(No Model.)

W. H. HART.

MAKING HINGE LEAVES.

No. 389,508. Patented Sept. 11, 1888.

Fig. 1.

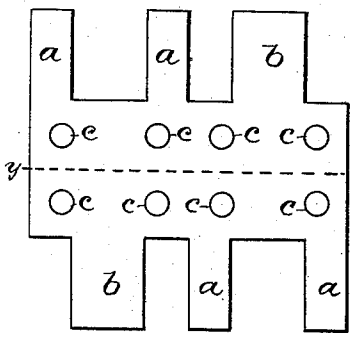


Fig. 5.

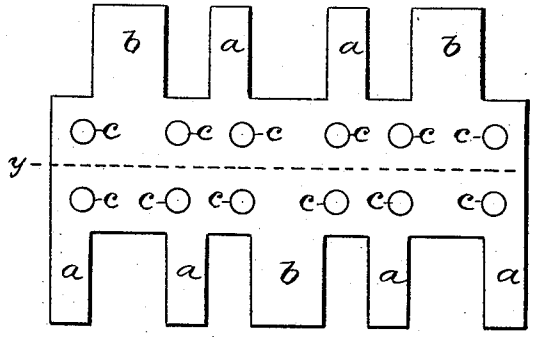


Fig. 2.

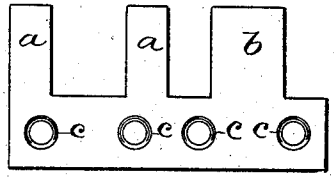


Fig. 6.

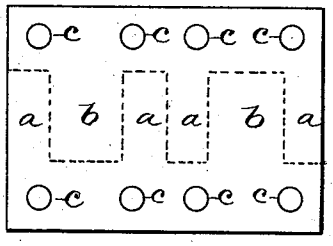


Fig. 3.

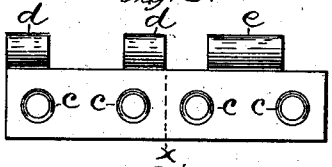


Fig. 4.

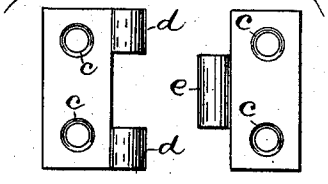
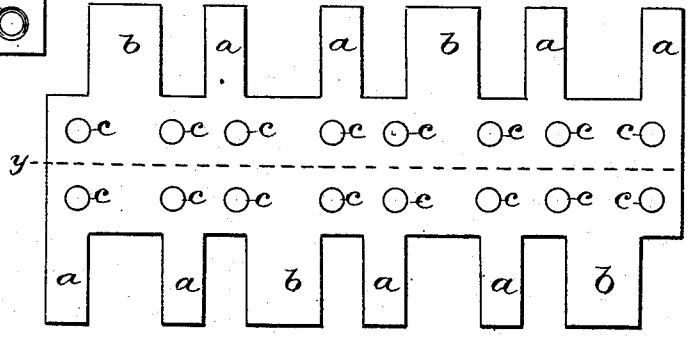


Fig. 7.



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UNITED STATES PATENT OFFICE.

WILLIAM H. HART, OF NEW BRITAIN, CONNECTICUT, ASSIGNOR TO THE STANLEY WORKS, OF SAME PLACE.

MAKING HINGE-LEAVES.

SPECIFICATION forming part of Letters Patent No. 389,508, dated September 11, 1888.

Application filed January 30, 1888. Serial No. 262,384. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. HART, a citizen of the United States, residing at New Britain, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Making Hinge-Leaves, of which the following is a specification.

My invention relates to improvements in making hinge-leaves from sheet metal; and the main object of my improvement is to produce said hinge-leaves in such manner as to save considerable labor in their production, and therefore produce said leaves at a small cost.

In the accompanying drawings, Figure 1 represents in plan view a blank from which to make two pairs of hinge-leaves by my method, the same illustrating the result of the first step in my process. Fig. 2 represents in plan view one-half of said blank, the same illustrating the result of the second step in my process. Fig. 3 is a plan view of the same blank Fig. 2, with the coils or knuckles rolled thereon, said Fig. 3 illustrating the result of the third step in my process. Fig. 4 represents in plan view a pair of hinge-leaves formed from the blank Fig. 3 by dividing it on the line *x*, said hinge-leaves being the result of the fourth and last step in my process. Fig. 5 is a plan view of a blank such as results from the first step in my process, but differing from Fig. 1 by being wide enough for forming three pairs of hinge-leaves instead of only two. Fig. 6 represents in plan view another form of the first blank in my process, the same being wide enough for forming two pairs of hinge-leaves; and Fig. 7 represents in plan view a blank like Fig. 1, excepting that it is made wide enough for forming four pairs of hinge-leaves.

