

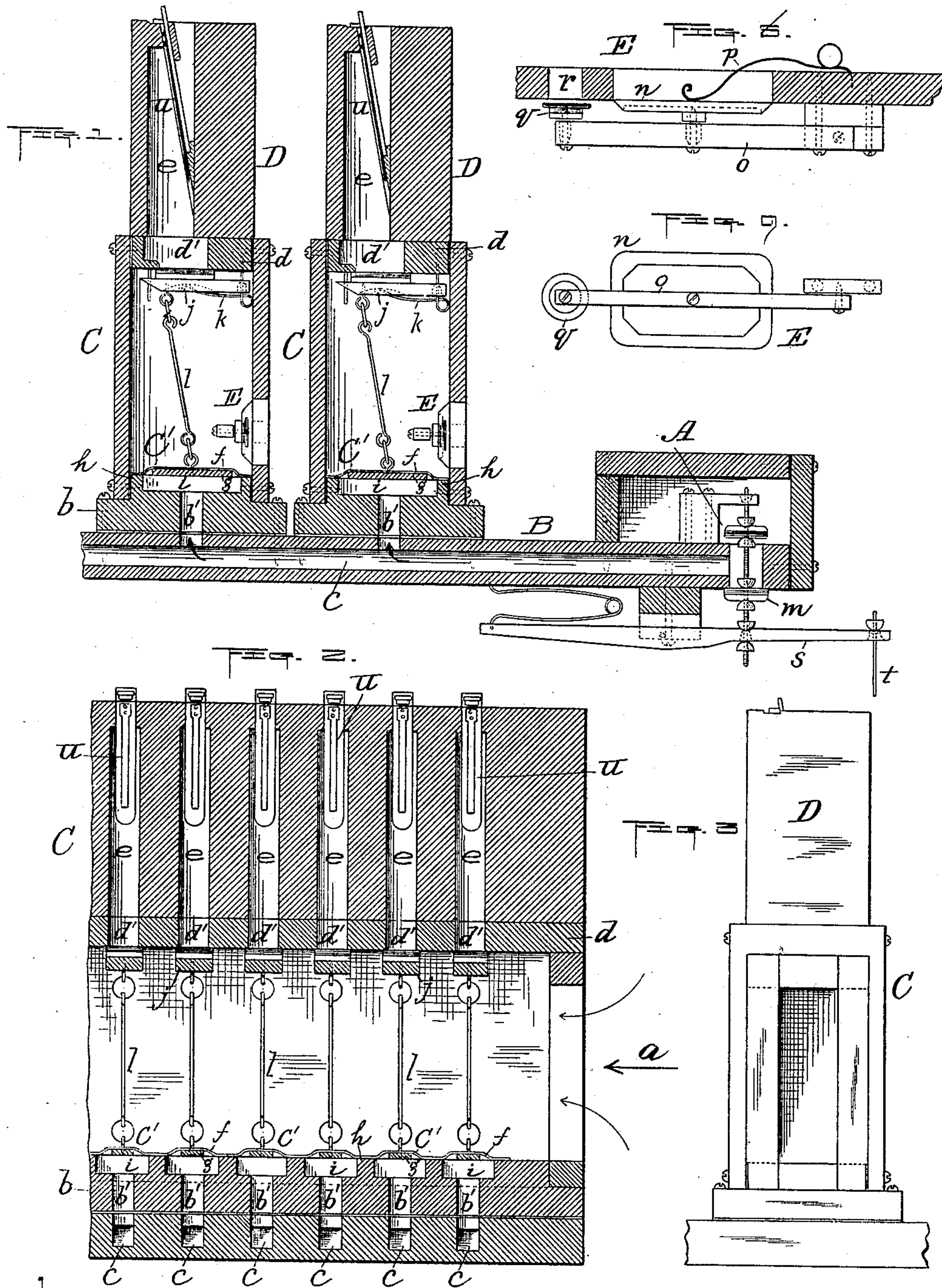
(No Model.)

2 Sheets—Sheet 1.

M. S. WRIGHT.
REED OR PIPE ORGAN.

No. 509,506.

Patented Nov. 28, 1893.



Witnesses,
W. B. Nourse.
C. Forrest Tesson.

