

No. 730,717.

PATENTED JUNE 9, 1903.

J. A. STINE.
CHIMNEY FLUE CLEANER.
APPLICATION FILED APR. 21, 1902.

NO MODEL.

2 SHEETS—SHEET 1.

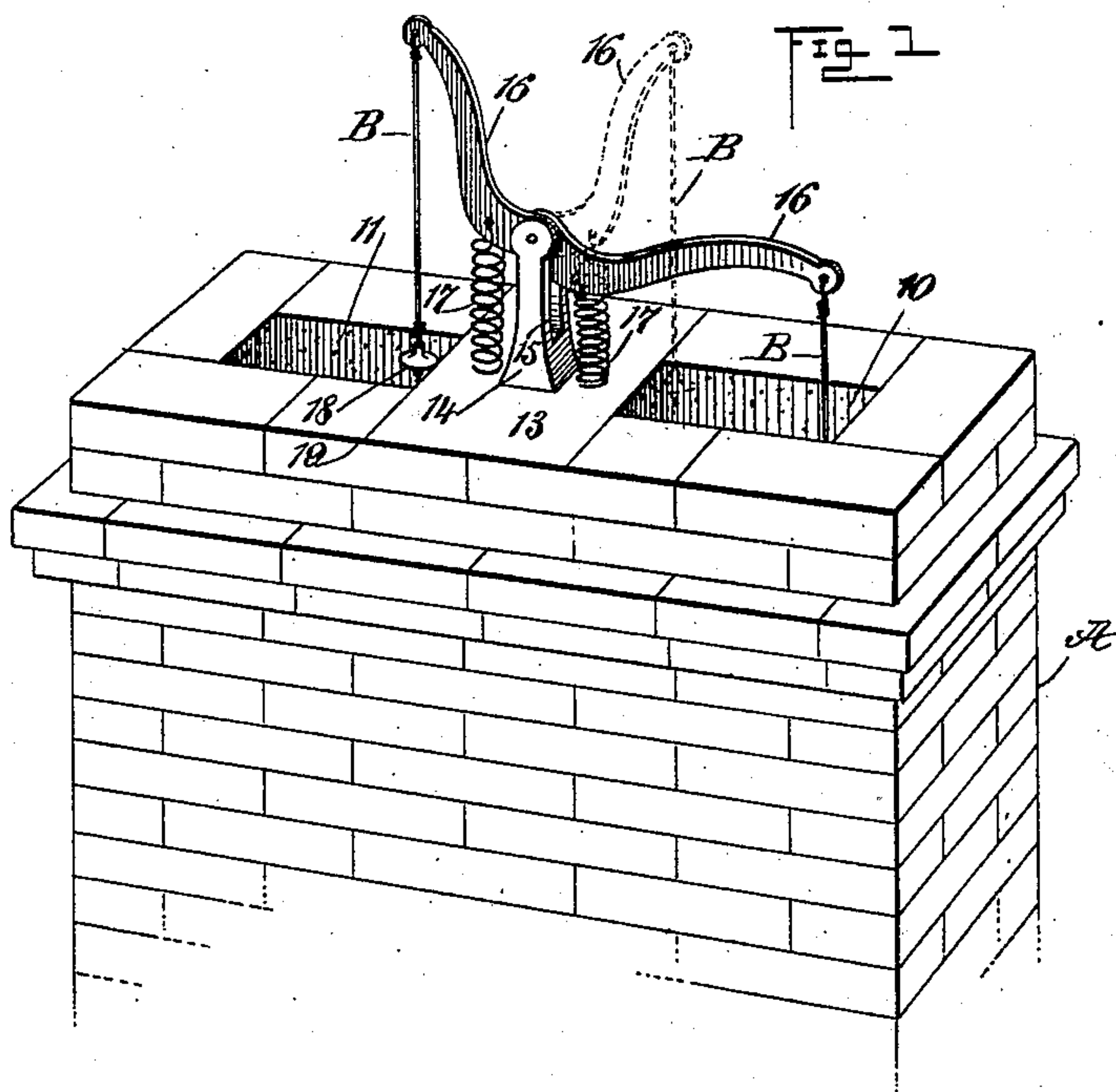
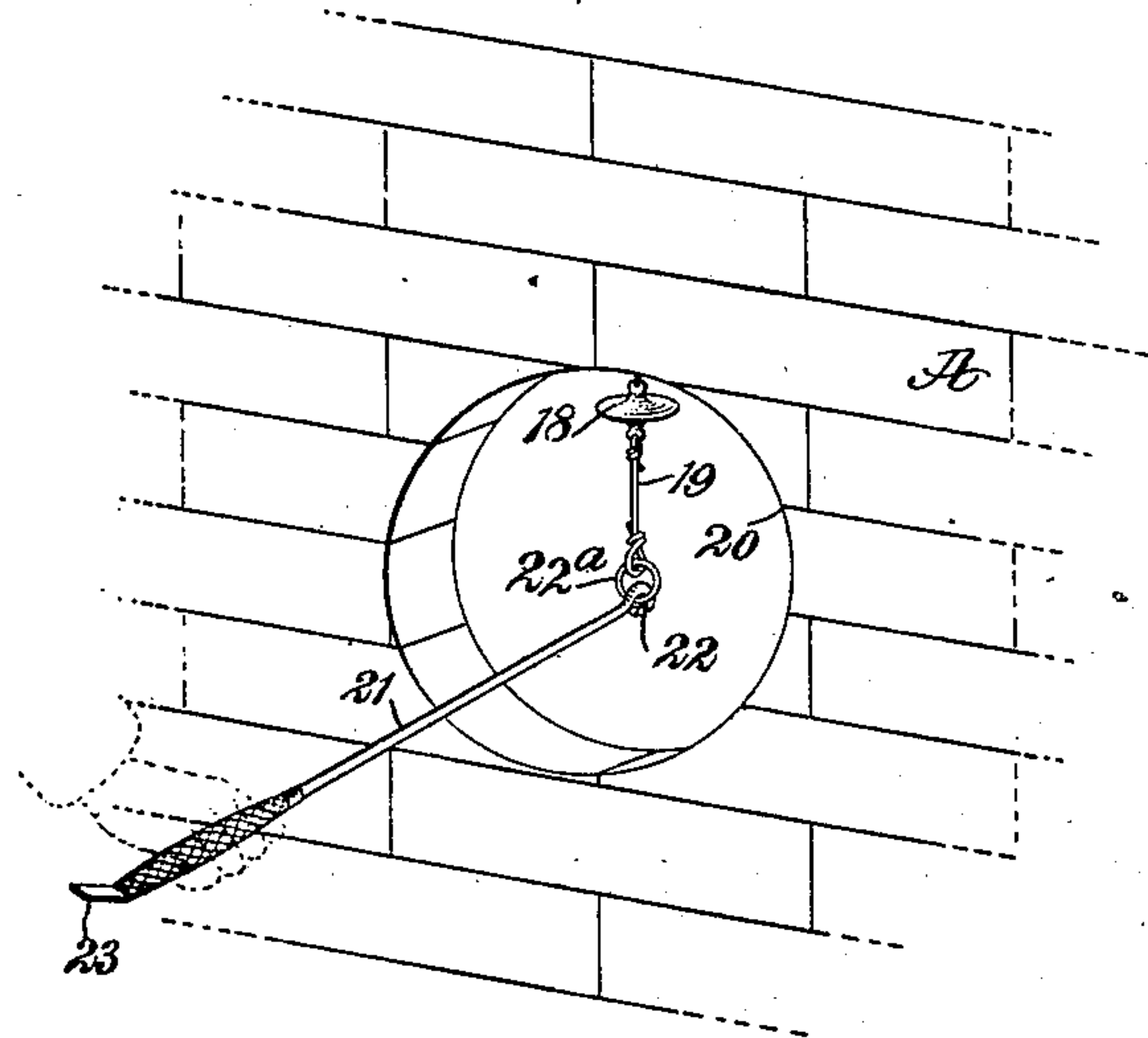


