

(No Model.)

J. SABOLD.

INGOT MOLD.

No. 354,742.

Patented Dec. 21, 1886.

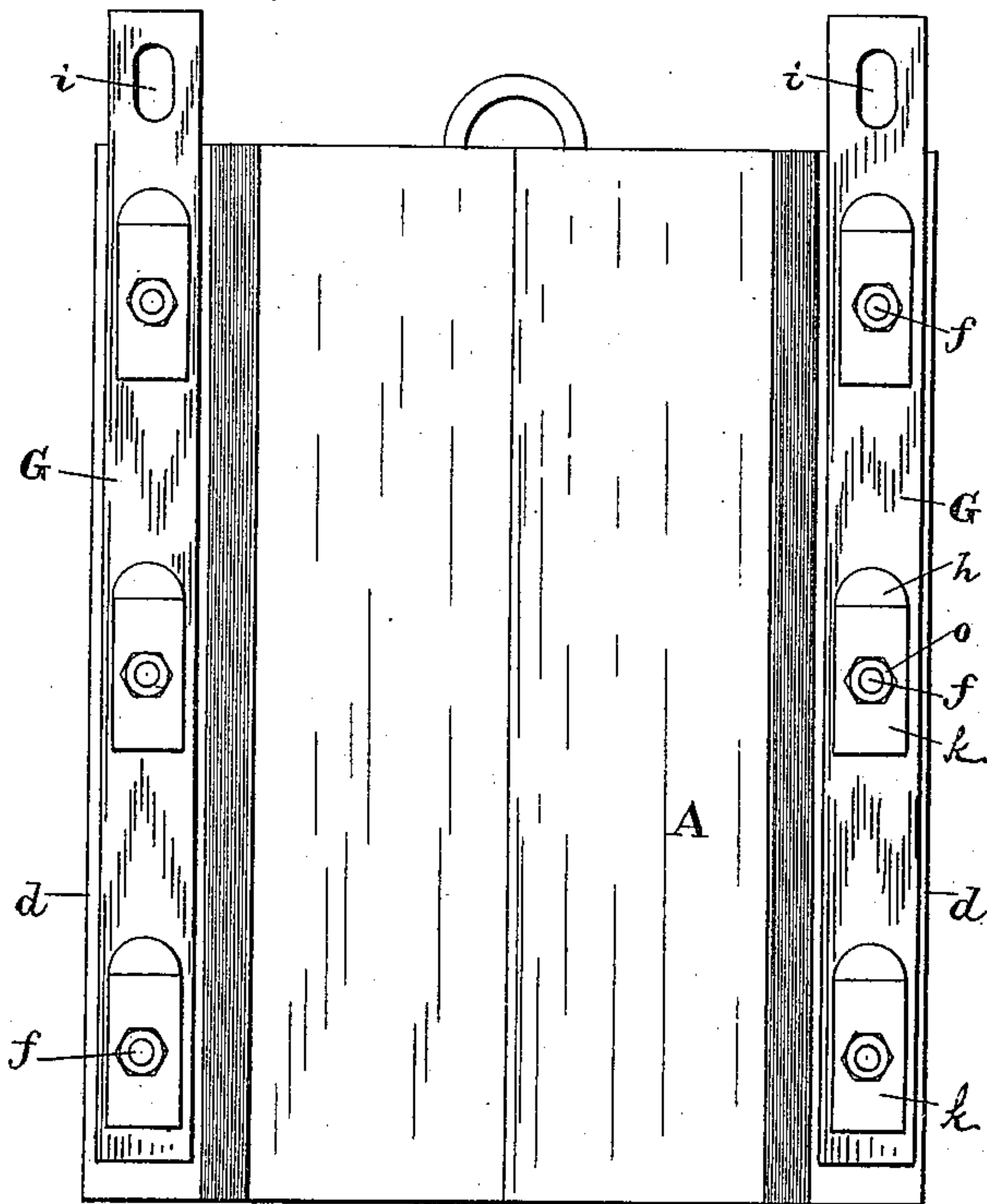


Fig. 1.