In the preferred mode of producing hinge-leaves by my process I first cut out a blank which is wide enough for forming two pairs of hinge-leaves, the edges of said blank each having formed thereon two wings, *a a*, for making the narrow and outside coils, *d d*, Figs. 3 and 4, of a hinge-leaf, and one wing, *b*, for making the wider or middle coil, *e*, Figs. 3 and 4, of a companion hinge-leaf, all as shown in Fig. 1. I also prefer to punch out the screw-holes *c* at the same time that the blank Fig. 1 is cut, said blank being produced by means of proper-shaped dies and punches arranged in any suitable punching-machine. I next sever the blank along the middle, as indicated by the line *y*, Fig. 1, thereby dividing said first blank into two second blanks, like the one represented in Fig. 2. I next take one of the blanks Fig. 2, and roll the wings into the coils or knuckles *d d* and *e*, as shown in Fig. 3, in which the coils *d d* are formed from the wings *a a*, and the coil or knuckle *e* is formed from the wing *b*. The coils or knuckles upon one blank will all be formed at one operation in a suitable machine, whereby the knuckles for two or more hinge-leaves formed on the same edge of a single blank may be rolled as quickly and with only the same amount of handling as is required in rolling the coils or knuckles of a single hinge-leaf. After the coils are rolled, as shown in Fig. 3, I sever the blank into separate hinge-leaves by cutting it on the line *x*, thereby producing from said blank Fig. 3 a pair of ordinary hinge-leaves, as shown in Fig. 4. The blanks Figs. 5 and 7 are operated upon in the same manner as described for the blank Fig. 1, and I have lettered the dividing-line with the same reference-letter. The process is precisely the same, whether the first blank is made wide enough for only two pairs of hinge-leaves, as shown in Fig. 1, or more than two pairs of hinge-leaves, as shown in Figs. 5 and 7. If the hinge-leaves are not large enough to make the blank for forming more than two pairs of hinge-leaves too large for being conveniently handled, the additional number of hinge-leaves added to the width of the blank will not materially alter the labor of production. In other words, by my process four pairs of hinge-leaves from a blank like Fig. 7 can be produced with about the same amount of labor that is required for producing two pairs of hinge-leaves from a blank like Fig. 1, and therefore the greater the number of hinge-leaves that are formed in the first blank the greater will be the economy of production— that is, within certain limits.

The blank Fig. 6 is, like the blank Fig. 1, designed for producing two pairs of hinge-leaves; but instead of forming the wings for the knuckles at the edges of the blank, and

then dividing the blank through the middle on a straight line, I form the blank with straight edges, and divide the blank through the middle by a series of angular cuts, as indicated by the broken lines in Fig. 6, thereby forming the same wings from the middle of the blank instead of at its edges. When so divided, one-half of the blank Fig. 6 is identically the same in contour as the blank Fig. 3. Forming the first blank like Fig. 6, and then dividing it through the middle on the angular lines shown, I consider the full equivalent of the first and second steps in my process, as first described and illustrated by Figs. 1 and 2. It is also evident that this blank may be widened, so as to form from the first blank any desired number of hinge-leaves.

In many hinges the screw-holes are not countersunk. Whether they are countersunk or not is immaterial to the process thus described in its broadest statement; and for the purposes of this process the screw-holes may be punched and countersunk in any desired manner at any time; but there is a decided advantage in economy of production resulting from punching the screw-holes and countersinking the same while the blanks are of a form wide enough for two or more hinge-leaves or in connection with the formation of such blanks.

While I prefer to practice the several steps of my process in the order first described, it is evident that the wings, in the form of blank shown in Figs. 1, 5, and 7, may be rolled into coils or knuckles as the second step, and the blank be divided through the middle as the third step without materially changing the process as a whole.

I claim as my invention—

1. The herein-described method of forming hinge-leaves, which consists, first, of cutting out a blank wide enough for two or more pairs of hinge-leaves, then dividing the blank through the middle and rolling its wings into knuckles, or vice versa, and, finally, severing the blank having the rolled knuckles into separate hinge-leaves, substantially as described, and for the purpose specified.

2. In forming hinge-leaves from blanks wide enough for two or more pairs, that improvement which consists of punching and countersinking the screw-holes while the blanks are thus wide, and afterward severing the said blanks into individual hinge-leaves, substantially as described, and for the purpose specified.

WM. H. HART.

Witnesses:
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