(No Model.) 2 Sheets—Sheet 1.

F. H. RICHARDS.

APPARATUS FOR PACKING BUTTON FASTENERS.

No. 331,823. Patented Dec. 8, 1885.

Fig. 12

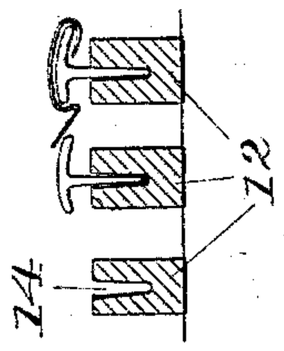


Fig. 11

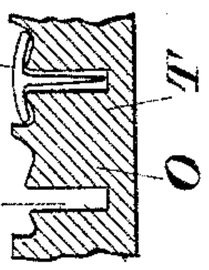


Fig. 10

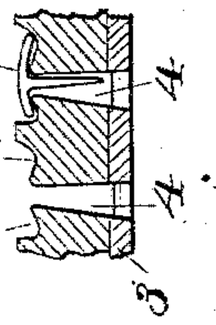


Fig. 1

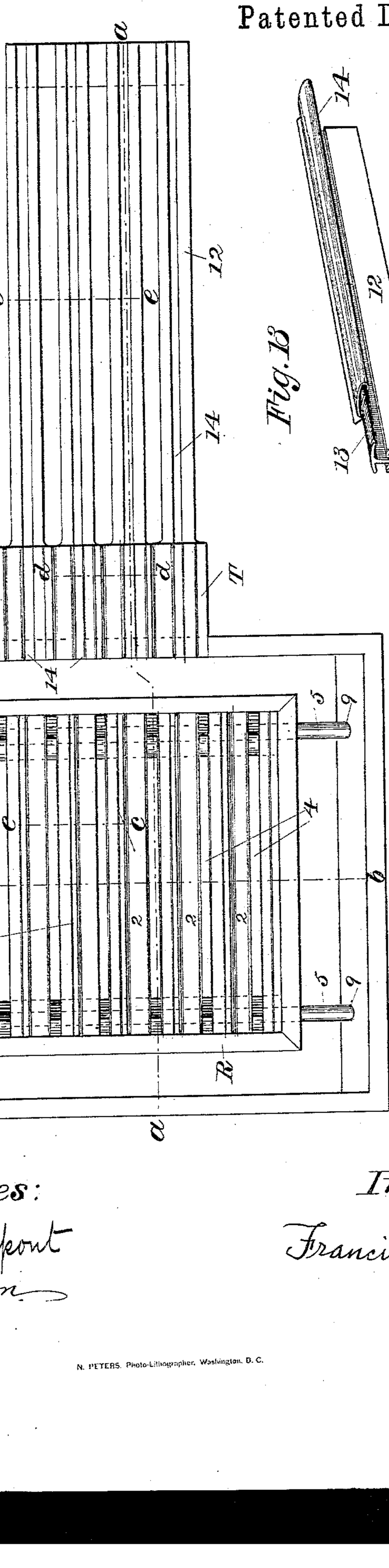
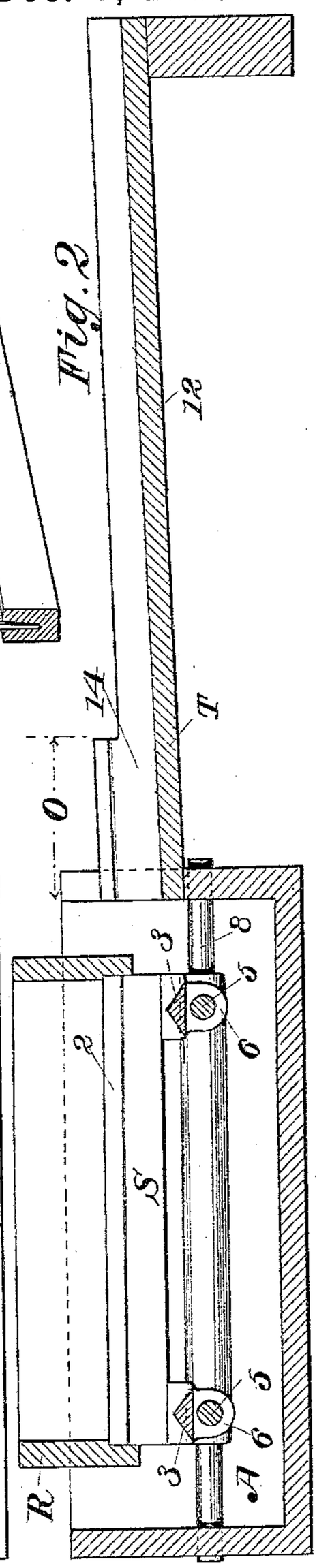


Fig. 13

Fig. 2



Witnesses:
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Inventor:
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(No Model.) 2 Sheets—Sheet 2.

