

(No Model.)

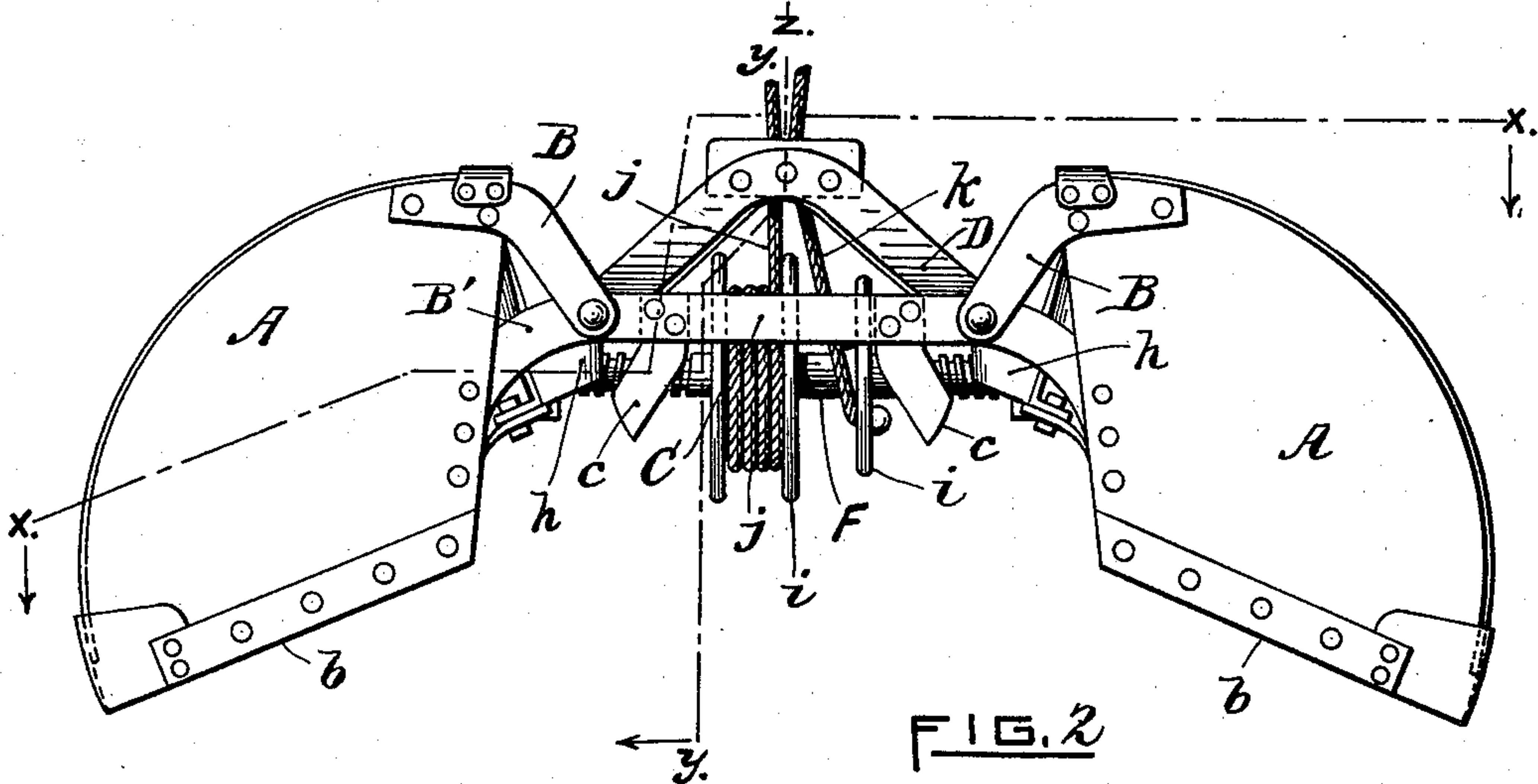
