

A. RANKIN.
BUTT HINGE.

No. 61,458.

Patented Jan. 22 1867.

Fig: 1.

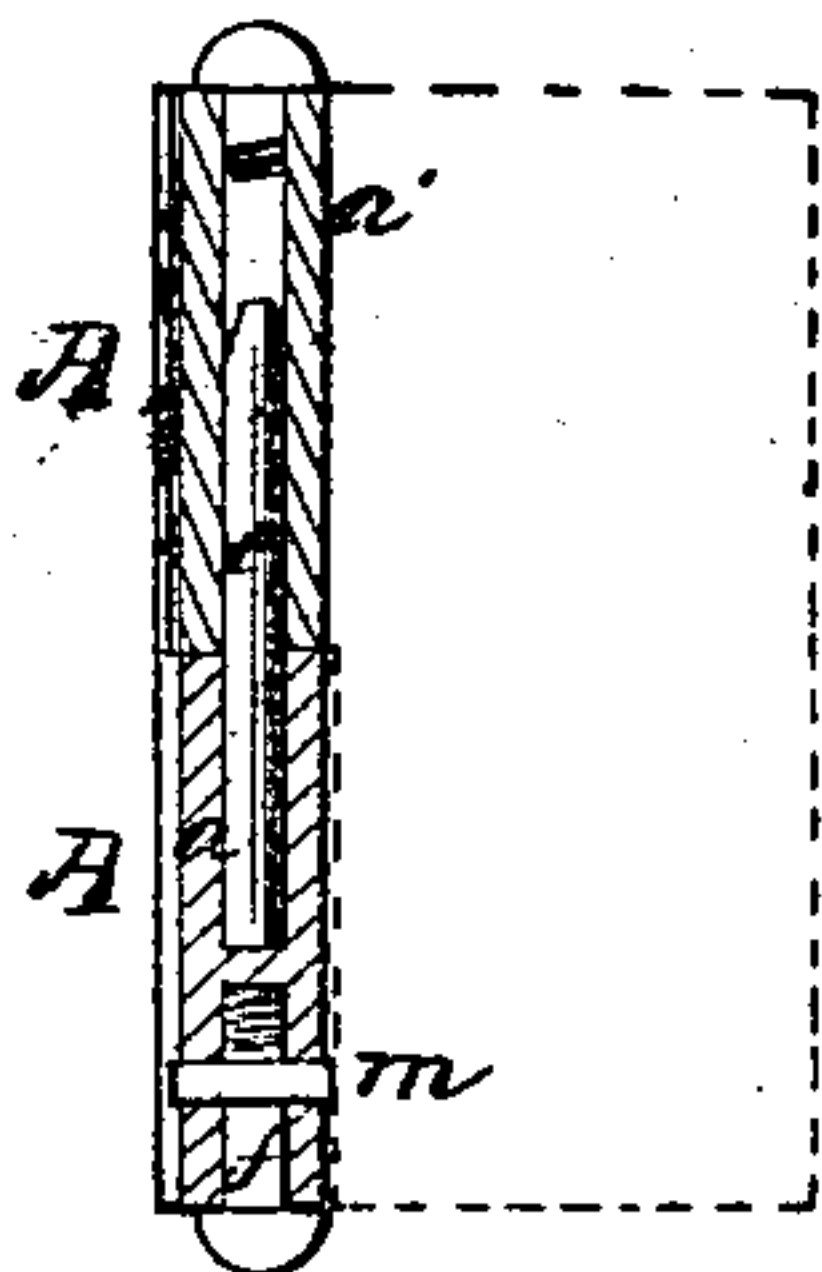


Fig: 2.