Fig. 1



WITNESSES:

Charles H. Stine
John A. Stine

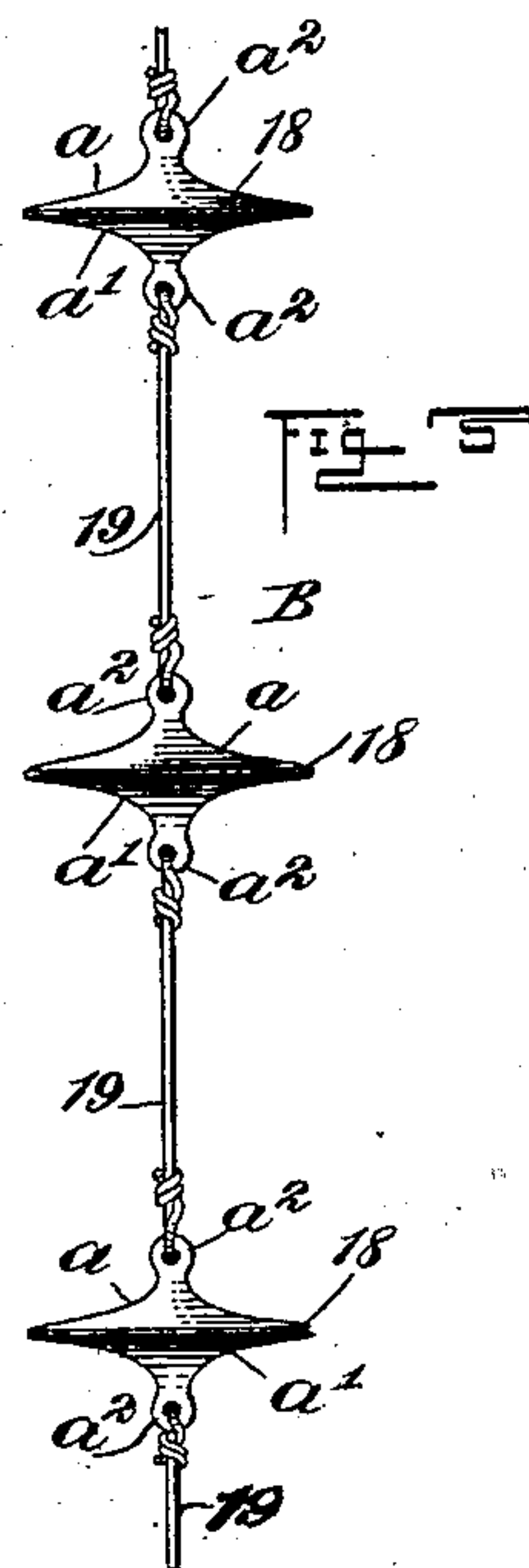


