(No Model.) 2 Sheets—Sheet 1.

S. SIMMONS & J. TULLIDGE.

CARPET CLEANER.

No. 457,674. Patented Aug. 11, 1891.

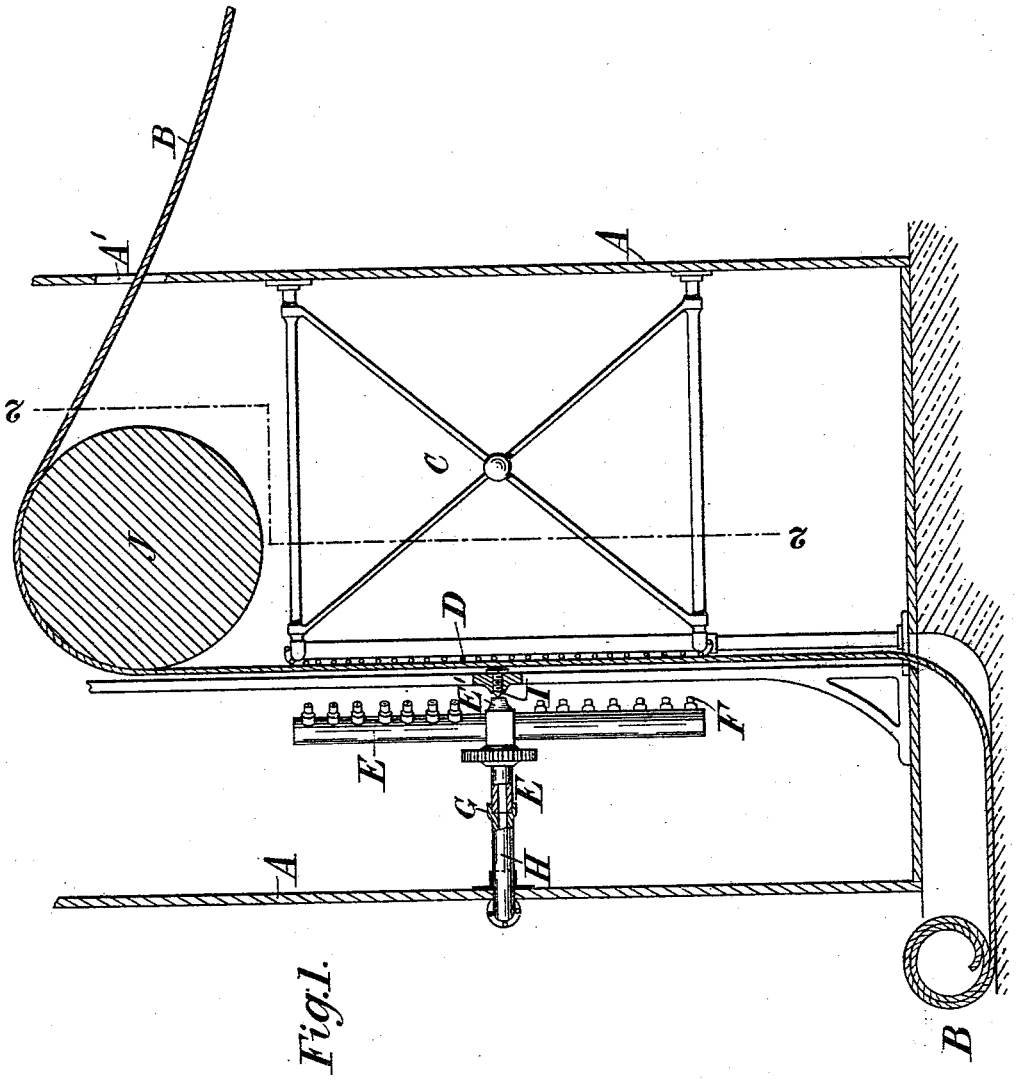


Fig. 1.

