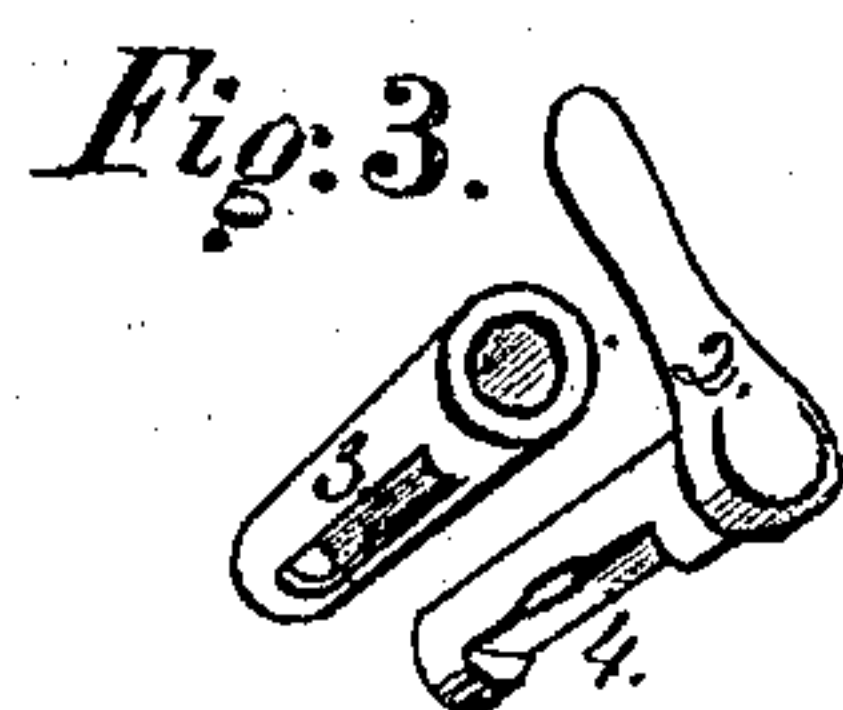
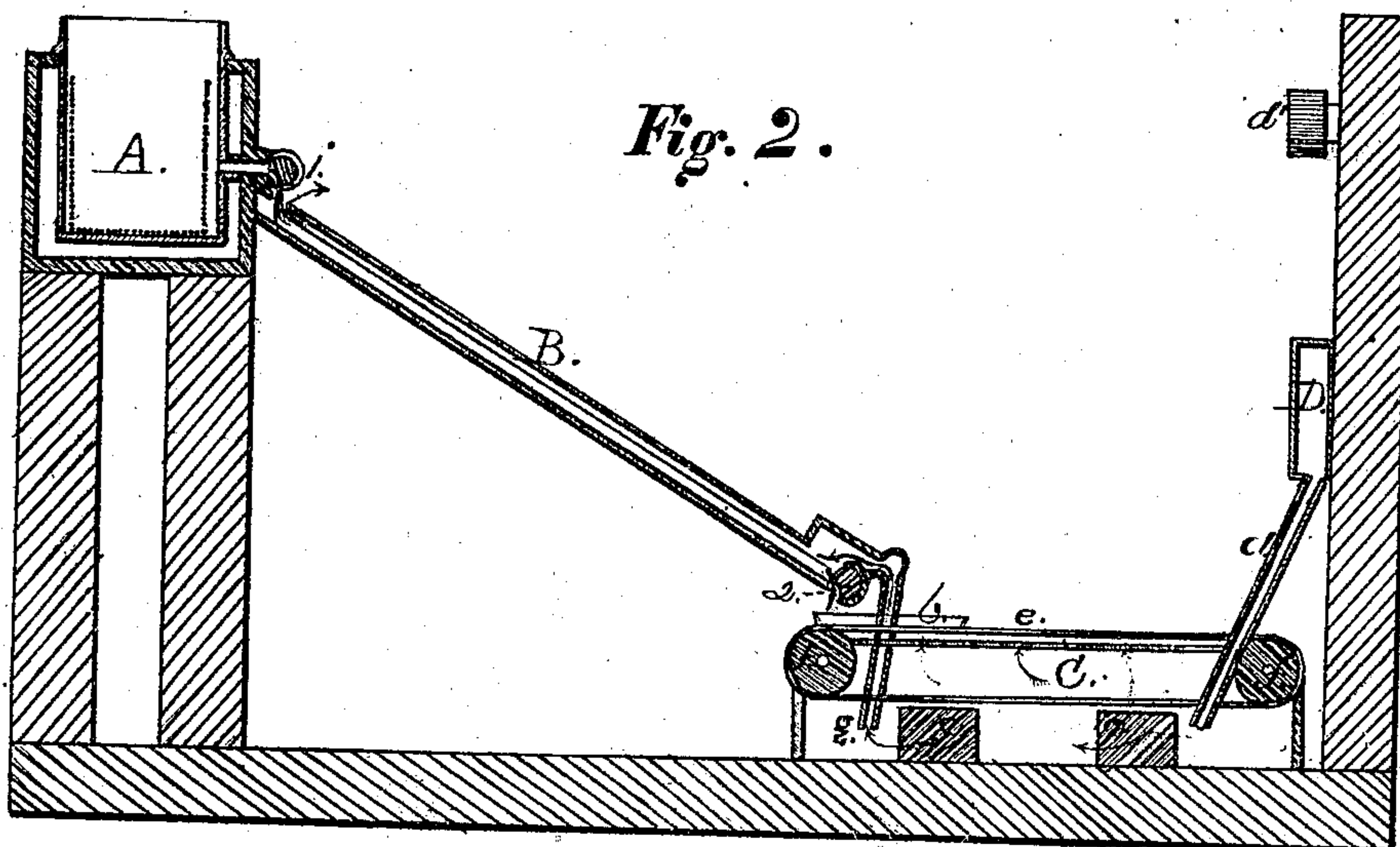
