention the construction may comprise a channel iron construction having reinforced extensions arranged to sustain both compression and longitudinal forces and prevent twisting or distortion of the edge members of the channel.

Referring now to the drawings in which is disclosed one form of the invention, the device comprises a member having the sides thereof arranged in parallel planes, with the sides 1 and 2 comprising plane surfaces upon edge members 4 and 5 of the device. These edge members are joined throughout their length by a web 6 which is bored at suitable intervals to provide bolt openings 7. These bolt openings are surrounded by walls 8 of metal thereby converting openings into wells. On each side of the wells there extends a transverse bead 9 which strengthens the web adjacent the bolt wells. Between the bolt wells a triangular trussed arrangement is provided by means of angularly disposed transversed webs 10 and 11 and intermediate the bases of these webs 10 and 11

small reinforced brackets 12 are provided. The webs 10 and 11 are joined on the center line of the bar by short longitudinal webs 13.

From the foregoing description it will be noted that the edge members 4 and 5 are sustained throughout their lengths. The sustaining members comprising primarily the central web 6 which is reinforced by the transverse webs 10 and 11, the posts or ribs 9 and the brackets 12, so that the edge members 4 and 5 are very rigidly supported against any twisting force. It will be seen that if the parallel be set under the edge of a heavy piece of casting and heavy vertical forces be brought against the parallel any bending or twisting of the webs 4 and 5 would be fatal to accurate finishing of the work being supported.

Any forces parallel to the surface of the edge members 4 and 5 are sustained by the triangular arrangement of the transverse webs 10 and 11. When such forces are transmitted to the parallel, one of the members for example 10, becomes a compression member, and the other web for example 11, becomes a tension member. The ends of the bolt wells 8 and the edges, webs 10 and 11, and side pieces 4 and 5 are all finished to lie in a pair of common planes, that is, those on one side of the parallel are in one plane and those on the other side are in a parallel plane, and the ends are also finished. This permits the device to be used on any one of its six sides. When so used with the broad flat side of the device against the work or machine table there is comparatively a small portion of the entire area in direct contact with the work on the machine bed, consequently the liability of chips or foreign substances being between the parallel and the associated parts is reduced to a small degree. Furthermore the provision of the bolt wells being co-planar with the transverse webs and the edges, prevents distortion of the parallel when it is bolted to a machine bed or to work.

From the foregoing it will be noted that the present invention while simple in character provides a tool of strength and considerable utility for use in positioning work upon machine tools or the like. In practice parallels of the character above described are usually made in pairs so that work may be accurately positioned on similar dimensioned supports.

Having thus described my invention, what I claim is:

1. As an article of manufacture, an integral piece of metal comprising a parallel for machine tools and the like having a pair of edge members, said edge members being provided with parallel surfaces, a central web connecting said members, a plurality of transverse webs triangularly arranged on each side of the transverse center line of said central web, said transverse webs being integral with said side members and said central web, a plurality of beads extending between said webs, bolt wells formed adjacent said beads, and reinforcing brackets between said side members and said central web and intermediate said transverse webs, with the edges of said transverse webs, said bolt wells, and said members on the same side of the device being co-planar.

2. As an article of manufacture, a parallel for machine tools and the like comprising a pair of edge members, said edge members being provided with parallel surfaces, a central web connecting said members, a plurality of transverse webs triangularly arranged on each side of the transverse center line of said central webs, a plurality of beads extending between said webs, bolt wells formed adjacent said beads, and reinforcing brackets between said side members and said central web and intermediate said transverse webs.

3. As an article of manufacture, a parallel for machine tools and the like comprising a pair of edge members, a central web connecting said members, a plurality of transverse webs triangularly arranged on each side of the transverse center line of said central web, said transverse webs being integral with said side members and said central web, a plurality of beads extending between said webs, bolt wells formed adjacent said beads, and reinforcing brackets between said side members and said central web and intermediate said transverse webs.

4. As an article of manufacture, an integral piece of metal comprising a parallel for machine tools and the like, a pair of edge members, a central web connecting said members, a plurality of transverse webs triangularly arranged on each side of the transverse center line of said central web, a plurality of beads extending between said webs, bolt wells formed adjacent said beads, and reinforcing brackets between said side members and said central web and intermediate said transverse webs, with the edges of said transverse webs, said bolt wells, and said members on the same side of the device being co-planar.

5. As an article of manufacture, a parallel for machine tools and the like comprising a pair of edge members, a central web connecting said members, a plurality of transverse webs triangularly arranged on each side of the transverse center line of said central web, a plurality of beads extending between said webs, bolt wells formed adjacent said beads, and reinforcing brackets between said side members and said central web and intermediate said transverse webs.

6. A parallel for machine tools and the like comprising an integral piece of metal having edge members, a plurality of trian-

gularly arranged transverse webs extending between said edge members, a plurality of beads extending between said edge members, bolt wells carried by said beads with the ends of said bolt wells and said transverse webs being substantially co-planar.

7. As an article of manufacture a parallel for machine tools and the like comprising a pair of straight edge portions, a central web connecting said edge portions to form substantially a channel iron construction, and end members connecting said side members with the edges of all of said members terminating in a pair of parallel planes.

8. As an article of manufacture a parallel for machine tools and the like comprising a pair of straight edge portions, a central web connecting said edge portions to form substantially a channel iron construction, and end members connecting said side members with the edges of all of said members terminating in a pair of parallel planes, and bolt wells formed in substantially the midportion of said web with the axes of the bolt wells substantially at right angles to the plane of said web.

9. A parallel for machine tools and the like comprising a pair of edge members provided with parallel supporting surfaces, a central web extending between said edge members, and reinforcing means extending across said web and between said edge members.

10. A parallel for machine tools and the like comprising an integral piece of metal having a pair of edge members provided with parallel supporting surfaces, a central web extending between said edge members, and triangularly arranged reinforcing means extending across said web and between said edge members.

11. A parallel for machine tools and the like comprising a pair of edge members provided with supporting surfaces, a web extending between said edge members, transverse webs extending between said edge members and across said central web with the edges of said members and said transverse webs terminating in a common plane.

12. A parallel for machine tools and the like comprising a pair of edge members, a central web extending between said edge members, triangularly arranged transverse webs extending across said central web and between said edge members.

13. A parallel for machine tools and the like comprising a pair of edge members, a central web extending between said edge members, ribs extending between said edge members and across said central web, bolt wells extending transversely of said central web.

14. A parallel for machine tools and the like comprising edge members, triangularly arranged supporting webs between said edge members in such manner that said triangular webs sustain said edge members against compression and tension stresses.

ELMER J. BRYANT.