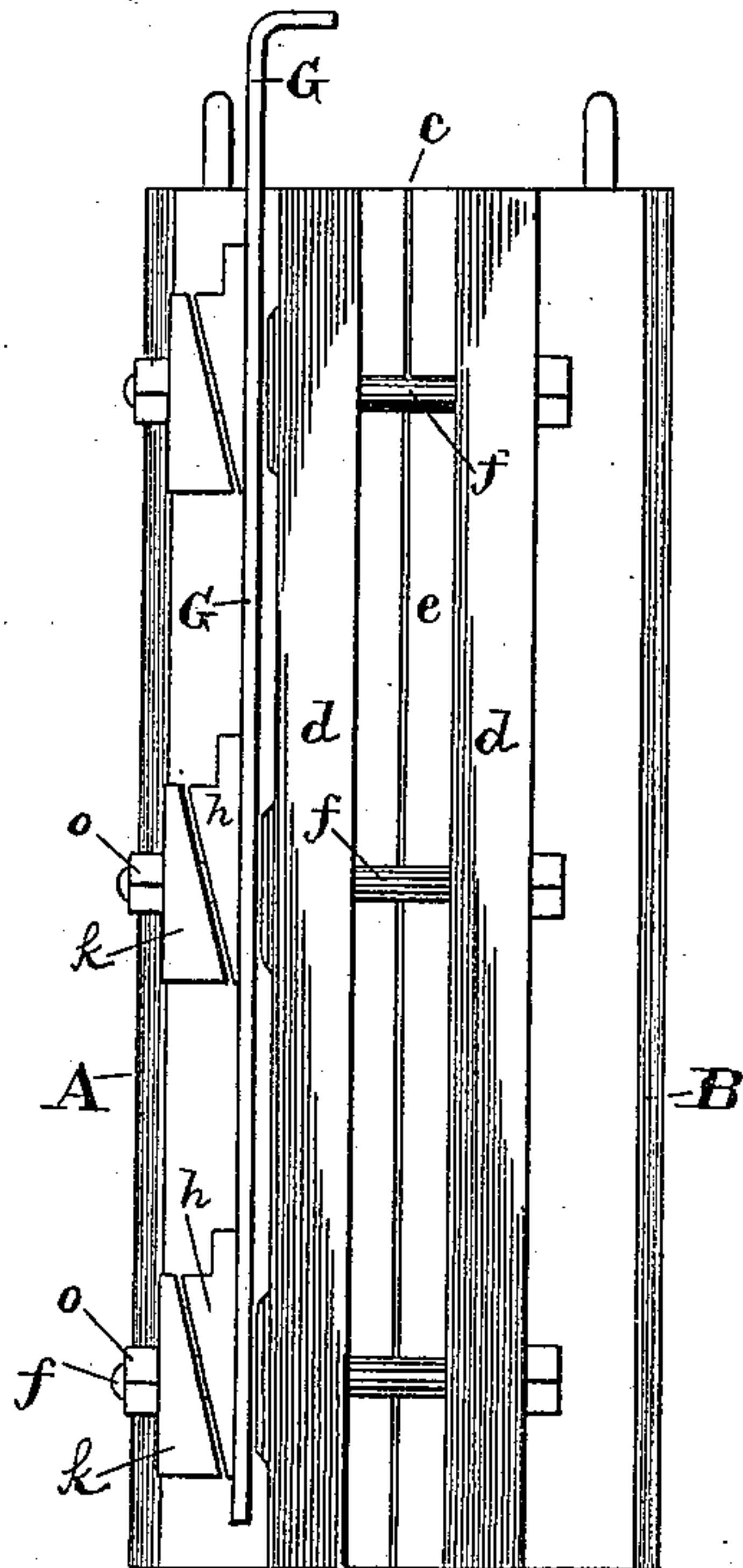


Fig. 2.