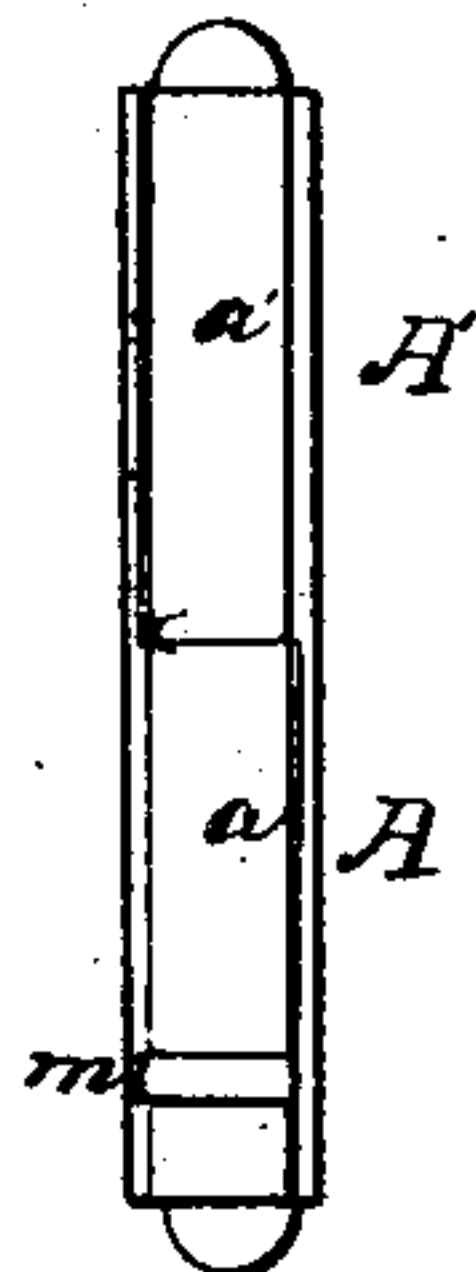


Fig: 3.



Fig: 4.