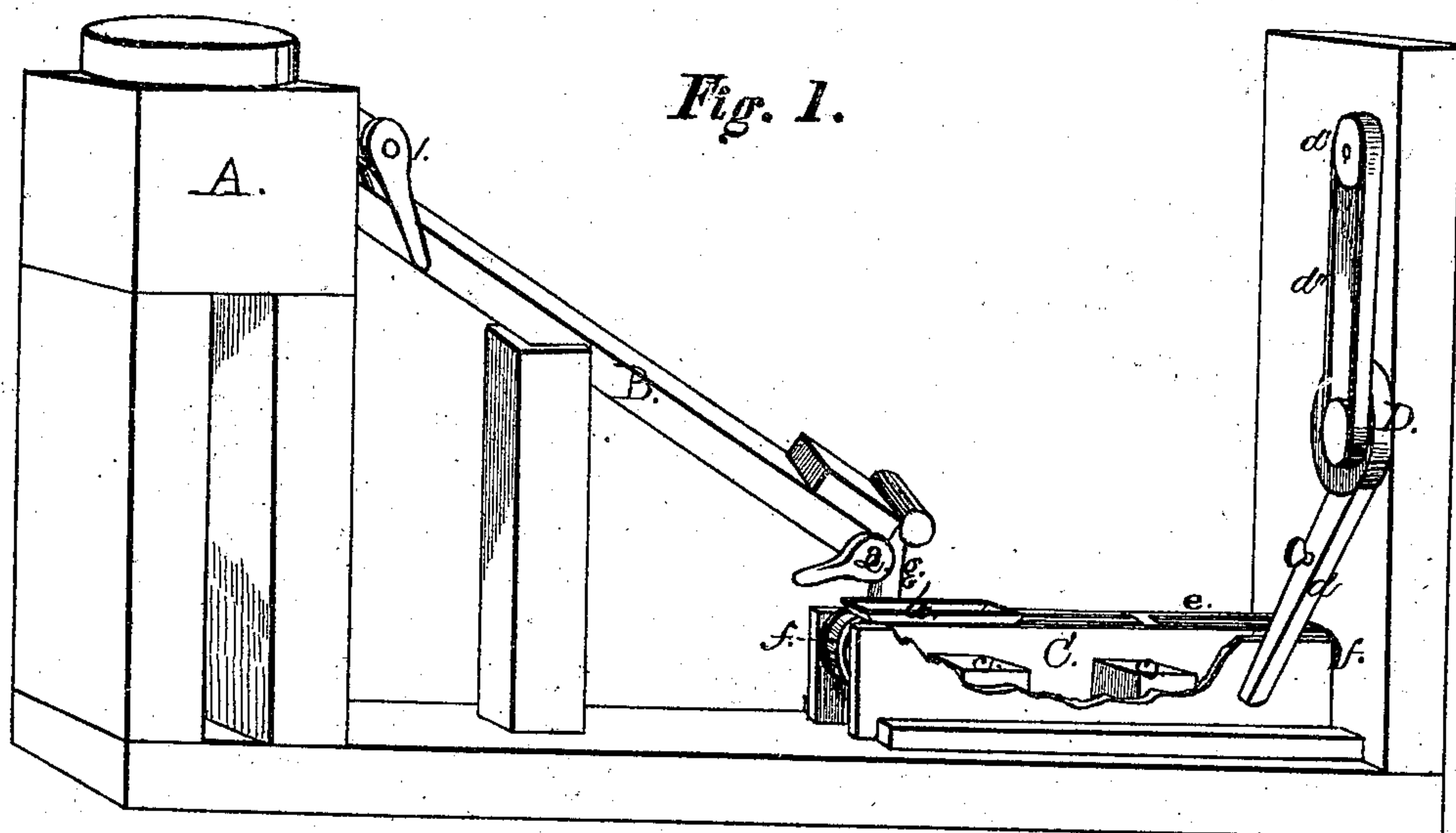