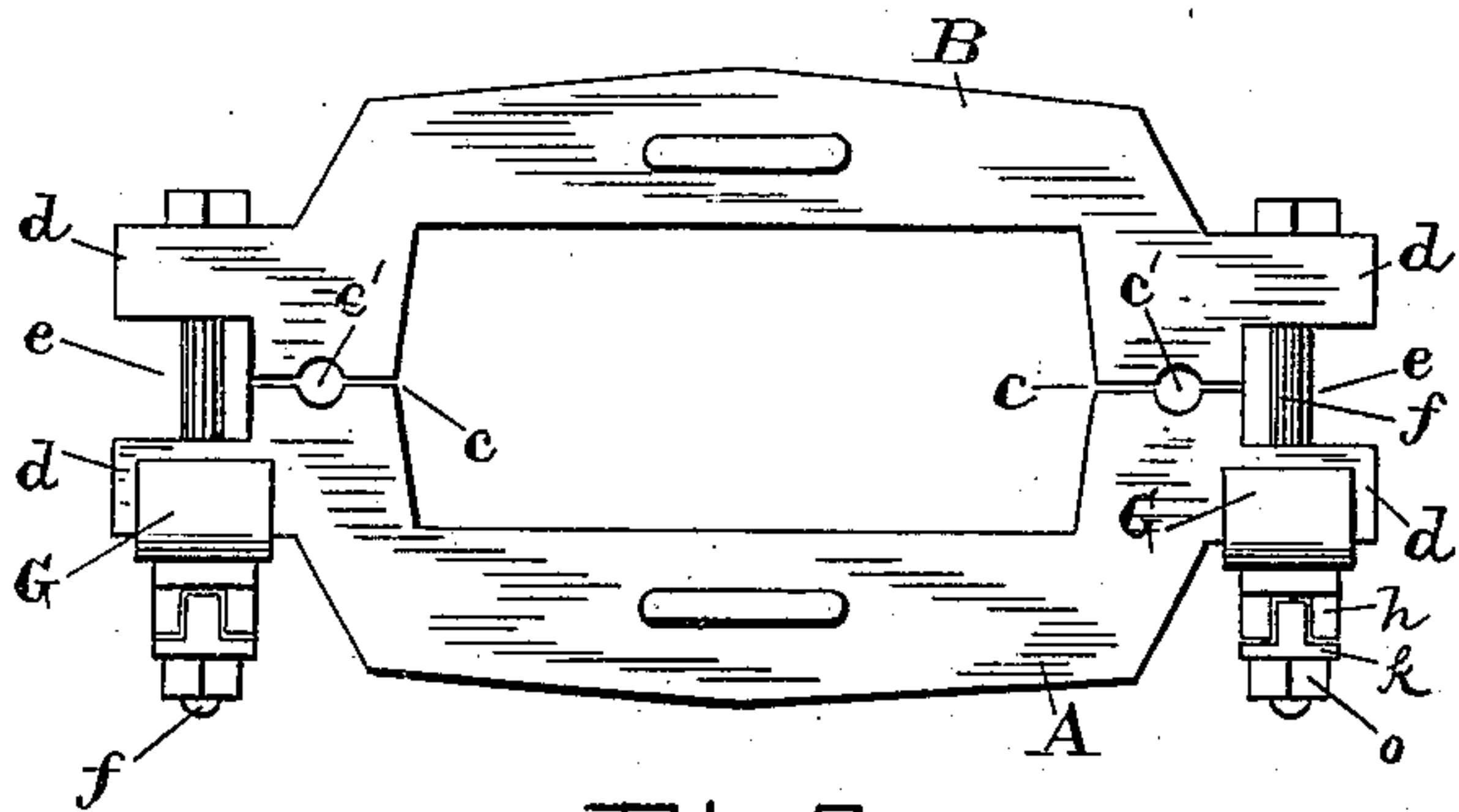


Fig. 3.