Witnesses
Thomas Durant
E. L. Smith

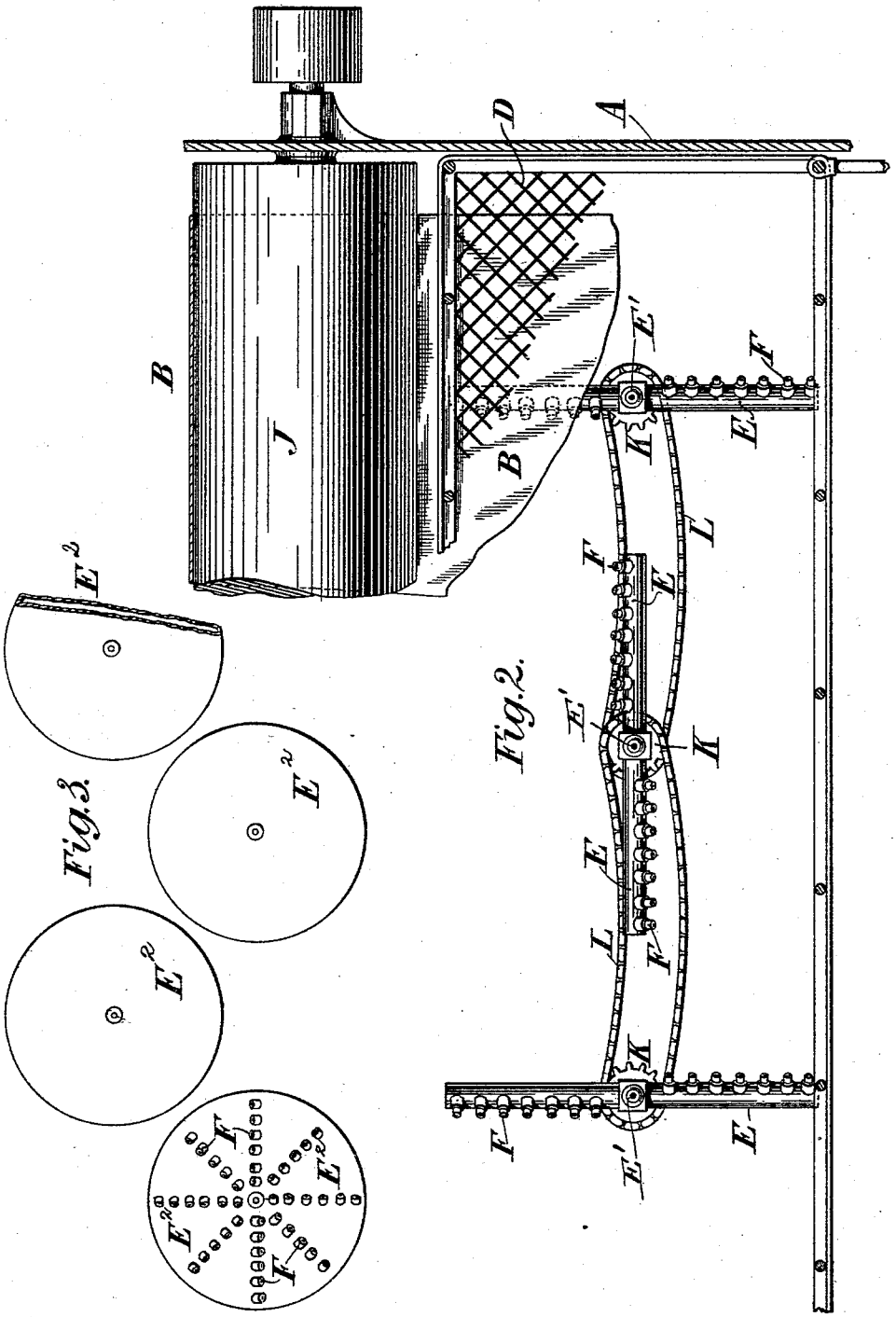
Inventors
Sydney Simmons 2nd
Joseph Tullidge,
By Church & Church
their Attys.

(No Model.) 2 Sheets—Sheet 2.

S. SIMMONS & J. TULLIDGE.

CARPET CLEANER.

No. 457,674. Patented Aug. 11, 1891.



Witnesses
Thomas Durant
E. B. Smith

Inventors
Sydney Simmons and
Joseph Tullidge.
By Church & Church
their Attys

UNITED STATES PATENT OFFICE.

SYDNEY SIMMONS AND JOSEPH TULLIDGE, OF LONDON, ENGLAND.

CARPET-CLEANER.

SPECIFICATION forming part of Letters Patent No. 457,674, dated August 11, 1891.

Application filed December 11, 1890. Serial No. 374,390. (No model.)

To all whom it may concern:

Be it known that we, SYDNEY SIMMONS and JOSEPH TULLIDGE, subjects of the Queen of England, residing at London, in England, have invented certain new and useful Improvements in or Relating to the Cleaning of Carpets and the Like, of which the following is a specification.

This invention relates to the cleaning of carpets, curtains, and other materials or articles by means of a blast of air delivered either through the material or angularly upon its surface, so as if not passing entirely through the material to penetrate sufficiently far into it or between its fibers or nap to remove dust and such dirt as can be in that manner removed, which in general is found to be practically all the dirt it contains. Various devices have been used for this purpose with more or less success; but having found that generally some portions of the material being operated upon escape the action of the blast, we have devised the following mechanism for carrying out this invention. We prefer to employ a number of nozzles, a series of nozzles being arranged upon one or more pipes which, being suitably carried, are enabled or caused to revolve, carrying the nozzles with them. A simple way of constructing this apparatus is to construct a T of pipe, the cross of the T carrying the nozzles, and the stem being connected in any convenient manner with the air-supply, so as to make a sufficiently-tight joint, and at the same time to allow of the revolution of the T-piece. The nozzles upon the T would be arranged those on one side of the stem pointing in one direction and those on the other in the opposite direction, the result being that as the air escapes through the nozzles the whole T-piece is revolved on the well-known principle of the Barker's mill. Any required number of arms may be used, or instead of the arms a hollow disk upon the end of the stem, and either carrying any desired number of nozzles or having any desired number of perforations. Either perforations or nozzles would be arranged so as to direct the air-currents in such a manner as to revolve the apparatus.