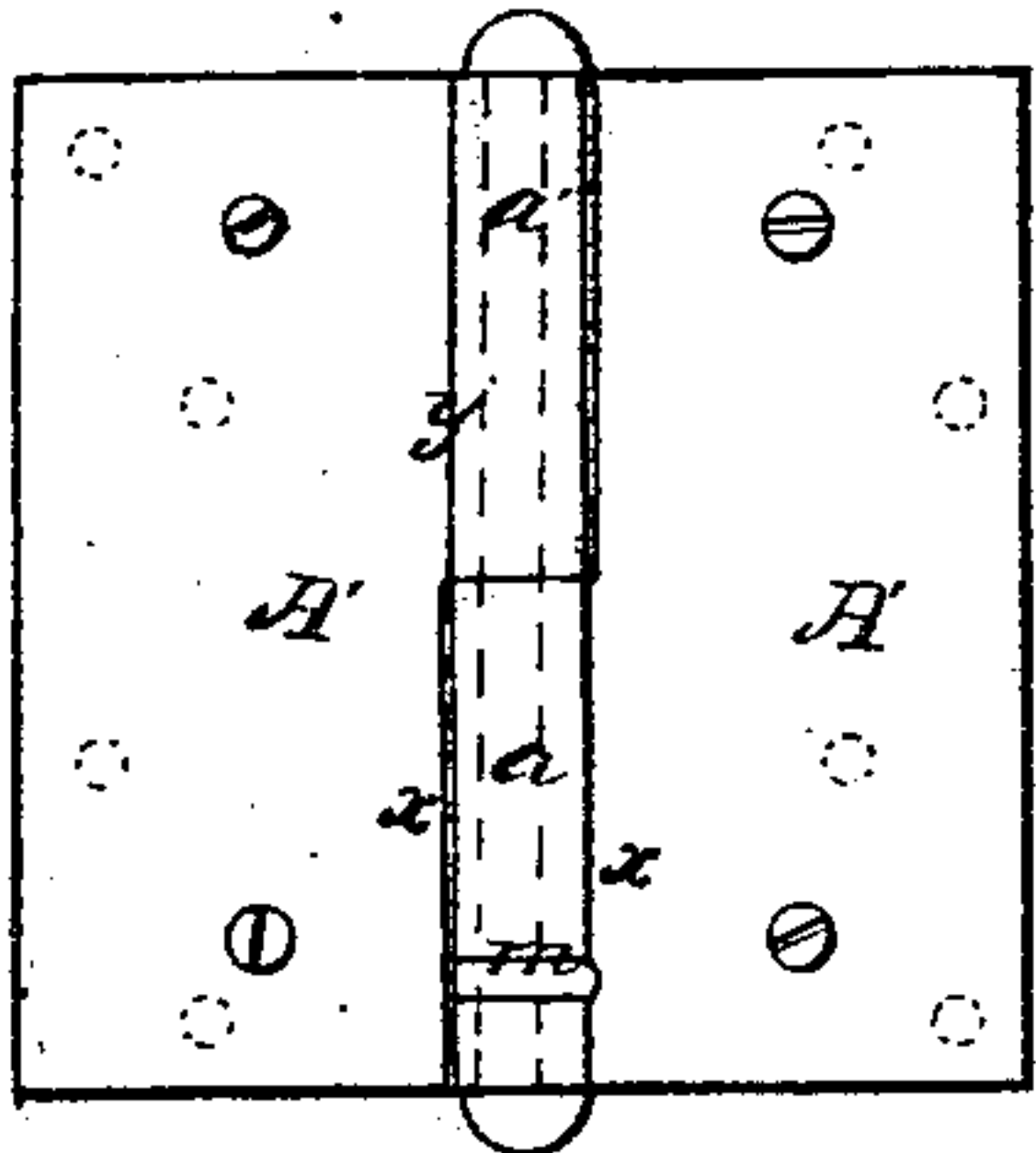


Fig: 5.