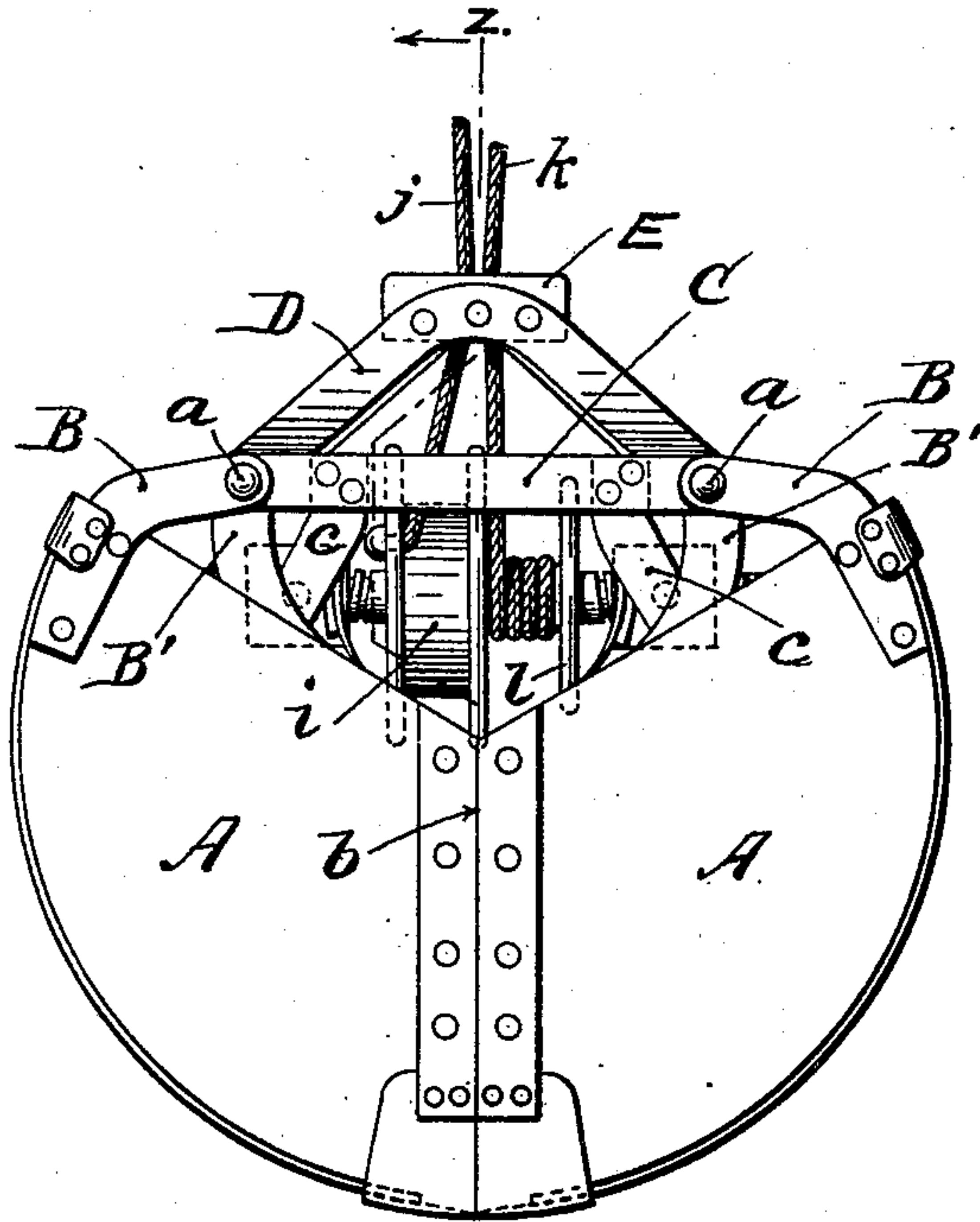
2 Sheets—Sheet 1.