Fig. 3

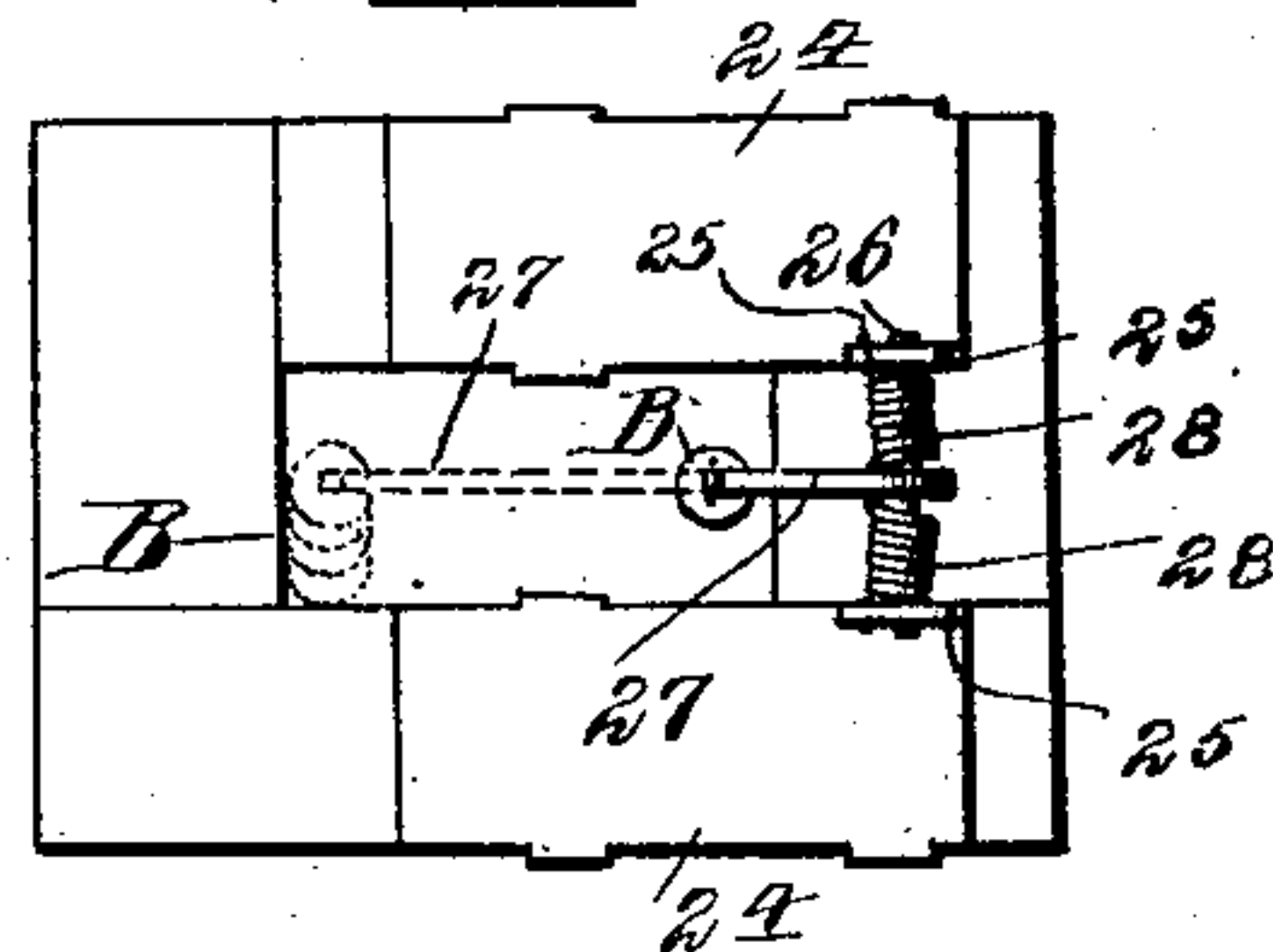
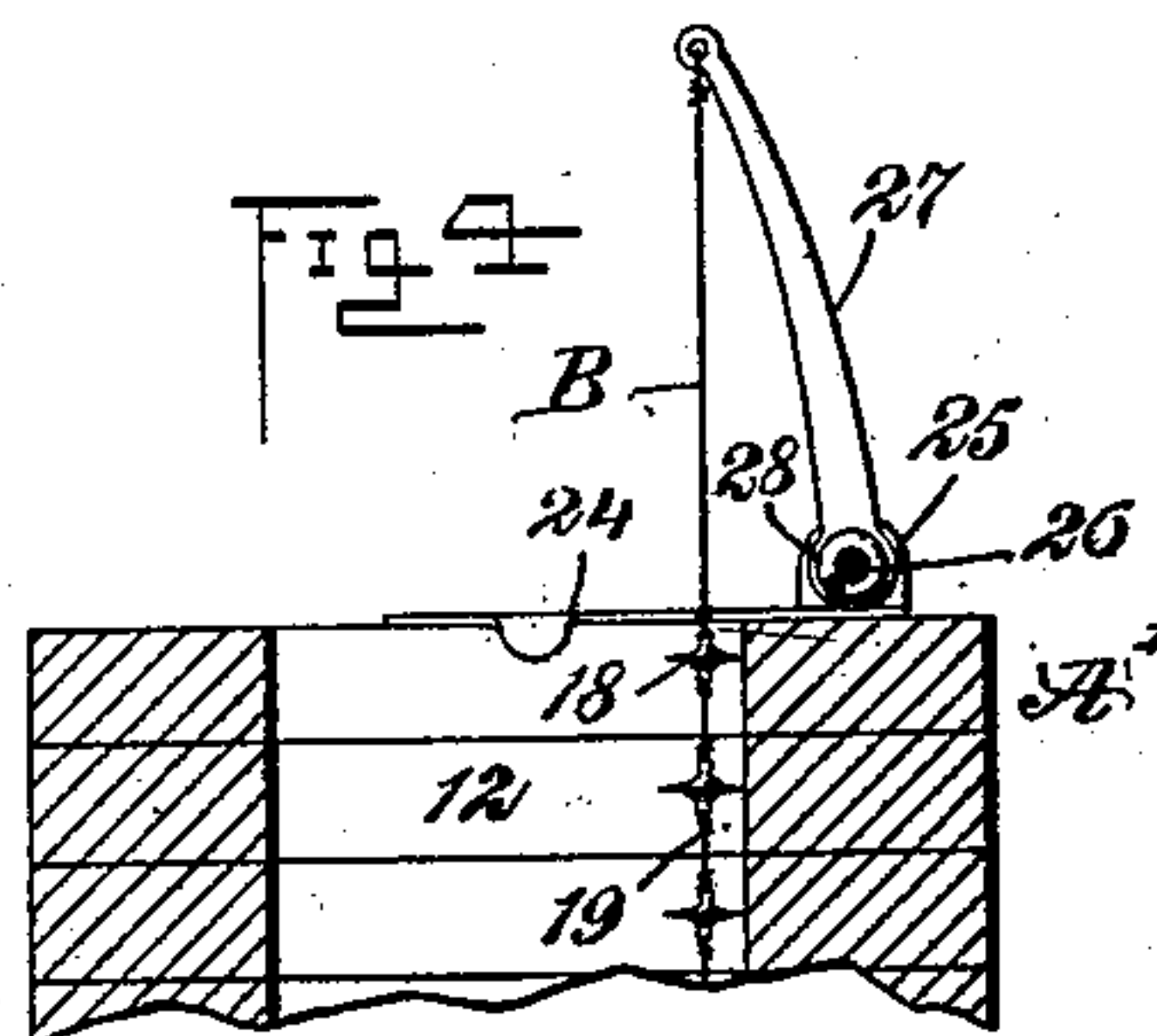