Inventor,
Morris S. Wright.
By A. A. Barker. Atty

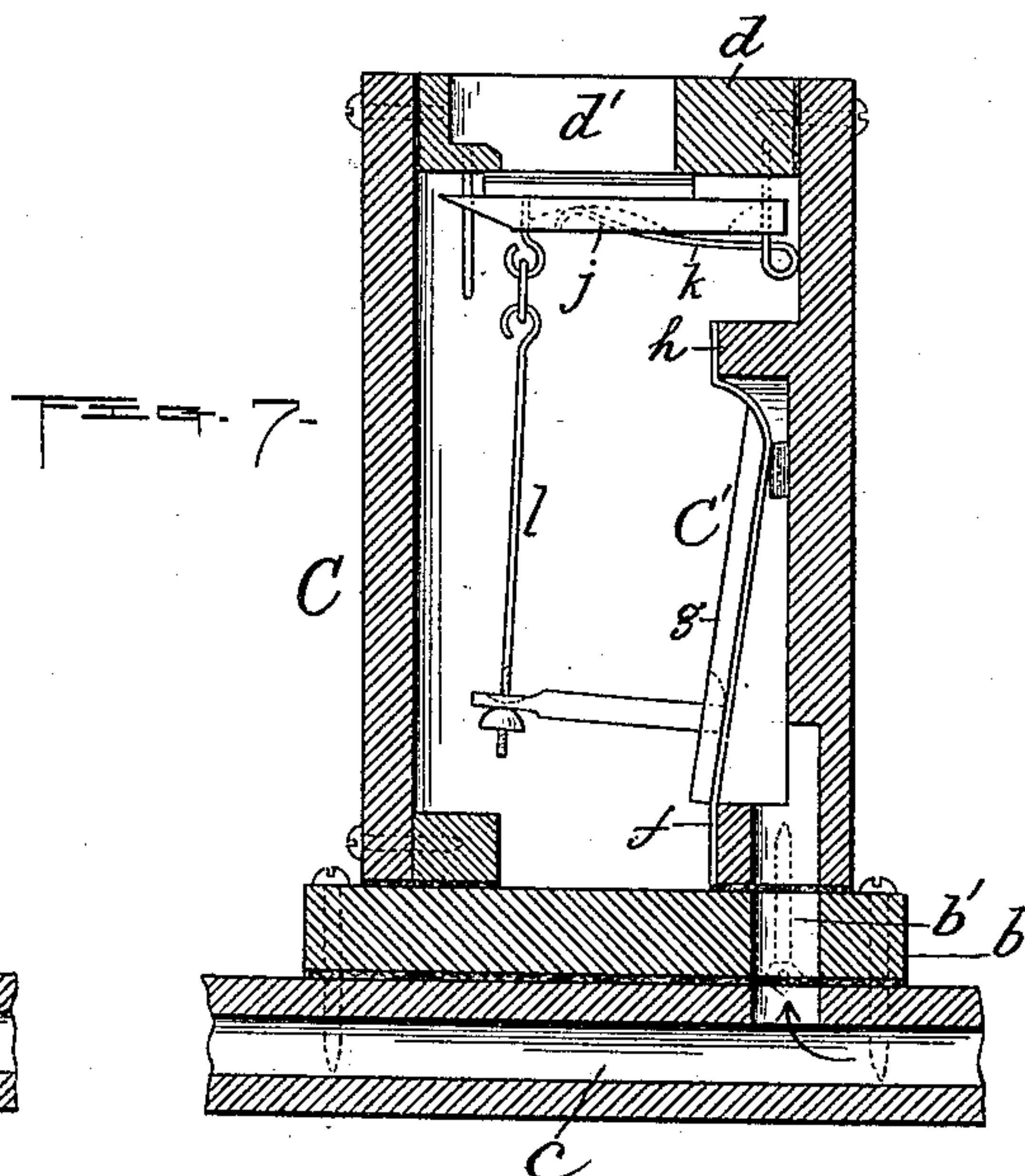