C. PAY.
HOISTING BUCKET.

No. 539,921.

Patented May 28, 1895.

FIG. 1.



WITNESSES.

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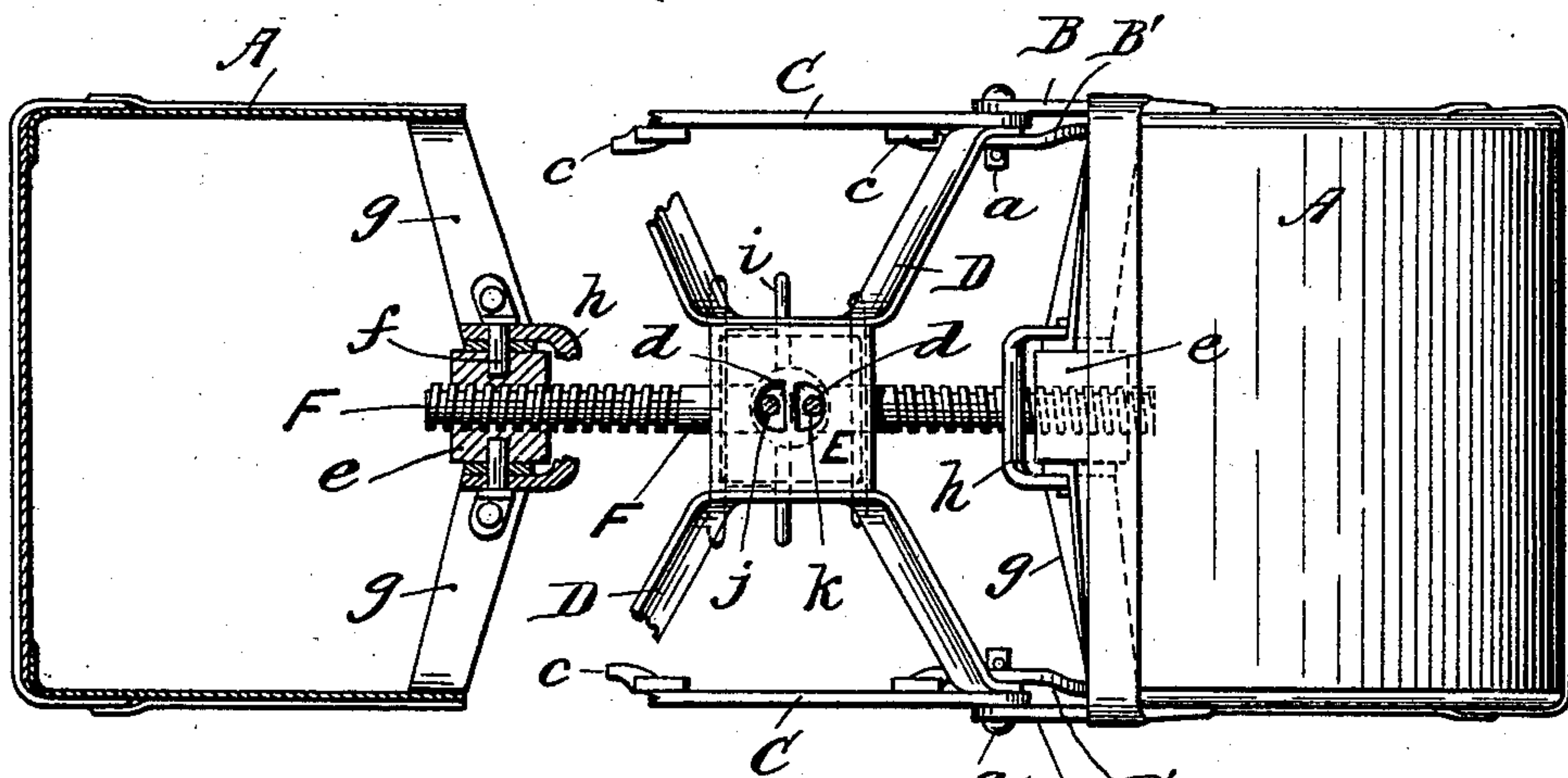


FIG. 3.