A. DIETZ.
MANUFACTURE OF GLUE.

No. 103,852.

Patented June 7, 1870.



Witness
J. D. Lau
Fred. J. Dean

Andrew Dietz

United States Patent Office.

ANDREW DIETZ, OF NEW YORK, N. Y.

Letters Patent No. 103,852, dated June 7, 1870.

IMPROVEMENT IN THE MANUFACTURE OF GLUE.

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 DIETZ, of the city of New York, in the county of New York and State of New York, have invented a new and useful Improvement in the Process of Manufacturing Glue; and I do hereby declare that the following is a full, clear, and exact description thereof, and of its mode or manner of operation, reference being had to the accompanying drawing and to the letters of reference marked thereon and making a part of this specification.

This nature of my invention consists in the production and arrangement of an apparatus, by means of which glue, taken directly from the boiling-kettles, can be quickly and effectually chilled and stiffened, by the use of which it is possible to manufacture glue in summer, as well as in the cooler seasons, and from green stock, thereby saving the expense of preparing the glue-stock by liming, drying, &c.

Figure 1 is a general perspective view of an apparatus adapted for cooling glue, as it is taken directly from the boiling-kettle.

Figure 2 is a vertical sectional view of fig. 1.

Figure 3 is an enlarged detached view of the valve, for discharging the glue from the kettle, and also into the chilling-pans.

The manufacture of glue, as effected by the ordinary process or manner, is necessarily carried on during the cold weather, so that the glue, after being sufficiently boiled, will be chilled or cooled and partially hardened and stiffened by the cool atmospheric air, after which it is cut into slices and placed on the drying-nets, where it remains, depending wholly upon the weather, until it is fully dried.

In the neighborhood of cities a great deal of the best glue-stock, such as cattle's feet, is gathered, however, during the summer season, but to prevent decomposition, and consequent injury to the glue, such stock has to be put into lime-vats and unhaired, and afterward dried, so that it can be preserved until cold weather, when the glue is made.