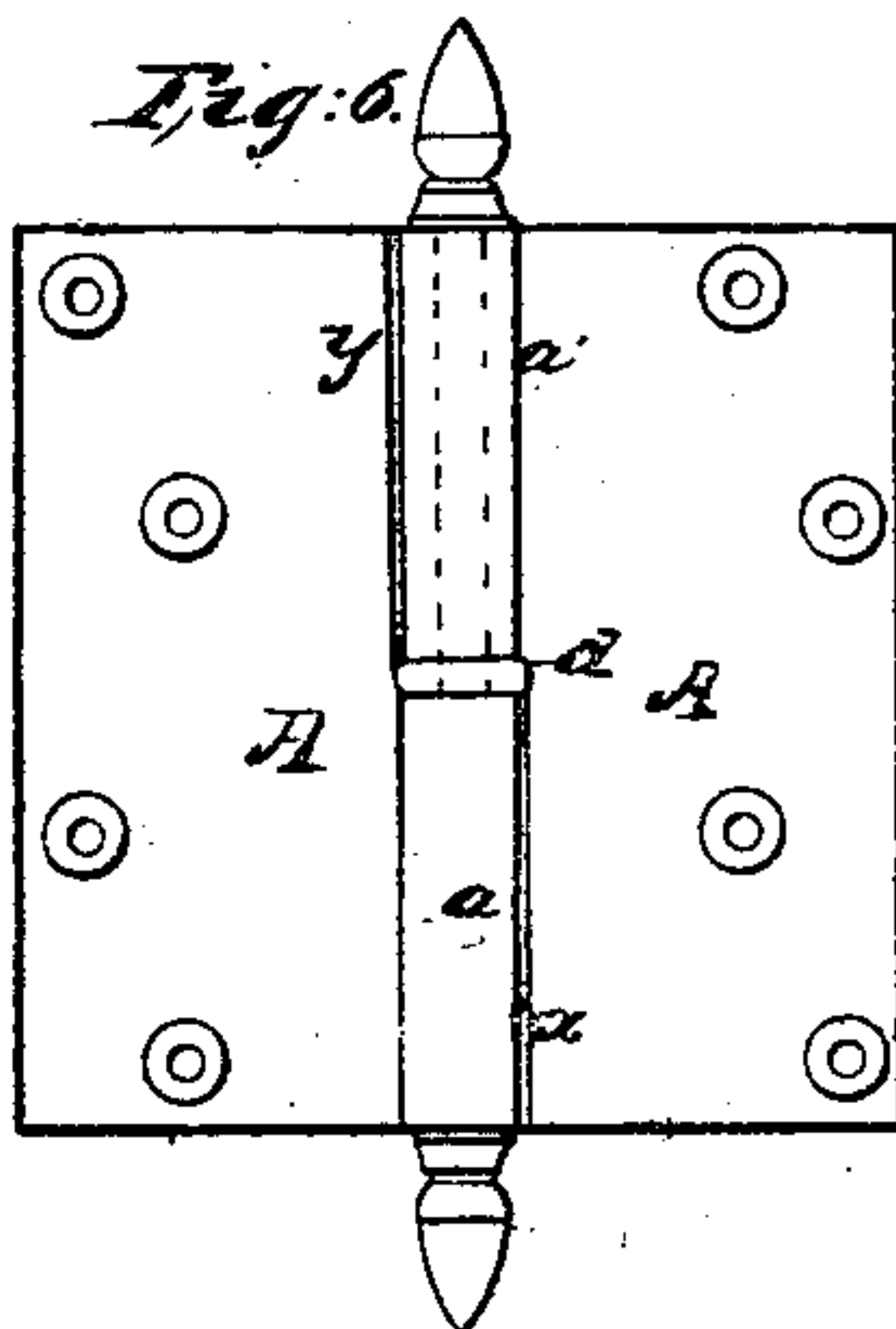
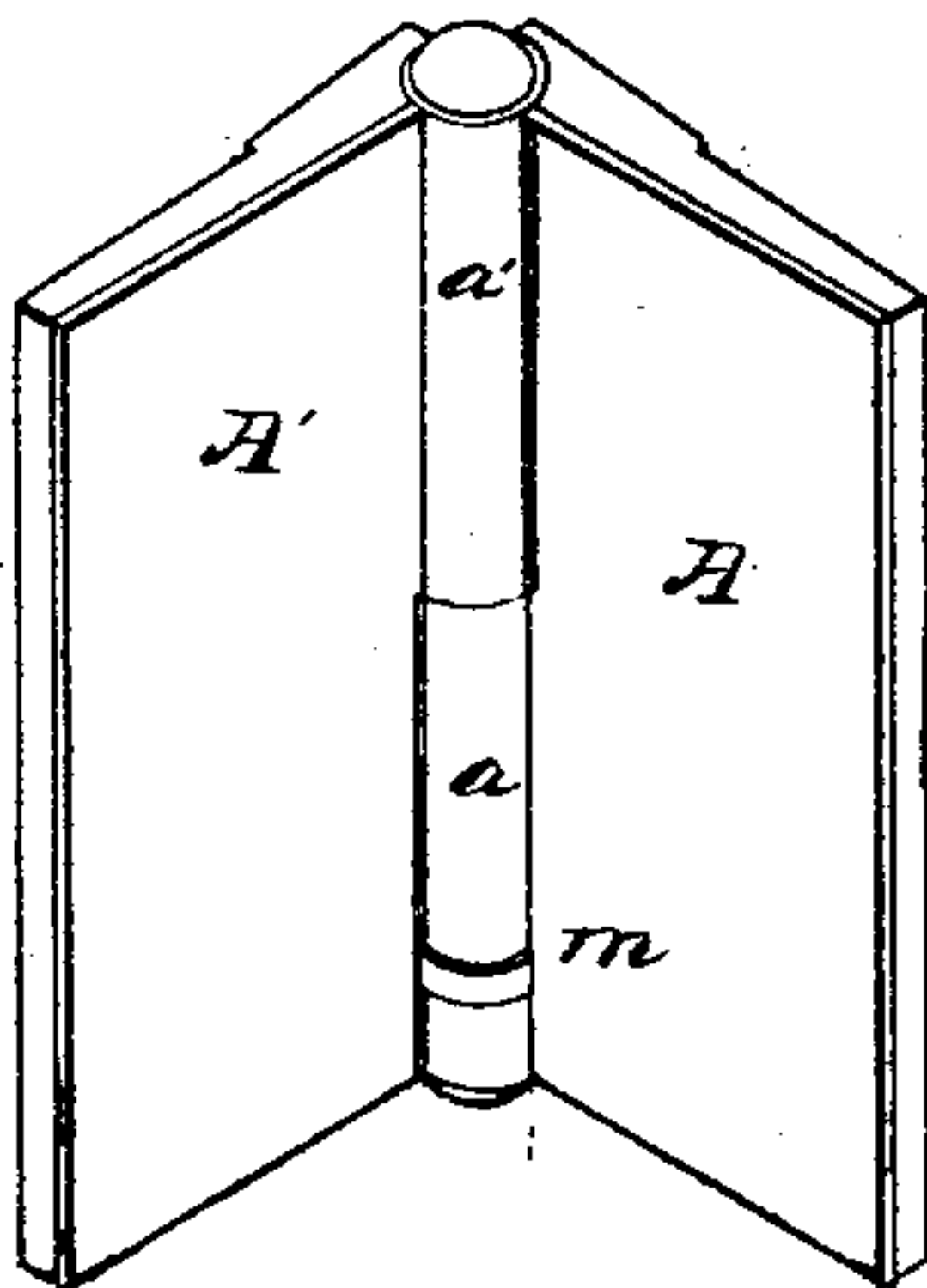