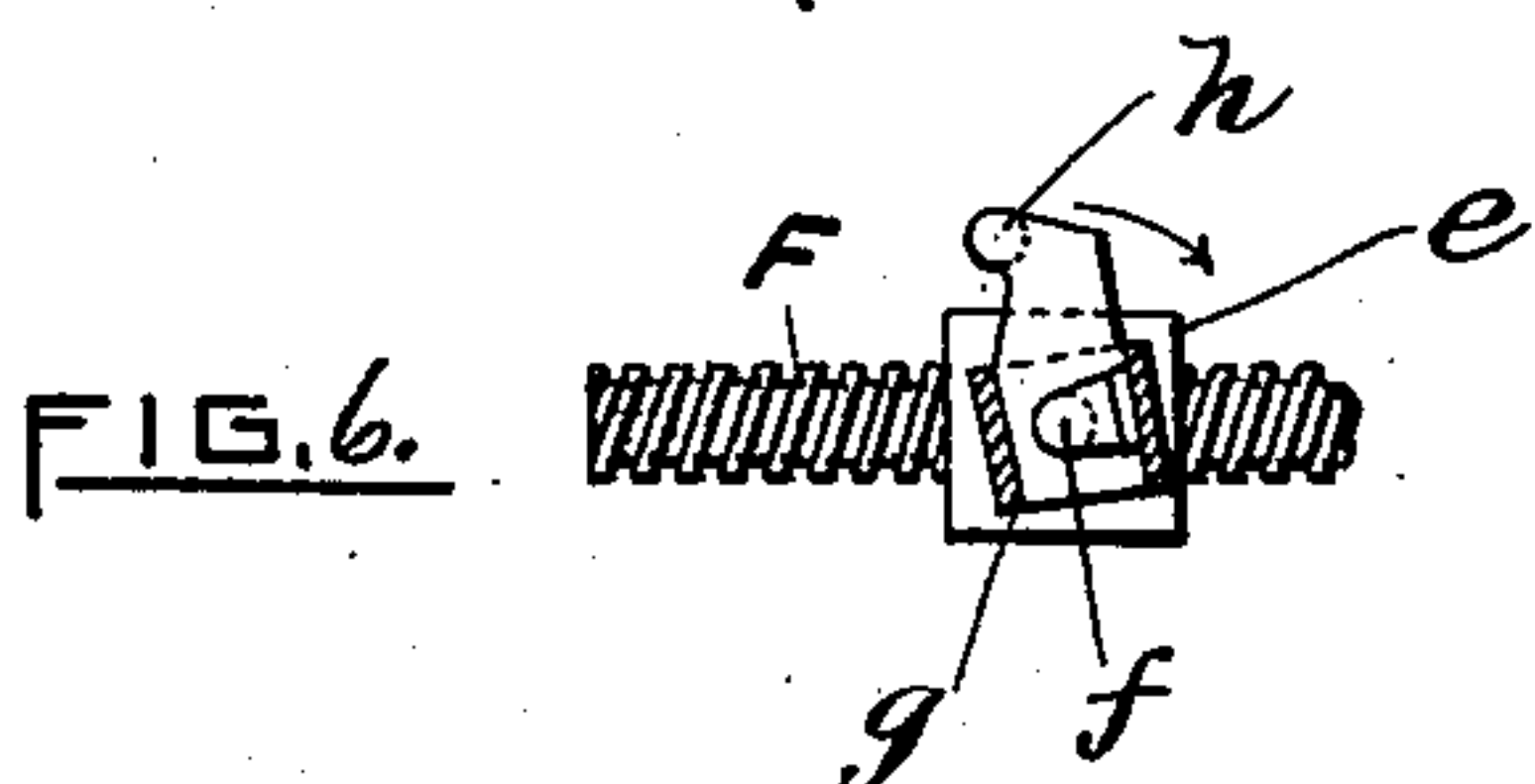


FIG. 6.