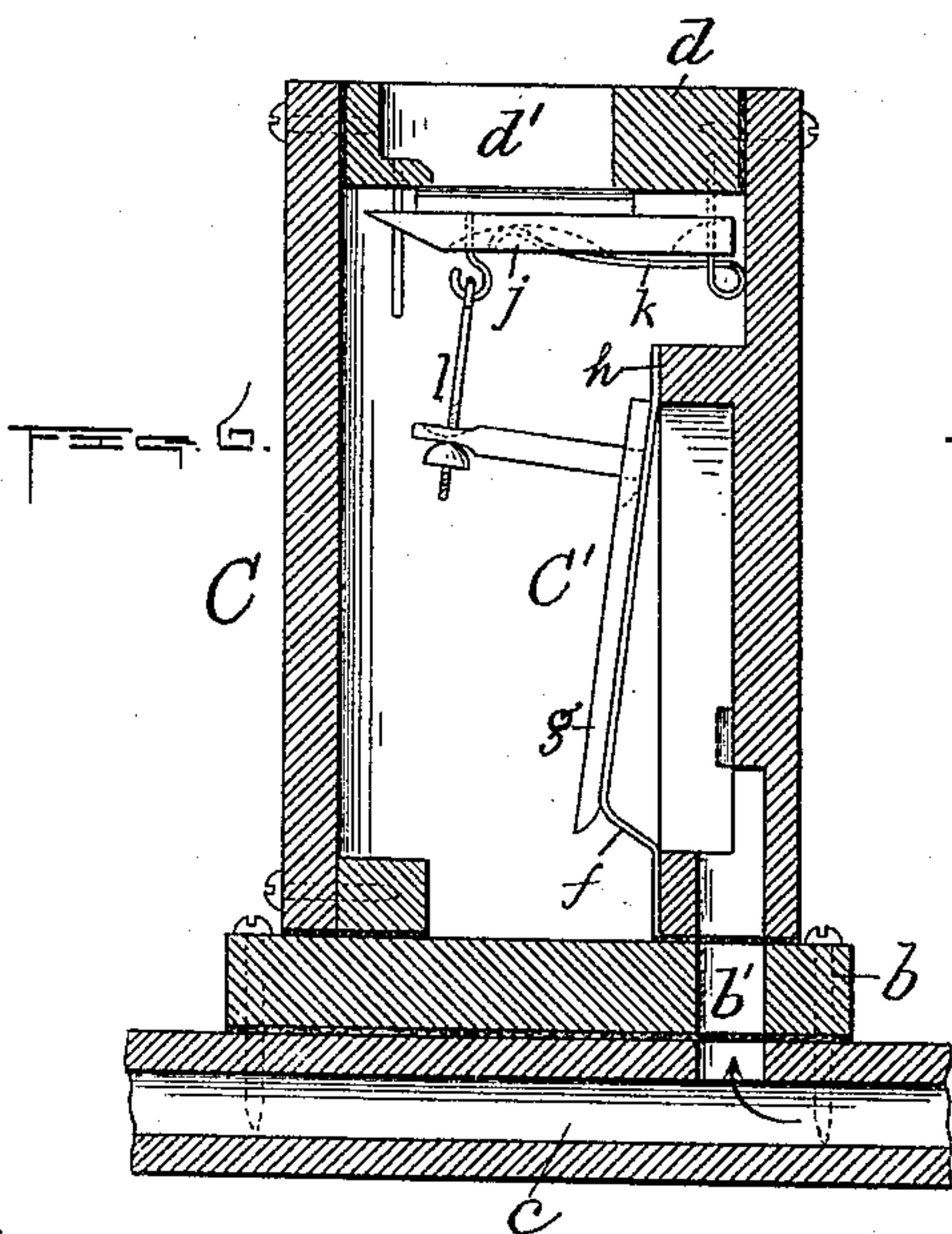
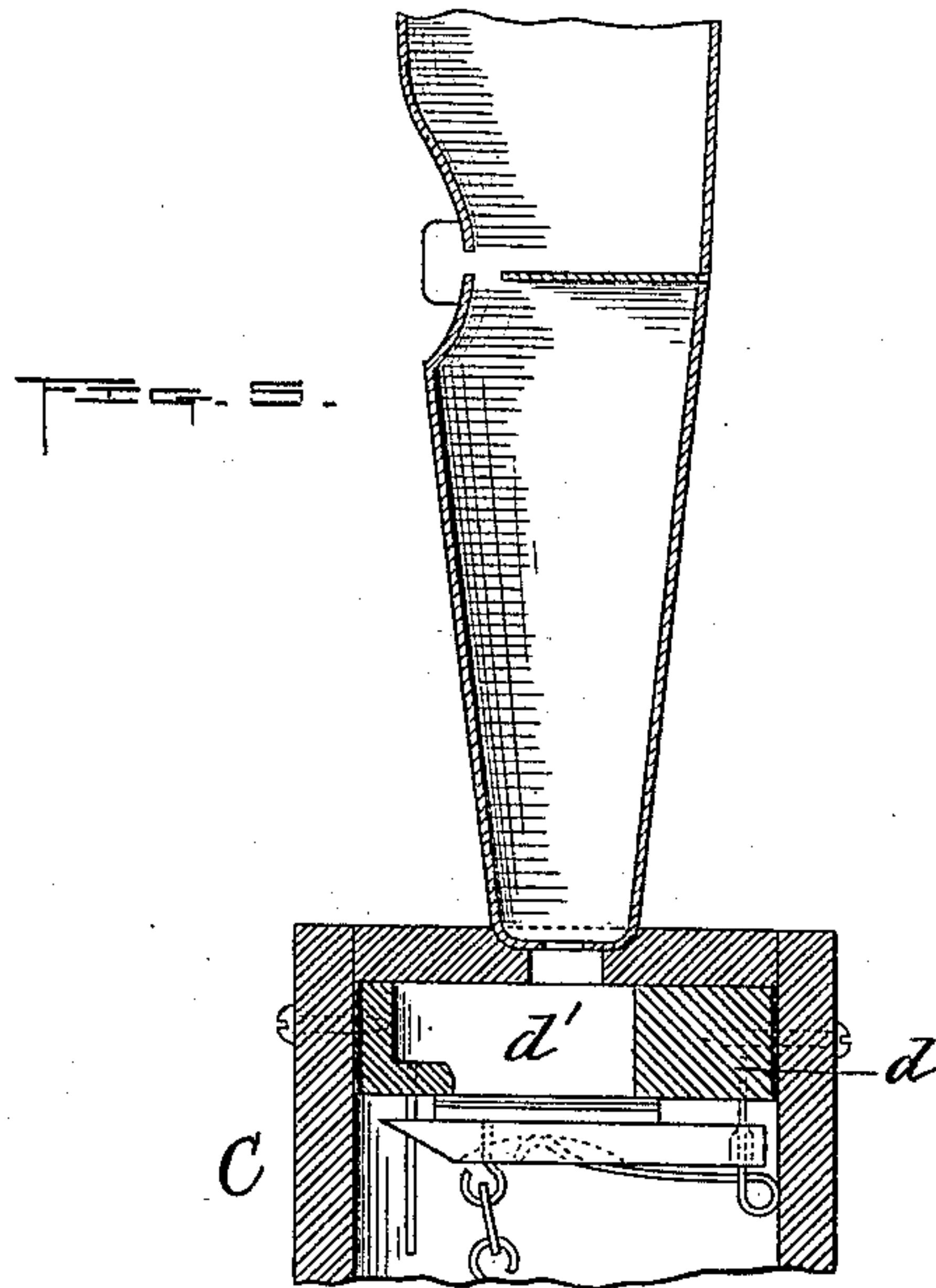