Fig. 4



INVENTOR

Joseph A. Stine

BY *Munn & Co.*

ATTORNEYS.

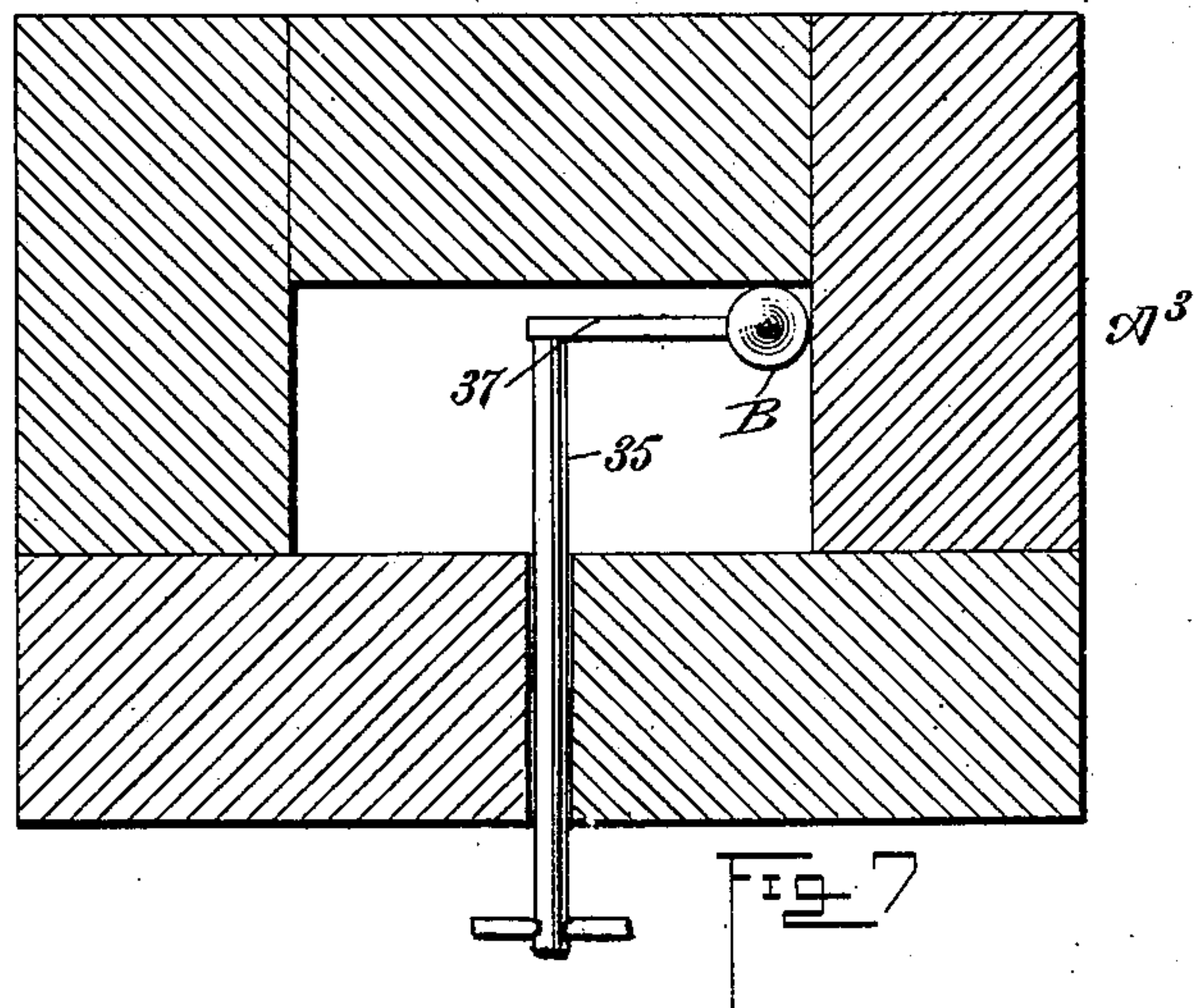
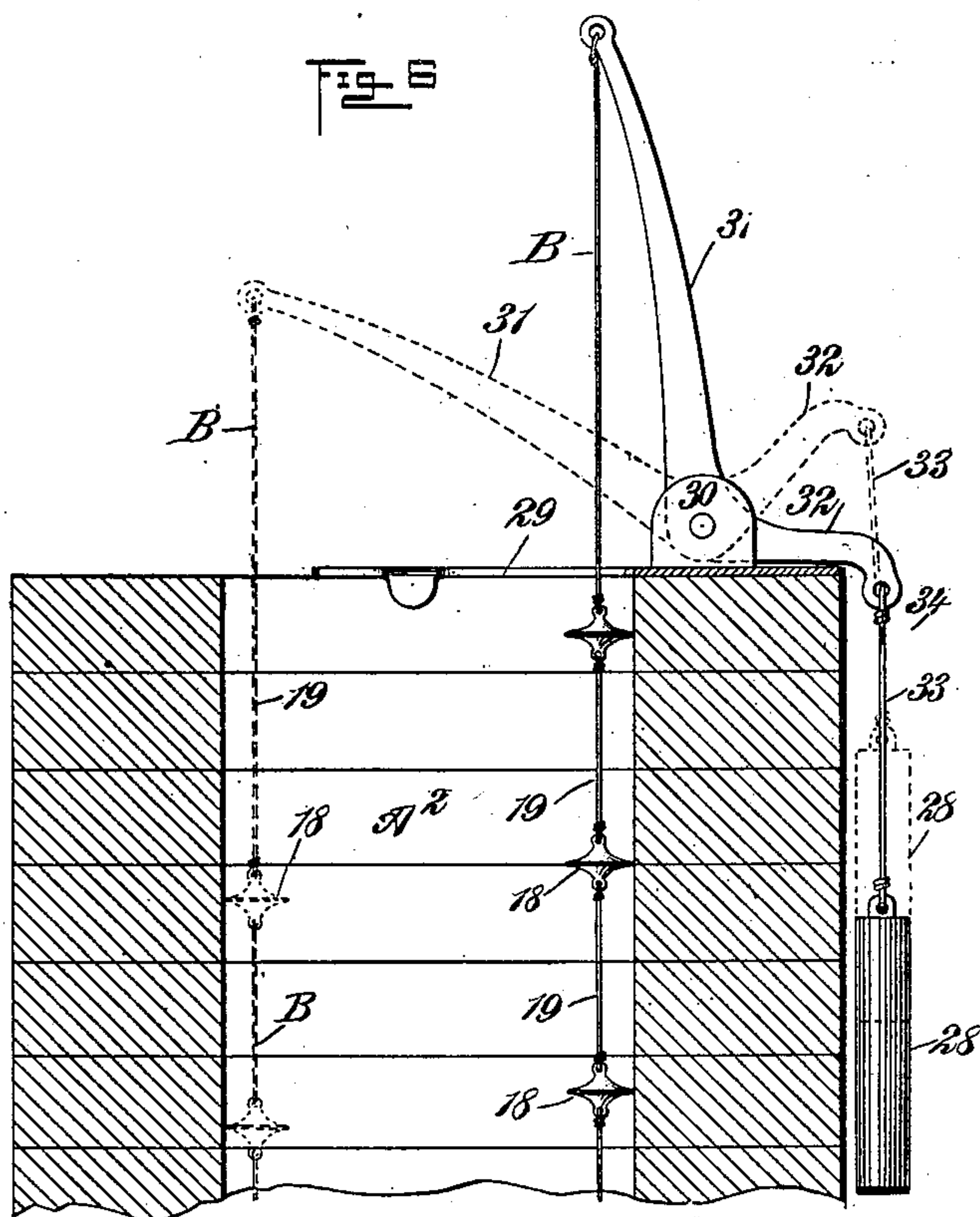
No. 730,717.