In the accompanying drawings, which represent means by which this invention may be carried into effect, Figure 1 is a vertical section of apparatus adapted for the purpose. Fig. 2 is another vertical section of the apparatus, taken on the line 2 2 of Fig. 1; and Fig. 3 shows a modified form and arrangement of the nozzle-heads.

Like letters represent like parts throughout the drawings.

A represents the casing, which contains the whole apparatus; B, the carpet to be operated upon; C, the frame-work to support the carpet against the blast, that portion D of it against which the carpet rests being preferably formed of open or lattice work, such as crossed leather bands or the like.

E represents the T-piping, constituting the nozzle-head carrying the nozzles F and G, any suitable form of stuffing box or joint to connect the T-piece E with the fixed pipe H, by which the blast is introduced. At the end of the stem of the T-piece E is a recessed center E′, against which bears the pointed center I, so as to prevent nozzle-head E and stationary supply-pipe H being separated and to provide the necessary bearing for nozzle-head E as it revolves. Any other suitable form of bearing, may, however, be employed.

J is a roller, over which the carpet passes after having been operated upon by the blast, and A′ is an opening in the case, through which the carpet can be withdrawn as finished. The roller J may, if desired, be positively driven so as to draw the carpet along, and, if necessary, it may have in connection with it any of the ordinary well-known carpet-feeding mechanisms now in common use.

The nozzles F, as shown particularly in Fig. 2, upon the opposite arms of the T may be placed in opposite directions, so as to cause the T to revolve on the principle of the Barker's mill. The various T-pieces, of which three are shown in Fig. 2, are also shown connected together by pitch-wheels K and pitch-chains L, the object of which is to allow of the T's overlapping in their revolutions, and thus covering the whole of the carpet presented to them. This could not be done unless the positive relation between the T's were secured, as otherwise they would strike and damage each other. This arrangement of

pitch chains and wheels, or, if preferred, of ordinary gearing, enables the T's, if desired, to be driven by power instead of by the nozzles, and in such case it is only necessary to directly operate one of the T's, the chains or gearing conveying the motion to the others. When the T's are driven by power, the direction of the nozzles upon or openings in the T's is not material and would depend rather upon whether it was intended to blow the dust through the carpet or other article to be operated upon, or to blow it out of and not through the fabric.

In Fig. 3 are shown a number of hollow disks E^2, which constitute the nozzle-heads and are provided with nozzles F, which may be set angularly, as in Fig. 2, or otherwise, as preferred. These disks may be driven on the Barker's mill principle or by power, as before; but though they are arranged, as will be seen from Fig. 3, to overlap so as to cover the whole of the fabric to be operated upon, they need not couple together, as there are no flying ends or parts to come in contact. By adopting the two lines of T's, as in Fig. 3, they could of course be so arranged as to clear each other and yet to effect the desired object.

The plan above mentioned of carrying the revolving nozzle-heads upon a stem is probably the most convenient one and likely to produce as little friction as any; but at the same time we do not bind ourselves down to such an arrangement, as mechanism could easily be devised embracing all the essential features of that above described but without the central stem, and any of the ordinary well-known forms of bearing may be employed for the revolving nozzle-head to keep the same from being blown off without departing from the spirit of our invention.

We claim—

1. In a machine for cleaning carpet, the combination, with the support having a substantially plane surface over which the carpet passes, of a head carrying a series of nozzles mounted in bearings and revolving in a plane parallel and in proximity to the supporting-surface, substantially as described.

2. In a machine for cleaning carpet, the combination, with a support having a substantially plane surface over which the carpet passes, of a series of nozzle-heads carrying nozzles and mounted in bearings and revolving in a plane parallel and in proximity to the supporting-surface, substantially as described.

3. In a machine for cleaning carpet, the combination, with the support having the substantially plane surface over which the carpet passes, of a series of nozzle-heads carrying nozzles and mounted in bearings and revolving in a plane parallel and in proximity to the supporting-surface, the paths traversed by the extremes of said heads overlapping each other, whereby the whole surface of the carpet is acted upon, substantially as described.

4. In a machine for cleaning carpet, the combination, with the support having the substantially plane surface over which the carpet is passes, of a series of nozzle-heads connected by gearing for simultaneous rotation and mounted in bearings and rotating in a plane parallel and in proximity to said supporting-surface, substantially as described.

5. In a machine for cleaning carpet and the like, the combination, with the casing, of a frame-work C D, rotatable nozzle-head E, nozzles F, stuffing box or joint G, pipe H, recessed and pointed centers E′ I, roller J, pitch-wheels K, and pitch-chains L, substantially as described, and illustrated in the accompanying drawings.

In testimony whereof we have hereto set our hands in the presence of the subscribing witnesses.

SYDNEY SIMMONS.
JOSEPH TULLIDGE.

Witnesses.
ALFRED J. BOULT,
HAROLD WADE,
CHARLES ROSE.