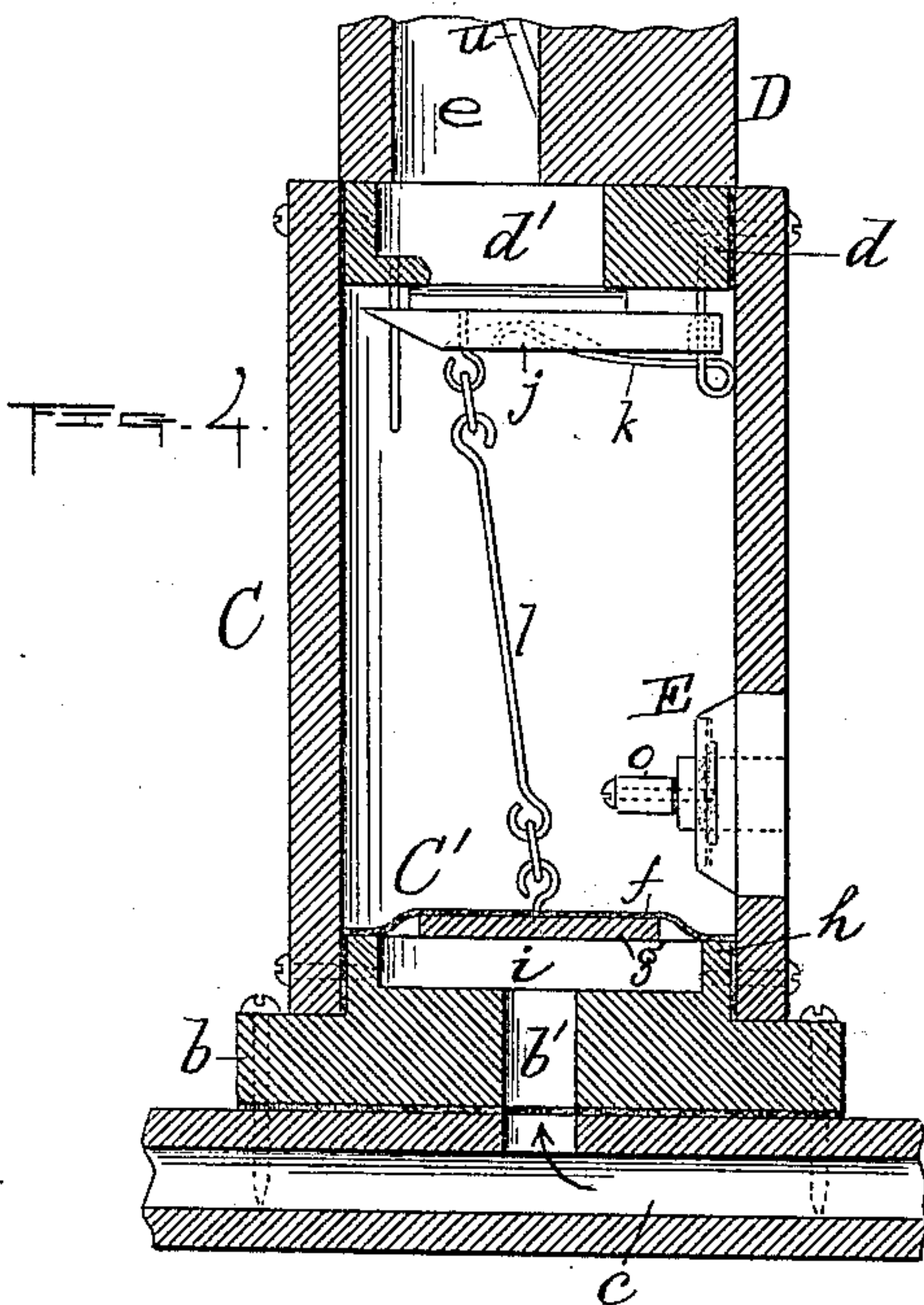
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2 Sheets—Sheet 2.