PATENTED JUNE 9, 1903.

J. A. STINE.
CHIMNEY FLUE CLEANER.
APPLICATION FILED APR. 21, 1902.

NO MODEL.

2 SHEETS—SHEET 2.



WITNESSES:

W. H. H. H. H.
W. H. H. H. H.

INVENTOR

Joseph A. Stine

BY

M. M. M.
ATTORNEYS.

UNITED STATES PATENT OFFICE.

JOSEPH A. STINE, OF MANISTEE, MICHIGAN.

CHIMNEY-FLUE CLEANER.

SPECIFICATION forming part of Letters Patent No. 730,717, dated June 9, 1903.

Application filed April 21, 1902. Serial No. 103,944. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH A. STINE, a citizen of the United States, and a resident of Manistee, in the county of Manistee and State of Michigan, have invented a new and Improved Chimney-Flue Cleaner, of which the following is a full, clear, and exact description.

The purpose of the invention is to provide a chimney-flue-cleaning device which will be effective on the chimney and which will hang permanently in the flue, and to so construct the device that it will present a chain or string of scrapers capable of being operated by any one at any time through any suitable opening in the flue, and, furthermore, to so construct and suspend the chain or string of scrapers that said scrapers may be conveniently directed to operative engagement with any portion of the flue.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view of a double chimney and a perspective view of a double form of the device applied thereto. Fig. 2 is a perspective view of a portion of the chimney containing the device, showing an opening therein and an instrument introduced into said opening to operate the device. Fig. 3 is a side elevation of a portion of the chain of scrapers. Fig. 4 is a vertical section through the upper portion of the chimney having a single flue and a sectional side elevation of the form of the device adapted thereto. Fig. 5 is a plan view of a chimney and a cleaner applied constructed as shown in Fig. 4. Fig. 6 is a vertical section through the chimney and a sectional side elevation of a cleaner in which counterbalance-weights are employed instead of springs, and Fig. 7 is a horizontal section through a chimney or flue and the string or chain of scrapers and a plan view of a mechanical device for operating the said string or chain of scrapers.

In Fig. 1 I have shown a chimney A, having two flues 10 and 11, and in Fig. 4 I have shown a chimney A', provided with a single flue 12. In the adaptation of the device to the double-flue chimney A a base-plate 13 is secured upon the top of the chimney over the division-wall of the flues, and a standard 14 is secured to the central portion of the base-plate and has a vertical slot 15 in its upper portion.

The inner ends of two oppositely-disposed arms 16 are pivoted in the slot 15 of the standard 14, and these arms are more or less curved and are normally held in an upright position by springs 17, attached to the base-plate 13 and to the arms 16 near their pivoted portions. Each arm 16 is of such length that when drawn downward to a substantially horizontal position it will extend practically across the upper end of the flue in connection with which the arm is to be used. Any equivalent of the springs may be employed.

A chain of scrapers B is secured to the outer end of each arm 16, and each chain consists of disks 18 and links 19 connecting the disks, as is shown in Fig. 3. The disks 18 are preferably made of cast or malleable iron and are provided with conical upper and lower faces a and a' and with eyes a^2 at the apexes of the said conical faces. The links 19 preferably consist of a single strand of galvanized wire of suitable gage or a number of such strands twisted or banded together, and the ends of the links 19 have loop connections with the eyes a^2 of the scraper-disks.

The chain of scrapers B may be of any desired length; but said chain is preferably made to terminate at or within reach of a stovepipe-hole 20 or its equivalent in the chimney or a hole in the chimney at the cellar, so that the chain of scrapers B in the flue may be grasped and drawn downward and moved laterally by hand or through the medium of a suitable instrument. One such instrument is shown in Fig. 2, and consists of a shaker rod or bar 21, having a hook 22 at its outer end to engage with a ring 22^a at the lower end of the chain of scrapers B, and a mirror 23 at its handle end at an angle to

the handle, which mirror when introduced into the pipe-hole 20 will reflect the interior of the flue to a greater or less extent and will indicate to the operator the extent to which the chimney has been cleaned and where the chain of scraping-disks should be directed.