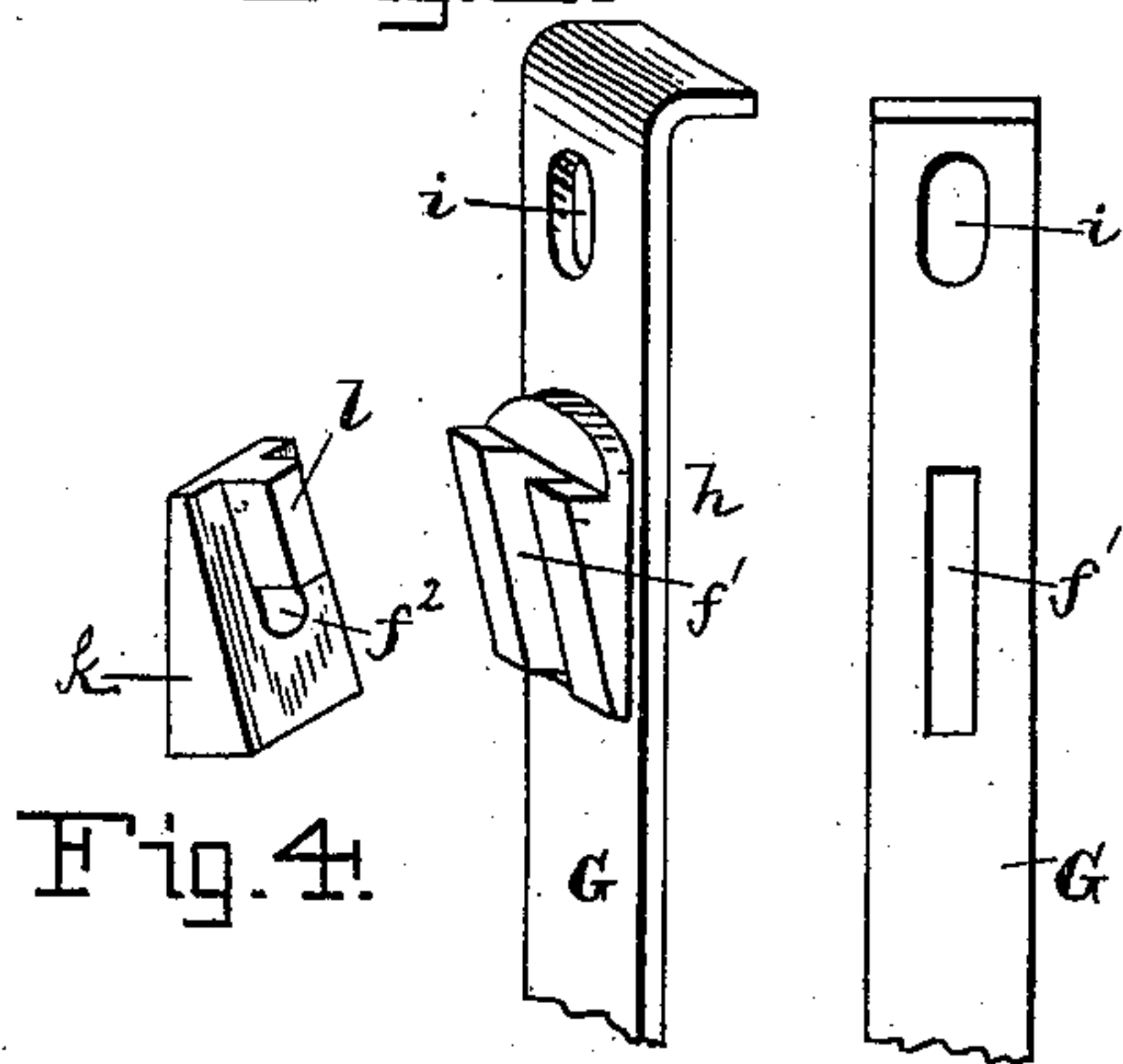


Fig. 4.

Fig. 5.

Fig. 6.

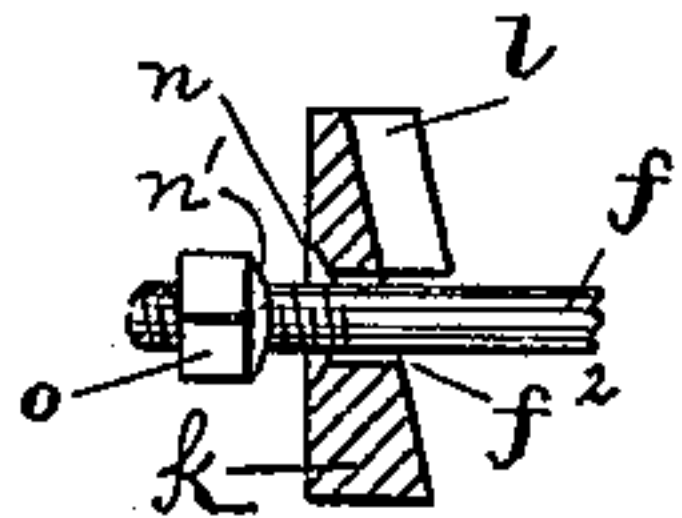


Fig. 7.

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# UNITED STATES PATENT OFFICE.

JOHN SABOLD, OF LITTLE OLEY, PENNSYLVANIA.

## INGOT-MOLD.

SPECIFICATION forming part of Letters Patent No. 354,742, dated December 21, 1886.

Application filed August 3, 1886. Serial No. 209,833. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN SABOLD, a citizen of the United States, residing at Little Oley, in the county of Berks and State of Pennsylvania, have invented certain new and useful Improvements in Ingot-Molds, of which the following is a specification.

My invention relates to a mold for casting metal into ingots, and has for its object to provide a sectional mold provided with special clamps, as hereinafter specified.

In the accompanying drawings, which illustrate the invention, Figure 1 is a front broad side view of the mold. Fig. 2 is an edge or narrow side view of the mold, showing the means for clamping the two sections. Fig. 3 is an end view of the mold and clamps, showing the two mold-sections ready for filling. Figs. 4, 5, 6, and 7 are detail views of the improved clamping device. Fig. 8 is a vertical cross-section through one of the bolts, the wedges, and the flange of the mold.