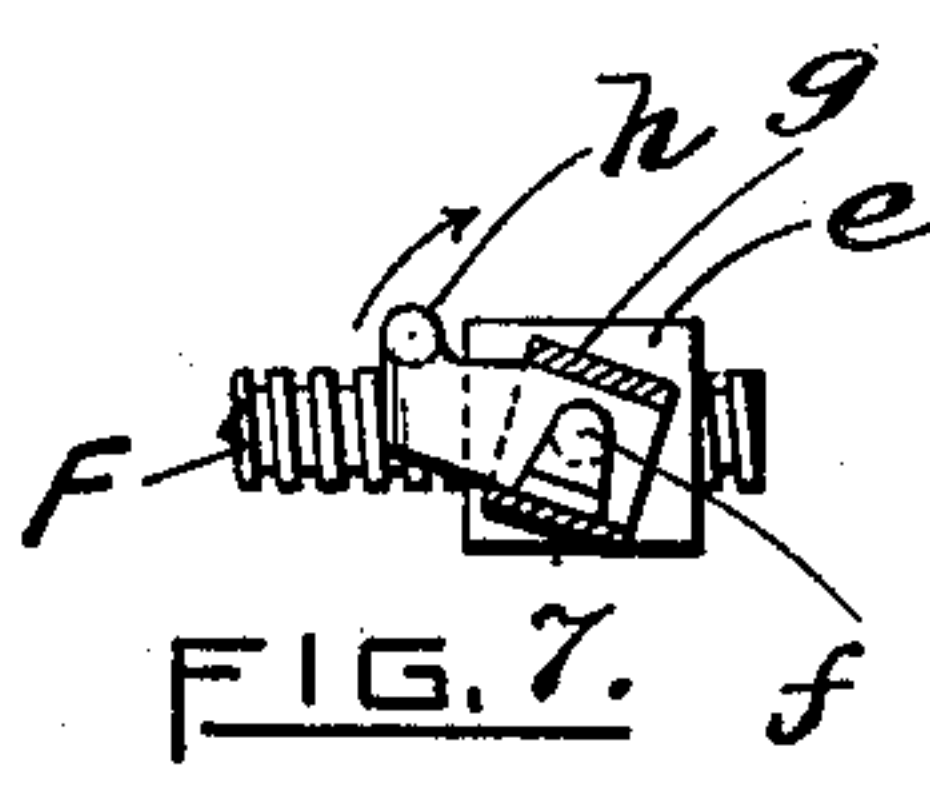


FIG. 7.

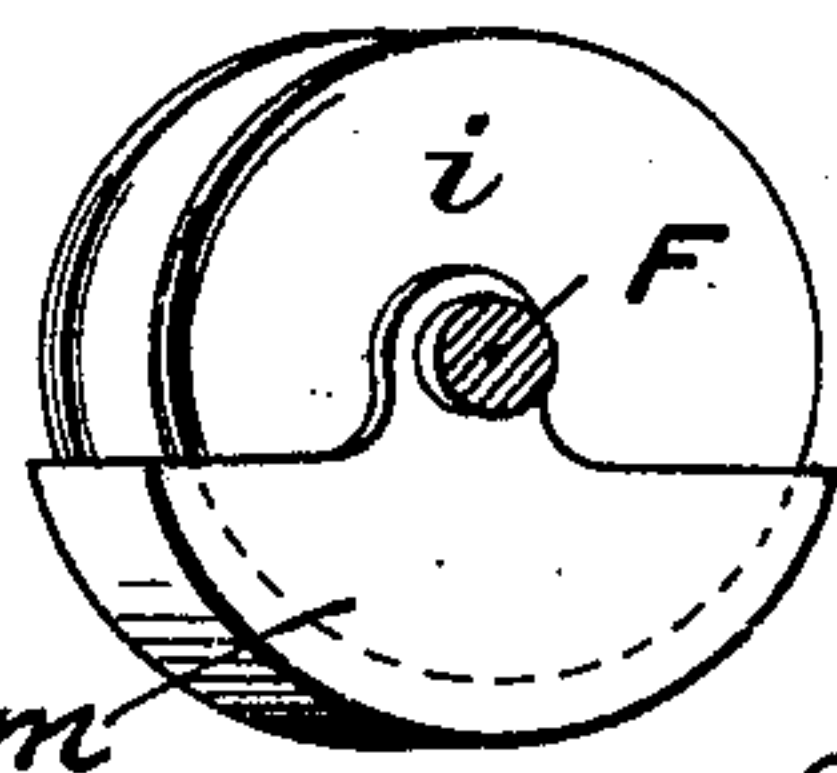


FIG. 8.

FIG. 5.