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APPARATUS FOR PACKING BUTTON FASTENERS.

No. 331,823. Patented Dec. 8, 1885.

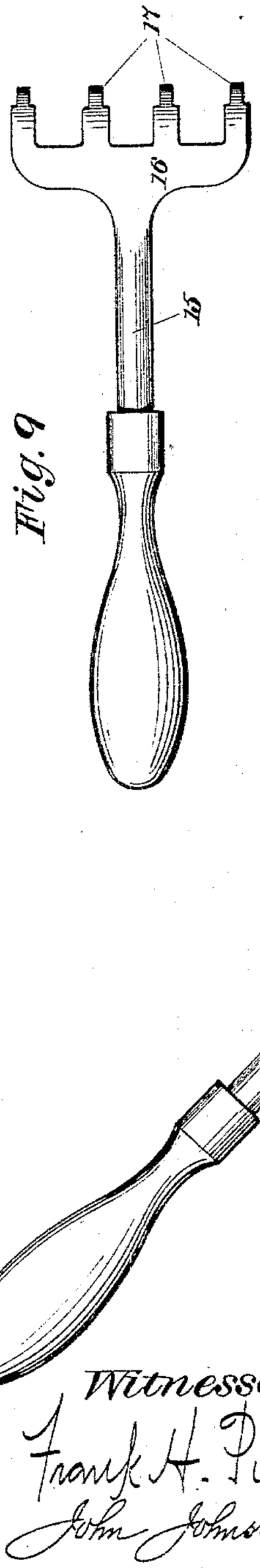

Fig. 9

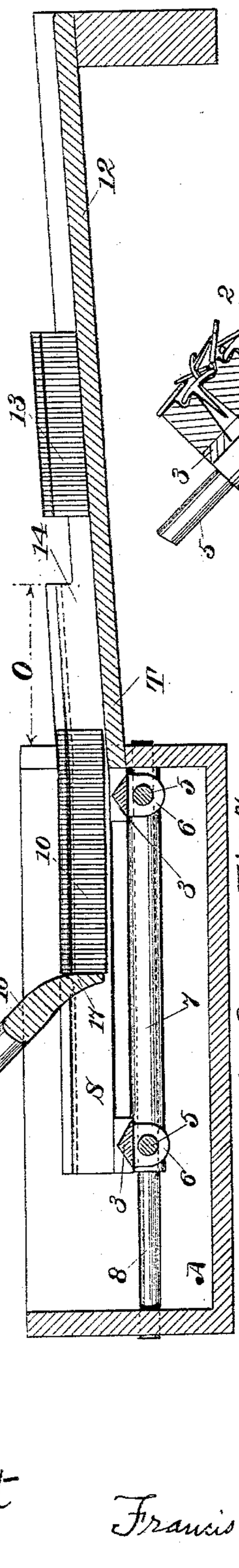

Fig. 8

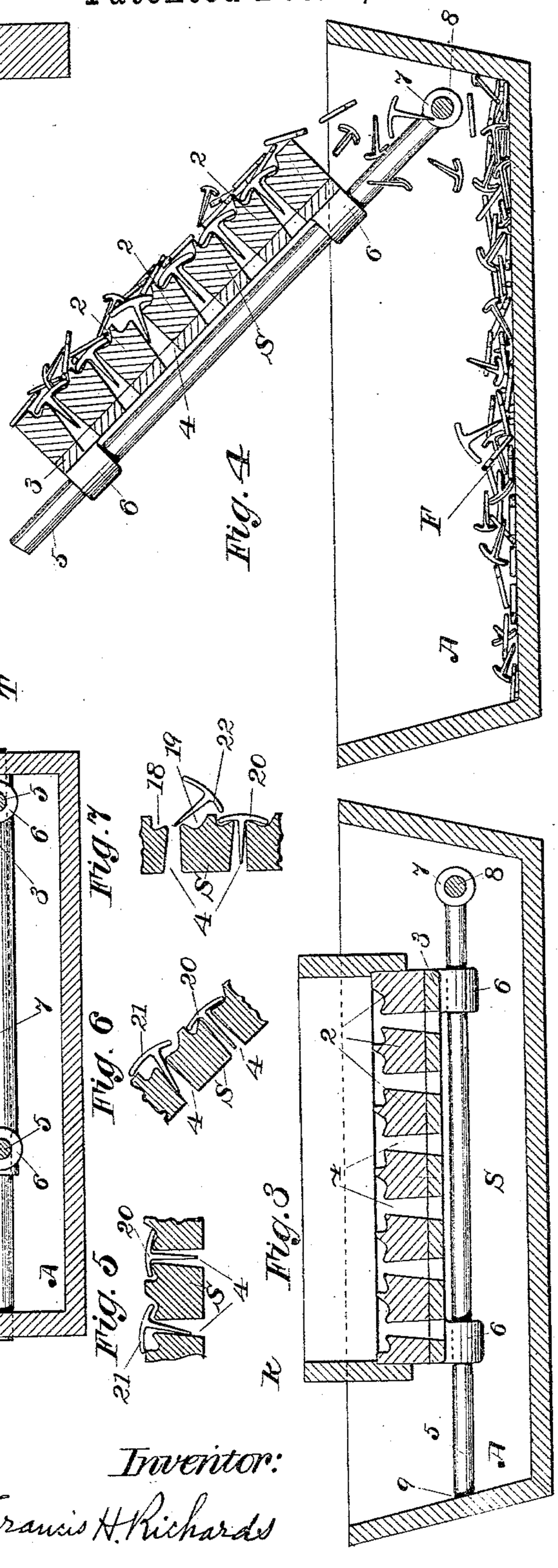

Fig. 4

Fig. 7

Fig. 6

Fig. 5

Fig. 3

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UNITED STATES PATENT OFFICE.

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APPARATUS FOR PACKING BUTTON-FASTENERS.

SPECIFICATION forming part of Letters Patent No. 331,823, dated December 8, 1885.

Application filed September 2, 1885. Serial No. 175,999. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS H. RICHARDS, a citizen of the United States, residing at Springfield, in the county of Hampden, State of Massachusetts, have invented certain new and useful Improvements in Apparatus for Packing Button-Fasteners, of which the following is a specification.

This invention relates to apparatus especially adapted for packing that class of button-fasteners described in United States Patent No. 314,684, dated March 31, 1885, the object being to furnish an apparatus for operation by hand, as hereinafter more fully set forth.

In the drawings accompanying and forming a part of this specification, Figure 1 is a top view of an apparatus embodying my improvements. Fig. 2 is a vertical section of the same in line *a a*, Fig. 1. Fig. 3 is a similar section in line *b b*, Fig. 1. Fig. 4 is a view similar to Fig. 3, showing the parts at a certain stage of their operation. Figs. 5, 6, and 7 are views showing a section of the sieve in line C C, Fig. 1, in different positions. Fig. 8 is a view, similar to Fig. 2, illustrating the use of the apparatus. Fig. 9 is a top view of a tool forming a part of the same. Fig. 10 is a partial section of the sieve in line C C, Fig. 1. Fig. 11 is a similar view of the receiving-table in line *d d*, Fig. 1. Fig. 12 is another and similar view of the same in line *e e*, Fig. 1. Fig. 13 is a perspective view showing how a packing-case is filled with fasteners from said table.

Similar characters designate like parts in all the figures.

This apparatus comprises a bin, A, into which a quantity of button-fasteners, F, are promiscuously thrown, as shown in Fig. 4. For convenience this bin is in practice made considerably larger than shown in the drawings. This is also true of the table and sieve; but in these, as shown, the grooves are about full size.