All this time, labor, and expense of preparing the glue-stock, can be saved by my invention, as by it the stock can be used in its green state as soon as received, and converted into glue at all seasons of the year, in the summer as well as in cool weather.

The boiling-kettle A is constructed in the usual manner, and should have within it a wire or other basket, *a*, to hold and retain the glue-stock, after the gelatine has been extracted from it by boiling.

Connected with or leading from such boiler is an inclined covered trough or pipe, B, into which the glue is received directly from the boiler, and by which it is conveyed to the cooling-pans 6, which are made of metal, preferably of zinc, and should be broad and shallow.

At each end of such conveyer B are valves or cocks 1 2, which are so constructed as to discharge the liquid glue in a thin, broad sheet.

This is effected by having the valve-seat cylindrical, and making the discharge-orifice therein long and narrow, as shown at 3, fig. 3, the length of such orifice being about equal to the width of the cooling-pans 6, and cutting away one side or half of the valve or cock, as also shown at 4, fig. 3, so that as the valve is turned in one direction, the orifice 3 will be opened its whole length, so as to permit the glue to be discharged in a thin, broad current, but when turned in the other direction, will close such orifice and stop the flow of the glue.

To render it possible to carry on the manufacture of glue in the summer season, or when the temperature of the air is much above the freezing point, the glue, after it is discharged from the boiling-kettles, must be first chilled or hardened, so that it can be afterward dried, and all moisture expelled.

Such chilling or hardening I accomplish by means of the shallow pans 6, which may be of any size desired, but are usually of a width about corresponding with the length of the discharging-orifice 3, and a cooling-chamber, C, which has within it ice-boxes or receptacles *c c*, and the top of which is covered with slats, or perforated with holes, as shown in fig. 2.

Into and through this cooling-chamber air is constantly forced by means of a blower, D, worked by a wheel and band, *d' d''*, and over such chamber the pans 6 are made to pass at any rate of motion required, by means of an endless band, on which the pans are placed, and which passes over rollers *f f*, which may be revolved in any convenient manner.

The chamber C must be kept supplied with ice in sufficient quantities to reduce the temperature of the air passing through it to about 40° Fahrenheit, or a few degrees above freezing point, so as to chill and harden the surface of the glue, without freezing it, as freezing greatly injures the article.

A portion of the cold air passing through the chamber C is also made to pass, by means of a pipe, *g*, into and up through the delivery-trough or conduit B, thereby cooling, to some extent, the glue before it is discharged into the pans.

The pans *b* are retained in contact with or subjected to the influence of the cooling-chamber C until the surface of the glue is sufficiently chilled or hardened to permit it to be removed from the pans into a drying-room, into which cold air is forced until the surfaces of the glue become thoroughly hardened, and the whole mass stiffened when steam heat can be used in gradually-increasing quantities until the whole mass is thoroughly dried. The quantity of air admitted into the chamber C may be regulated by the stop-cock *h*.

Other means than ice for artificially cooling the air may be made use of, it being only necessary to reduce its temperature nearly to the freezing point, so as to chill the glue as rapidly as possible without freezing it.

By thus artificially chilling and hardening the glue, as it is taken from the boiling-kettle, it will be evident that the process of making glue can be carried on as well in the summer as in cooler weather, and that new or green glue stock can be at once converted into glue, thus rendering unnecessary the liming and drying preparation now required, thus saving all the time, labor, and expense spent for such purpose.

What is claimed is—

1. The process of chilling and hardening glue, as it

is taken from the boiling-kettle, by means of currents of air reduced to a temperature but few degrees above the freezing point, for the purpose set forth.

2. The arrangement of the blower D, cooling-chamber C, provided with ice-boxes or other cooling-media, and cooling-pans 6, or other equivalent, substantially as and for the purposes set forth.

3. The construction of the sleeve-valve 1 or 2, or its equivalent, for discharging the glue in a thin, broad stream, for the purposes set forth.

ANDREW DIETZ.

Witnesses:

S. D. LAW,

FBED. B. SEARS.