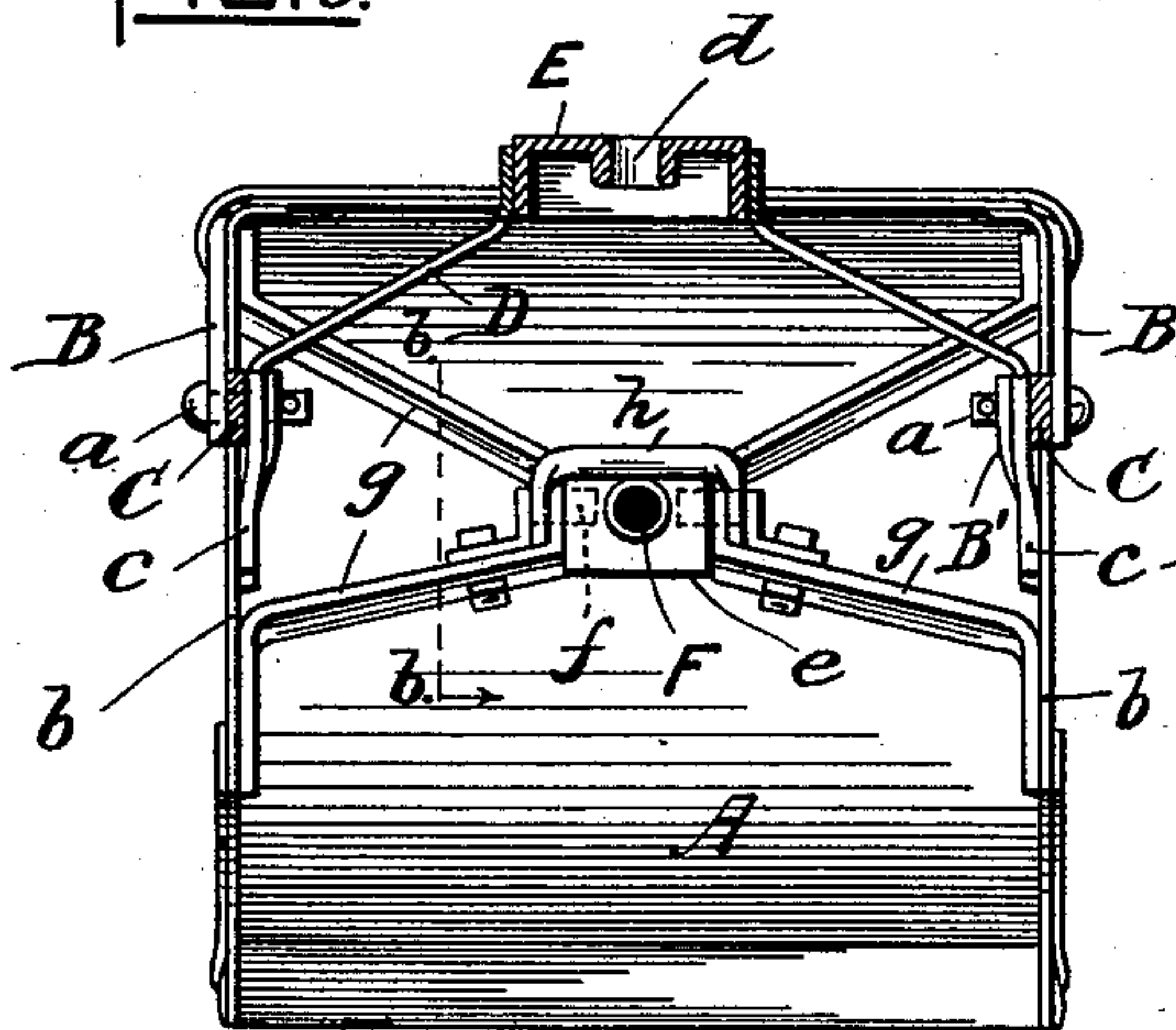