Fig: 6.



Witnesses:
Wm. Albert Steel
S. H. Hume & Co. Secy.

Inventor:
A. Rankin
By his atty
J. H. Hume

United States Patent Office.

ANDREW RANKIN, OF PHILADELPHIA, PENNSYLVANIA.

Letters Patent No. 61,458, dated January 22, 1867.

IMPROVEMENT IN BUT-HINGES.

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, ANDREW RANKIN, of Philadelphia, Pennsylvania, have invented an Improvement in Hinges; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon.

My invention relates to an improvement in what are known as lift-off hinges, and my improvement consists of a roller applied to the two plates of a hinge, substantially as described hereafter, so as to receive a portion of the strain which in ordinary hinges is received entirely by the pin of the joint, and so that undue wear and tear of the pin and excessive friction of the joint may be avoided, the improved hinge at the same time presenting a neater appearance than a lift-off hinge of the ordinary construction.

In order to enable others skilled in the art to make and use my invention, I will now proceed to describe its construction and operation. On reference to the accompanying drawing, which forms a part of this specification—

Figure 1 is a vertical section of the hinge at the joint.

Figure 2, an exterior view of the rear of the hinge.

Figure 3, a sectional plan.

Figure 4, a perspective view; and

Figure 5, a view of an ordinary lift-off hinge.

Similar letters refer to similar parts throughout the several views.

The ordinary lift-off hinge, as seen in Figure 6, consists of the plate A, with its tubular projection *a*, and the plate A', with its tubular projection *a'*, the pin *e* forming the joint being secured to the projection *a* of the plate A, and the projecting portion of the pin fitting snugly but freely in and passing through the projection *a'* of the plate A', so that the latter can be readily raised and detached from the pin. In hinges of this class, it is usual to place over the pin *e* a washer, *d*, which intervenes between the lower end of the projection *a'* of one plate and the upper end of the projection *a* of the other plate. This washer serves in a measure to diminish friction, but does not prevent the distortion of the hinge, which must eventually take place, as the strain is in the direction of the arrow, fig. 6, owing to the weight of the door, which is secured to the plate A'. This strain gradually wears the pin *e* until the edge *x* bears against the tubular projection *a* of the plate A, while the projection *a'* of the plate A' recedes from the edge *y* of the plate A, thereby leaving an unsightly opening or gap at *y*, and causing undue friction at *x*. In order to prevent this, I make in the tubular projection *a* of the plate A' a transverse recess for the reception of the horizontal roller *m*, which turns on the pin *e*, or on a separate pin, *f*, inserted from below. The roller bearing against the concave edge *x'* of the plate A' serves to relieve the pin *e* from a great portion of the strain to which it is subjected in the ordinary hinge, the two plates are maintained in their proper relative position, the objectionable openings at the joints above alluded to are thus prevented, the free movement of the plates is not obstructed by undue friction, and the hinge presents generally a neater appearance, especially as seen in fig. 2.

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

The roller *m*, adapted to the two plates of a lift-off hinge, substantially in the manner and for the purpose herein set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ANDREW RANKIN.

Witnesses:

H. HOWSON,

C. HOWSON.