S designates the sieve, which consists of a series of bars, 2, suitably fastened together parallel to each other and at proper distance apart. One way of constructing the sieve is to fix said bars to a pair of cross-bars, 3. A rim, R, is removably fitted around sieve for the purpose of holding thereon a quantity of fasteners, which are to be shaken into or through the channels or grooves 4 between bars 2. In practice the sieve is shaken in a direction crosswise of said channels, being supported by a pair of guides of any convenient form—as, for instance, 5. I prefer to make these guides round and pass them loosely through ears 6, formed on cross-bars 3; also, to rigidly fix said guides at one end to a slide, 7, made to turn and slide on a rod, 8, fixed in bin A. As thus constructed, the front end of the guides are upheld by resting against the front of the bin, as at 9. This construction allows the sieve to be swung up, as in Fig. 4, without disengagement from the guides, and also to be moved to one side of the bin, as in Fig. 8. At one side, usually on the right hand, of the bin there is placed a table, T, coinciding substantially in height and shape of its grooves to the sieve when this is in its level position. This table is preferably made slightly inclined, to facilitate keeping the fasteners in place thereon. For a short distance, O, from the bin the table forms a continuation of the sieve, so that a row of fasteners, as 10, may be pushed by hand or otherwise from the sieve-groove 4 into table-groove 14, as in Fig. 8. Passing beyond this part O the table is cut away, and consists of a series of shallow-grooved bars, 12, in which a row of fasteners, 13, may stand supported by their prongs only, thus permitting a packing-case, 14, to be slipped over their heads, as illustrated in Fig. 13.

For transferring rows of fasteners from grooves 4 to grooves 14 when the sieve is set next to the table, as in Fig. 8, I have provided a hand-instrument. (Shown in Figs. 8 and 9.) This tool consists of a handled stem, 15, having a bar or head, 16, which is provided with one or more fingers, 17, constructed to slide in a corresponding number of said grooves. By means of this device a large number of fasteners may be quickly shifted from the sieve to the table, ready for packing in cases. Usually there are more grooves in the sieve than in the table, so that when part of its grooves are emptied the sieve is slid along to bring other grooves into alignment with the

table-grooves, and so on till all the fasteners are transferred. The cross-sectional shape of the grooves 4 of the sieve is well shown in Figs. 5, 6, 7, and 10; also, in Figs. 3 and 4. It will be observed that the groove consists of a channel, 4, and two side grooves, 18 and 19, (see Fig. 10,) one being wider than the other, to correspond with the unequal ends of the fastener-head 20. These grooves 4, with their side grooves, are substantially the same in construction and operation as the slots 10 with depressions 11 and 12, which are shown and described in my United States Letters Patent No. 322,971, dated July 28, 1885; and the several positions of the sieve in Figs. 5, 6, and 7 correspond with the positions A, A^3, and A^4 of the slotted apron in Fig. 6 of said patent. The office of the side grooves is to so guide the fasteners in their passage over the grooves 4 during the shaking and tipping of the sieve that their prongs will more frequently fall through with their heads in the right direction, as at 20, Figs. 5, 6, and 7. Notwithstanding this, however, some of the fasteners may fall into the groove turned the wrong way, as at 21 in Figs. 5 and 6, the long end of the head reaching beyond the narrow side groove 18. As during the shaking of the sieve it is raised up, as in Fig. 4, through its positions in Figs. 5 and 6 to that in Fig. 7, these wrongly-placed fasteners are displaced and fall out, as at 22, Fig. 7.

The operation of my improved apparatus will be readily understood from the drawings and the preceding description, being as follows: The rim being placed on the sieve, a quantity of the fasteners are thrown in a mass onto the sieve, which is then violently shaken to and fro on guides 5, during which operation part of the fasteners will fall through grooves 4 into the bin, while others are caught, as in Fig. 5, some placed one way and some the other. The rim being now removed, the shaking is continued while the sieve is raised up, as in Fig. 4, until the wrongly-placed fasteners fall out. The sieve is now lowered and slid up against table T, grooves 4 joining grooves 14, and the rows of fasteners are pushed out of the former into the latter, which is best done by means of the tool above described. This step being completed, the preceding operations are repeated until a sufficient quantity of fasteners are ranged in rows on the table, when they are taken out by the packing-cases or otherwise, as desired.

Having now described my invention, I claim—

1. The combination, in a button-fastener sieve, of a series of bars having between them grooves 4, narrow side groove 18, and wider side groove 19, substantially as set forth.

2. The combination of the sliding sieve having channels, substantially as described, the grooved table corresponding thereto, substantially as described, and means, substantially as described, for supporting said sieve to said table, substantially as set forth.

3. The combination of sieve S and table T, each having channels, substantially as described, guides for supporting the sieve to the table, and a fingered instrument, substantially as described, fitting the grooves of said sieve to push fasteners therefrom to the table, substantially as set forth.

4. In an apparatus of the class described, the channeled table T, corresponding at one end to a portion of the channeled sieve and having an extension consisting of bars 12 cut away, substantially as shown and described.

5. In an apparatus for packing button-fasteners, the combination of bin A, rod 8, slide 7, and guides 5, and the sieve supported on the guides, substantially as set forth.

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