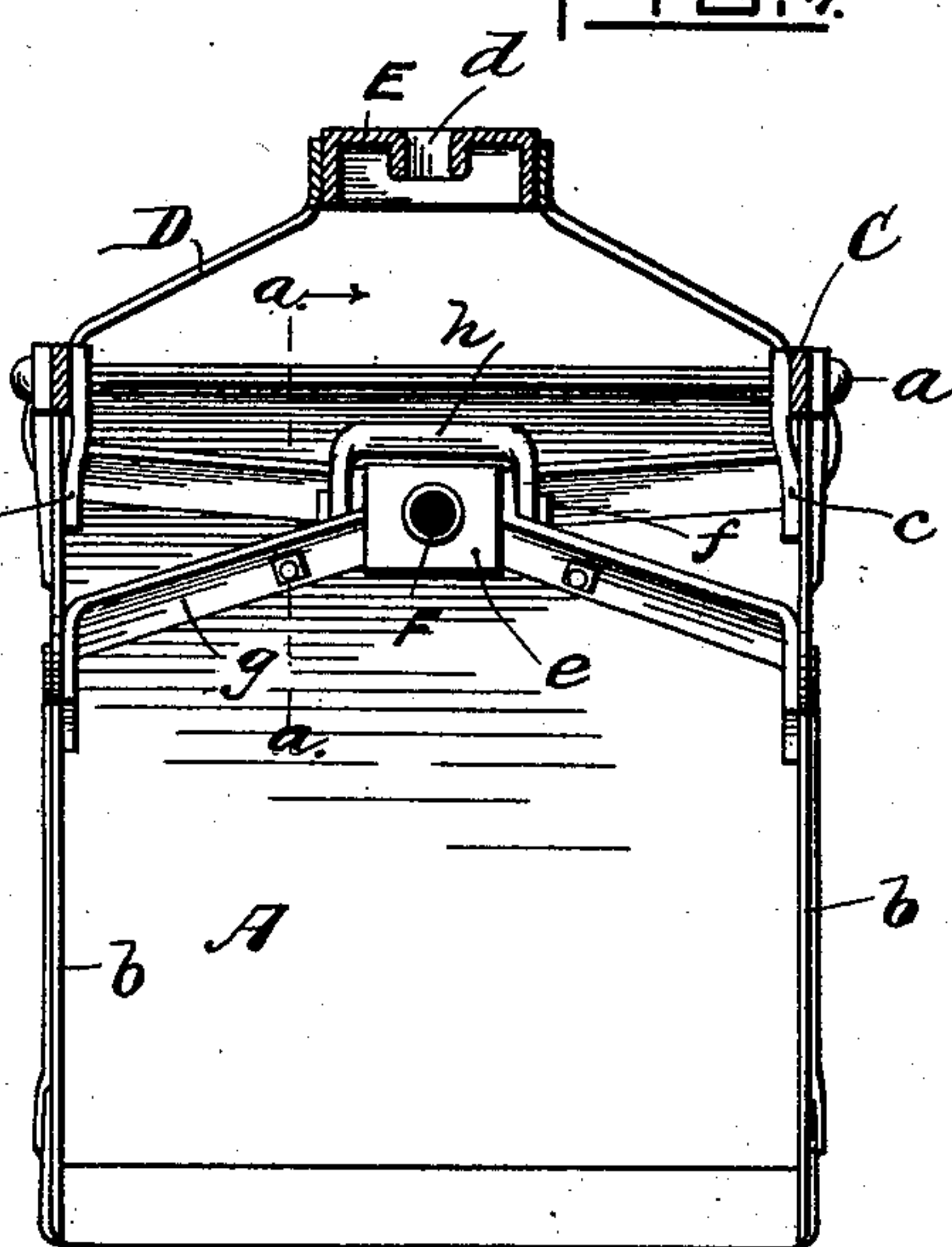