In the adaptation of the device to a chimney having a single flue, as is shown in Fig. 4, the base 24 is shown in two opposing members, adapted to be clamped upon the top of the chimney at two opposing sides, and said base 24 serves to strengthen the chimney by holding the top bricks in position. Lugs 25 are formed upon the members of the base-plate 24, and a rod 26 is secured to the lugs. At the center of the rod 26 the lower portion of a preferably-curved arm 27 is loosely mounted, and the arm 27 is normally held in a practically upright position by springs 28, coiled around the rod at each side of the arm and secured at one end to the arm and at the other end to a lug 25 on the base 24, and the chain or string of scrapers B heretofore described is secured to the outer end of said arm. The springs employed are sufficiently strong to raise a chain of scrapers after said scrapers have been drawn downward and released; but instead of springs counterbalancing-weights may be employed to normally hold the arms in an upright position. The distance from disk to disk in the scraper-chain is a little less than the sweep of the arm carrying the chain, so that no portion of the flue can escape being cleaned by the scraping-disks 18. If desired, a crank-handle may be secured to the lower end of a chain of scrapers B for operating the same or other mechanical devices may be used for the purpose.

In the operation of the device the chain of scrapers B is suddenly drawn downward and then permitted to move upward through the action of the controlling-springs, during both of which operations the chain of scrapers is directed to the right or left, forward or backward, or a circular motion is imparted to the said chain, enabling every portion of the flue, including the corners, to be thoroughly cleaned.

The device is a good lightning-conductor and will protect the chimney from damage from such source.

In Fig. 6 I have illustrated a counterbalance-weight 28, employed as a substitute for the springs 17 and 28, (shown in the other views,) and in this connection a base-plate 29 is secured upon the top of the chimney or flue A², and said base-plate is provided with lugs 30, between which an arm 31 is pivoted, preferably curved to a greater or less extent in direction of the flue A², and at the upper end of said arm the upper extremity of a chain or string of scrapers is secured, the scrapers being of the same construction as has been described. The arm 31 at its lower end is provided with an outwardly and downwardly ex-

tending branch 32, connected with the weight 28 by a link, chain, or cord 32. The weight 28 serves to normally hold the arm 31 in the upright position shown in positive lines in Fig. 6 and restores the arm to such position after it has been drawn down by tension upon the string or chain of scrapers, as is shown in dotted lines, when said string has been released from tension.

In Fig. 7 I have illustrated one way in which the chain or string of scrapers B can be mechanically operated at its lower end, which consists in mounting a shaft 35 to turn in the breast of the chimney or flue A³, the head 36 or enlargement on the outer end of the shaft serving as a handle, and at the inner end of the shaft 35 a crank-arm 37 is secured, and this crank-arm is attached in any approved manner to the said chain or string of scrapers. Thus by moving the said shaft the chain or string of scrapers may be brought into play upon all parts of the flue necessary to be cleaned.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In chimney-flue-cleaning devices, a support, an arm pivoted upon said support, a string of scrapers suspended from the arm and means for manipulating said device.

2. In chimney-flue-cleaning devices, a support, a spring-controlled arm pivoted upon the support, a string of scrapers suspended from the arm, and means substantially as described, for imparting movement to the string of scrapers and directing the movements thereof.

3. In chimney-flue-cleaning devices, a support, an arm pivoted upon the support, and a string of scrapers suspended from the arm, which string consists of disks, and links pivotally connected with the disks, as and for the purpose specified.

4. In chimney-flue-cleaning devices, a support, an arm pivoted upon the support, means attached to the arm for controlling its movement in one direction, and a string of scrapers suspended from the said arm, which string of scrapers consists of horizontally-located disks having conical upper and lower faces, and links pivotally connecting the said disks, as and for the purpose specified.

5. A chimney-flue-cleaning device, comprising an arm pivotally mounted at the top of a chimney or flue, a chimney-flue-cleaning device permanently suspended from the said arm, and comprising a series of scrapers and means for pivotally connecting the scrapers together, and means for manipulating the said device, as set forth.

6. A chimney-flue-cleaning device, comprising a series of scrapers, means for connecting the scrapers together to form a string of scrapers, a support at the top of a chimney, a curved arm pivoted upon said support and

to the free end of which the upper end of said
cleaning device is permanently secured,
means for manipulating the lower or free end
of said device, and means connected with the
5 said arm for normally holding the same in a
practically upright position, as set forth.
In testimony whereof I have signed my

name to this specification in the presence of
two subscribing witnesses.

JOSEPH A. STINE.

Witnesses:

JOHN W. SIBBEN,

JOHN N. JUNG.