The letter A designates one section, and B the other, of a metal mold. These two sections unite at the narrow sides, which are opposite, and said sections are separable at the uniting edges *c* on said narrow sides. The confronting faces of the uniting edges *c* of the two sections have a groove, *c'*, for a packing of sand or clay, by which the joint at the uniting edges may be made impervious to the molten metal.

The two narrow sides of each mold-section A B are each provided with a flange, *d*, which is shown extending the length of the mold—that is, from top to bottom. While it is deemed preferable for these parallel flanges to extend the whole length it is not essential. Each flange stands back from the uniting edge *c*, whereby when the two sections are together the two parallel flanges at one side do not touch each other, but are separated by a space, *e*. By this construction the flanges do not get so hot as they would, and neither do the uniting edges *c*. Bolts *f* pass through the two parallel flanges *d*, and across the space *e* at each side of the mold, and unite or hold the two mold-sections together. I have devised a wedge-clamp device for quickly loosening the two mold-sections either to permit the extreme expansion of metal that ensues when all the parts are highly heated, or to allow the ingot-

casting to be removed from the mold. This wedge-clamp device comprises two upright movable bars, G—one at each narrow side of the mold—each bar being provided on one side with two or more inclined blocks, *h*, the point ends of which are downward.

The inclined blocks *h* (see Figs. 5 and 6) are partly divided up and down the center by a slot, *f'*, which opens entirely through the bar G. The bar at its upper end has a hole, *i*. Each bolt *f* carries a loose wedge or inclined block, *k*, which is in position to confront one of the inclined blocks *h* on the movable bar, the inclination of the loose blocks *k* being reverse to the inclination of the blocks *h*, as shown in Fig. 2.

Each loose block *k* (see Fig. 4) has a bolt-hole, *f''*, and on the inclined side is provided with a lug, *l*, which, by coming in contact with the block on the bar G, prevents the loose one from turning. When two confronting blocks, *h k*, are in contact, as here constructed, the slot *f'* in one will be occupied by the lug *l* on the other, whereby the block which is loose on the bolt *f* is prevented from turning.

Another feature is shown in Fig. 7. The outer side or straight face of the loose block has a concavity, *n*, about the bolt-hole *f''*, and the nut *o* on the bolt has one side, *n'*, convex. By this construction the convex side of the nut bears in the concavity of the loose block, and the bar G may be moved up or down without liability of the loose block *k* getting out of true with respect to its confronting block *h*.

It will be seen that one of the inclined blocks of each wedge-clamp is attached to the movable bar G, and this affords an important advantage. When the mold is filled with hot metal, and expansion of the mold parts ensues, this expansion may be relieved a little at a time and as gradually as may be needed by simply drawing the bar G upward. A very small movement of this bar will somewhat loosen the clamps and afford some relief to the pressure due to expansion. The bar may be moved up by inserting the end of a rod in the hole at the upper end and using such rod as a lever to lift the bar. As the bolts *f* pass through the upright bar G, the vertical slots *f'* in said bar are necessary to permit it to be raised or lowered.



Having described my invention, I claim and desire to secure by Letters Patent of the United States—

1. An open-top mold for ingots made in two  
5 sections, A and B, separable on opposite sides,  
and each section provided on its separable side  
with a flange, *d*, the two flanges on each side  
being parallel, in combination with two up-  
right movable bars, *G*, one at each separable  
10 side of the mold, and each of said bars provided  
with two or more inclined blocks, *h*, all having  
their point end downward and having a verti-  
cal slot, *f'*, a reversely-inclined block, *k*, con-  
fronting each inclined block on the said up-  
15 right bars, and a bolt, *f*, passed through each  
two inclined blocks, the two parallel flanges  
and the upright movable bar, whereby upon  
raising or lowering the upright bars the two  
20 mold sections will at once be loosened or tight-  
ened, as set forth.

2. An open-top mold for ingots made in two  
sections, A and B, separable on opposite sides,  
and each section provided on its separable side  
with a flange, *d*, in combination with a wedge-  
clamp consisting of two inclined blocks con- 25  
fronting each other in reversed position, and  
one block provided on its outer face with a  
concavity, *n*, and a bolt passed through the  
said two flanges and inclined blocks, and pro-  
vided with a nut having a convex side, *n'*, 30  
seated in said concavity, as set forth.

In testimony whereof I affix my signature in  
the presence of two witnesses.

JOHN SABOLD.

Witnesses:

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B. F. BOYDEN.