FIG. 4.



WITNESSES.

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UNITED STATES PATENT OFFICE.

CHARLES PAY, OF PROVIDENCE, RHODE ISLAND.

HOISTING-BUCKET.

SPECIFICATION forming part of Letters Patent No. 539,921, dated May 28, 1895.

Application filed March 23, 1895. Serial No. 542,978. (No model.)

To all whom it may concern:

Be it known that I, CHARLES PAY, of Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Hoisting-Buckets; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

Figure 1 is an end view of the bucket closed. Fig. 2 is an end view of the bucket open. Fig. 3 is a top view taken on the line $x x$, Fig. 2, showing the working mechanism and supporting-frames. Fig. 4 is a vertical section taken on line $y y$ of Fig. 2, showing the general arrangement for holding the worm-nut in position on the screw-shaft. Fig. 5 is a similar view taken on line $z z$, Fig. 1. Fig. 6 is a view taken on line $a a$ of Fig. 4, showing position of the yoke h when the bucket is closed. Fig. 7 is a similar view taken on line $b b$ of Fig. 5 to show how the yoke rests on the screw-shaft when the bucket is open. Fig. 8 is the drum with a hood suspended from the screw-shaft to prevent the material to be lifted from collecting on the cable or chain.

The object of my invention is to produce a bucket in which the halves shall be capable of a wider or greater opening, and is so constructed as to require a much less height in proportion than any in use at the present time, and which serves to give the bucket a greater downward tendency in closing and enables it to grasp or secure a greater quantity of material, and at the same time possessing greater closing power, the three of which features are especially useful in operating upon coarse material, and it consists in the combination and arrangement of devices as hereinafter described. In a bucket of this class it is desirable before dropping it upon the material to open the two halves as wide as possible, whereby the operating or cutting edges will be brought into a line perpendicular to the surface of the material to be removed.

In the drawings $A A$, represent the two halves of the bucket which together occupy about two thirds of a circle and are provided with short arms B, B' riveted at the upper

ends of the halves and project inwardly to form around a fulcrum or pin a , on which said halves swing. A connecting bar C , extends horizontally from center to center of the pin a , and on the inner side and from said pin a , is attached the supporting frame D , which inclines inwardly toward the center of the machine and is riveted to a square shaped plate E , the center of which has two openings d , through which the chains or cables pass. (See Fig. 3.)

On the inner side of the connecting bar C , are two short arms c , which are provided for bringing the edges b , of the halves uniformly together, this being accomplished by the lower side of the arms c , coming in contact with the arms B' , of the halves of the bucket before the edges of said halves come together.

In referring to Fig. 3— F , is a shaft upon which a right and left hand thread is formed on either end and which screws into the nuts e , said nuts being pivoted on trunnions f , which in turn are fastened to the V-shaped frame g . (See Fig. 5.) A yoke h , the sides of which are held in place by the trunnions,—is made to form over the screw shaft to act as a stop when the bucket is wide open, said yoke h , bearing on the screw shaft. (See Figs. 6 and 7.)

j , is the operating cable or chain which rotates the shaft F , in closing the bucket through its action upon the large flanged drum i , said drum being placed about midway on the shaft and keyed to it.

k , is the cable which raises or lowers the bucket. Said cable passes around the shaft F , and is held on the flange l , which is also keyed to the shaft.

The horizontal center of the screw shaft is at a convenient height to secure the requisite leverage in closing the bucket.

In referring to Fig. 1,—the bucket being closed, as it is let down by the cable k , the cable j , is slackened, when the halves, A, A , being supported or pivoted on the pins a, a , open outwardly by the rotating of the screw shaft, said shaft screwing the nuts farther apart from each other, the width of the opening of the halves depending upon the amount of slack in the cable j , and being at all times under the control of the operator. The halves

A, A, having been opened as shown in Fig. 2—
the bucket falls upon the material to be re-
moved. The operating cable *j*, is then drawn
upward, which as it unwinds from the drum
5 *i*, rotates the shaft F, in the opposite direction
until the two halves of the bucket are again
brought together as they have a tendency to
dig down into the material which results in
filling the bucket. When the bucket is closed
10 it is hoisted up and discharged at the proper
time and place by the slackening of the cable *j*.

It will be very readily observed that the
vertical space required for the operation of
the bucket is much less than that necessary
15 for the practical and successful operation of
other buckets now in use, and at the same
time the two halves A, A, may be opened to a
width which will bring their edges in a verti-
cal line with the material to be removed and
20 the securing of a full load even when the ma-
terial to be removed is very coarse.

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

The combination of the arms B, B' with the
pins *a*, the connecting bar C, between said 25
pins *a*, with the guide arms *c*, fastened thereon
the V-shaped frame *g*, with the trunnions *f*,
for supporting the nut and yoke in position
on the said frame *g*, and the screw shaft F,
having a right and left hand thread formed 30
thereon for rotating in the nuts *e*, with the
drum *i*, fastened to said shaft, the central
frame D, which supports the halves of the
bucket, and the cable *j*, which rotates the shaft,
the whole constructed and operating on the 35
halves A, A, to close the bucket, substantially
as described.

CHARLES PAY.

Witnesses:

STEPHEN F. CHACE.

WILLIAM BROWN.