M. S. WRIGHT.
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UNITED STATES PATENT OFFICE.

MORRIS S. WRIGHT, OF WORCESTER, MASSACHUSETTS.

REED OR PIPE ORGAN.

SPECIFICATION forming part of Letters Patent No. 509,506, dated November 28, 1893.

Application filed March 3, 1893. Serial No. 464,504. (No model.)

To all whom it may concern:

Be it known that I, MORRIS S. WRIGHT, of the city and county of Worcester, and State of Massachusetts, have invented certain new
5 and useful Improvements in Reed or Pipe Organs; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming a part of this specification, and in which—

Figure 1 represents a vertical section through the switch-valve, part of the channel-board, and two of the series of tone-chambers and reed-boards of a reed organ embodying
15 my improvements, which will be hereinafter more fully described. Fig. 2 is a vertical, longitudinal section of part of one of the tone-chambers and reed-boards. Fig. 3 is an end view of one of said tone-chambers and
20 reed-boards, looking in the direction of arrow *a* Fig. 2. Fig. 4 is an enlarged view of part of the channel-board, one of the tone-chambers, and part of one of the reed-boards shown in Fig. 1. The following figures are
25 also upon the same enlarged scale. Fig. 5 shows the upper end of one of the tone-chambers, with part of an ordinary organ pipe applied to the upper end thereof, to illustrate the application of my invention to
30 a pipe organ, and Figs. 6 and 7 represent modifications in the construction of the pneumatic valve mechanism of one of the tone-chambers which will be hereinafter more fully explained. Fig. 8, is a longitudinal section and Fig. 9, a bottom plan of the auto-
35 matic escape valve.

My invention relates more particularly to reed organs, but is also equally as applicable to pipe organs, and consists mainly of certain
40 improvements in the pneumatic system whereby each "stop" is provided with a separable and removable independent "tone-chamber" or "wind-chest" and "pneumatic" for each set of valves and reeds, as and for the purpose hereinafter more fully set forth.

In order that others may better understand the nature and purpose of my said invention, I will now proceed to describe it more in detail.

50 In the drawings, A represents the switch-valve; B the channel-board; C the tone-

chambers or wind-chests, and D the reed-boards of a reed-organ. The switch-valve and channel-board are substantially the same as in other organs, and the valve and reed
55 mechanism contained within the tone-chamber and reed-board, when considered independently, is not materially different from that in other organs, but the combinations of the various elements or parts as set forth
60 in the claims, are believed to be new in reed pipe organs.

The main or essential feature, as above stated, consists in providing each "stop" with a separable and removable tone-chamber, and
55 pneumatic for each set or series of valves and reeds, in lieu of the usual method of making said tone chambers integral with the wind-chest. The advantages thereof are, that each tone mechanism being separable from another, they may each be removed independently to substitute new ones, or, for any other purpose desired; and in case of accident while using the instrument, the injured tone only, being affected, the performer may continue
75 playing without interruption; the injured part may also in such case be repaired without interfering with any other portion of the organ. Another advantage is, that the instrument proper, with its channel-board and
80 key connections, as well as the stop-work, may all be built in perfect working operation before the tone-chambers and pneumatics are applied thereto, which, as is well known, is impracticable where all the tone-chambers
85 are formed integral with the wind-chest, as aforesaid. Still another advantage of employing separable and removable tone-chambers, and pneumatics, is, that an easier and quicker action of the valves and reeds may
90 be obtained, as the construction admits of the pneumatics being made of the smallest possible size, and therefore require but little air to operate them properly, and when the air is shut off from one or more tone-chambers
95 their pneumatics are at rest, during the operation of the others; consequently they are subjected to but little wear and require renewal only at long intervals.

No organ, to my knowledge, now has a pneu-
100 matic arranged in a special removable chamber for each stop, and I am also not aware

that any reed organ has a separate tone-chamber for each stop, so arranged that each tone-chamber can be removed without interfering with the other mechanical parts of the organ.

5 Said tone-chambers are, in this instance, arranged vertically, at a short distance apart, side by side on the channel-board of the organ, but as they may be otherwise arranged, according to the construction of different styles of
10 organs, I do not limit myself thereto. Each tone-chamber, with its interior mechanism, is substantially alike, and therefore a detailed description of one, will answer for the others.

The tone-chamber, or wind chest C, is provided with a suitable opening *b'* (for each
15 pneumatic) in the pneumatic-board *b*, at the bottom, connecting with the channel-board chamber *c*; and with an opening *d'* (for each reed) in the valve-board *d* at the top communicating with the reed-board chamber *e*.
20 Just above the bottom opening *b'* is arranged the pneumatic C', consisting of a leather or other flexible diaphragm *f*, and the central plate or disk *g* attached thereto. Said diaphragm is secured around its edges to a suitable
25 shoulder *h* on the interior of the tone-chamber; or otherwise, to hold the diaphragm a short distance above the pneumatic board *b*, so as to form a chamber *i* under said diaphragm above the opening *b'*, and thus admit
30 of the vertical action of the pneumatic. Just under the top opening *d'* is arranged the usual valve *j*, which is provided with a light spring *k* for pressing said valve over the opening.
35 The valve is connected with the pneumatic by a wire or other suitable connection *l*, whereby the usual action imparted to said pneumatic by the air pressure or suction may be communicated to the valve, when the keys of the
40 instrument are operated. The pneumatic, as will be understood, is in its normal position with the valve *j* closed, when the air pressure is applied both above and below said pneumatic, and is depressed or forced down to
45 open said valve and thus cause the reed or pipe to "speak" by pressing upon one of the keys so as to shut off the air from the switch-valve chamber to the channel-board chamber, said operation of the key at the same time
50 opening the escape valve *m* under said channel-board to allow the air from the chamber *i* to pass out. Said operation is old, however, and I therefore make no claim broadly thereto.

As is well known, the reeds or pipes of an
55 organ are often made to operate at improper times when the air pressure is applied to the instrument, owing to the leaks in the valve which controls the air to the tone-chamber, causing the valve which admits air to said
60 reeds or pipes to be partially opened and thus produce an imperfect and squeaky tone. To obviate this objection, I prefer to employ an automatic escape-valve E at some convenient point in the tone-chamber, but do not limit
65 myself thereto. Said valve consists of a pneumatic *n* attached to the tone-chamber around an opening therein, and to a pivoted lever *o*,

and is provided with a suitable light spring *p* for holding it in its normal position, as is shown in Fig. 8 of the drawings. Upon the
70 free end of the lever is mounted the cushioned head *q* which is adapted to close over the outlet opening *r* in the tone-chamber. Said spring *p* is made just strong enough to hold the valve open against a slight air pressure,
75 but not sufficient to hold it against the full air pressure. It is therefore obvious that when the instrument is being played said valve E does not in any way affect the operation thereof, while at the same time removing
80 the objectionable feature before stated when the keys are in use.

The switch-valve A is constructed and operates substantially the same as in other similar organs, and it will therefore be unnecessary to describe the same in detail. The lever
85 *s* thereof, it will, of course, be understood, is connected with the keys by the wire *t*. The reed-board D, and its reeds *u* are also substantially the same as in other reed organs.

The only feature which I claim as new is the employment of a separable and removable tone-chamber and pneumatic for each
90 "stop," in combination with the other old, adjacent parts of the instrument.

My improvement may be combined with either a reed or pipe organ, as previously stated.

In Fig. 5 the lower part of a pipe is shown connected with the upper end of a tone-chamber, as an illustration of the latter construction.

Either blow bellows or suction bellows may also be used as desired, with said improved construction. In all but the last figure of the
105 drawings, the construction is shown as being adapted to the use of blow bellows, while in said last figure the suction bellows construction is shown, the pneumatic in the latter case being arranged vertically instead of horizontally,
110 to conform to said modified construction.

In Fig. 6 the pneumatic is also shown in a vertical position, but reversely to that shown in Fig. 7, to conform with the difference in the
115 direction of the air pressure, in Fig. 6 said pneumatic being arranged to swing in at the bottom, while in Fig. 7 it swings in at the top. Aside from the difference in position and adaptability to the difference in the direction
120 of air pressure, said modifications, as will be seen, are substantially the same as in the previous figures of the drawings.

As still other ways may be adopted in practice, of arranging the pneumatic and its connection with the valve *j*, I do not limit myself to any special construction and arrangement.

Having now described my invention, what I claim therein as new, and desire to secure by Letters Patent, is—

1. In an organ, a separable and removable tone-chamber or wind-chest for each "stop," each containing a series of separate pneumatics and valves, one of each for each key
130

connection and reed, substantially as and for the purpose set forth.

2. In an organ a separable and removable tone-chamber or wind-chest for each "stop,"
5 and each containing a series of separate pneumatics and valves one of each for each key connection and reed, in combination with the channel-board, controlled by a switch-valve, and provided with an air-passage to one pneu-
10 matic of each tone-chamber, and the reed-board and reeds, substantially as and for the purpose set forth.

3. In an organ, the combination of the channel-board controlled by a switch-valve and
15 provided with an air-passage to one pneumatic of each tone-chamber, with a series of separable and removable tone-chambers or wind-chests, one for each "stop," and each contain-

ing a series of separate pneumatics and valves one of each for each key connection and reed, 20 substantially as and for the purpose set forth.

4. In an organ, the combination of the channel-board controlled by a switch-valve and provided with an air-passage to one pneumatic of each tone-chamber, with a series of sepa- 25 rable and removable tone-chambers or wind-chests, one for each "stop," each containing a series of separate pneumatics and valves one of each for each key connection and reed, and a regulating escape-valve combined with each 30 tone-chamber or wind-chest, substantially as and for the purpose set forth.

MORRIS S. WRIGHT.

Witnesses:

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WALTER B. NOURSE.