

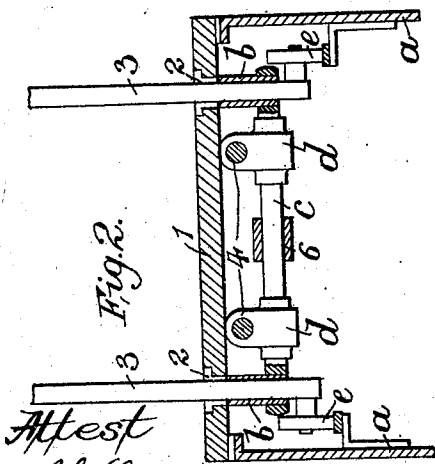
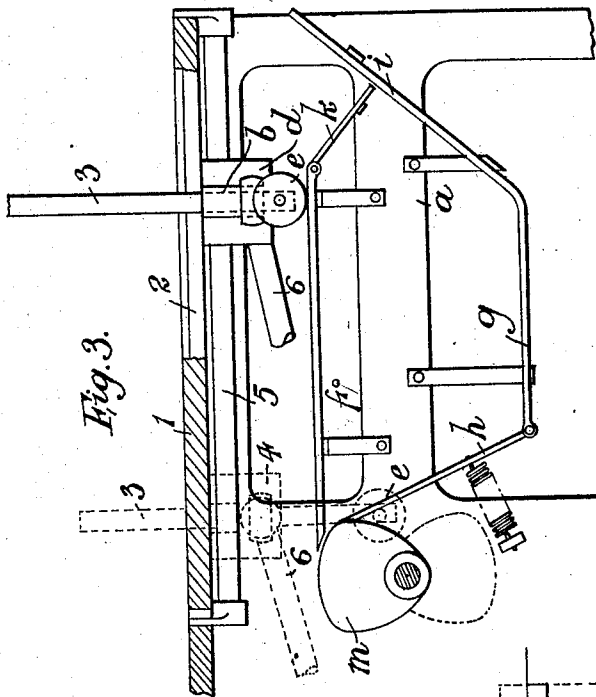
No. 823,751.

PATENTED JUNE 19, 1906.

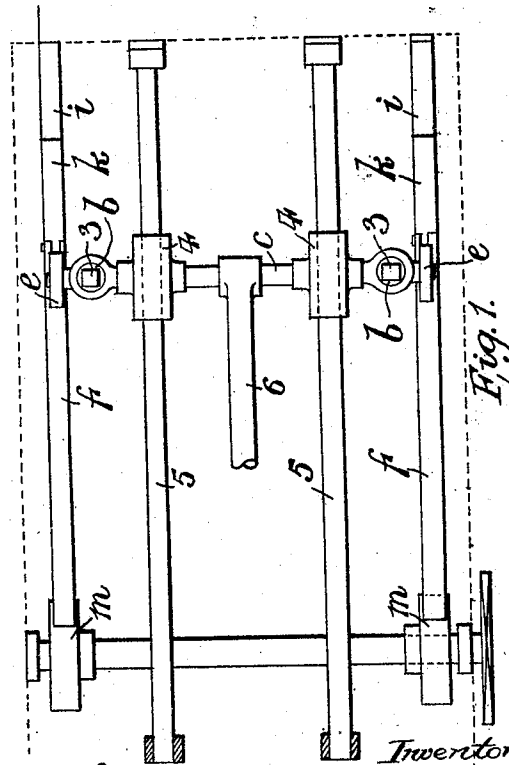
G. H. ADSHEAD.
PARCEL BUNDLING MACHINE.

APPLICATION FILED MAY 1, 1906.

4 SHEETS—SHEET 1.



Attest
W. C. Curran
Edward W. Horton



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By Spear, Middleton, Donaldson & Spear
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4 SHEETS—SHEET 2.

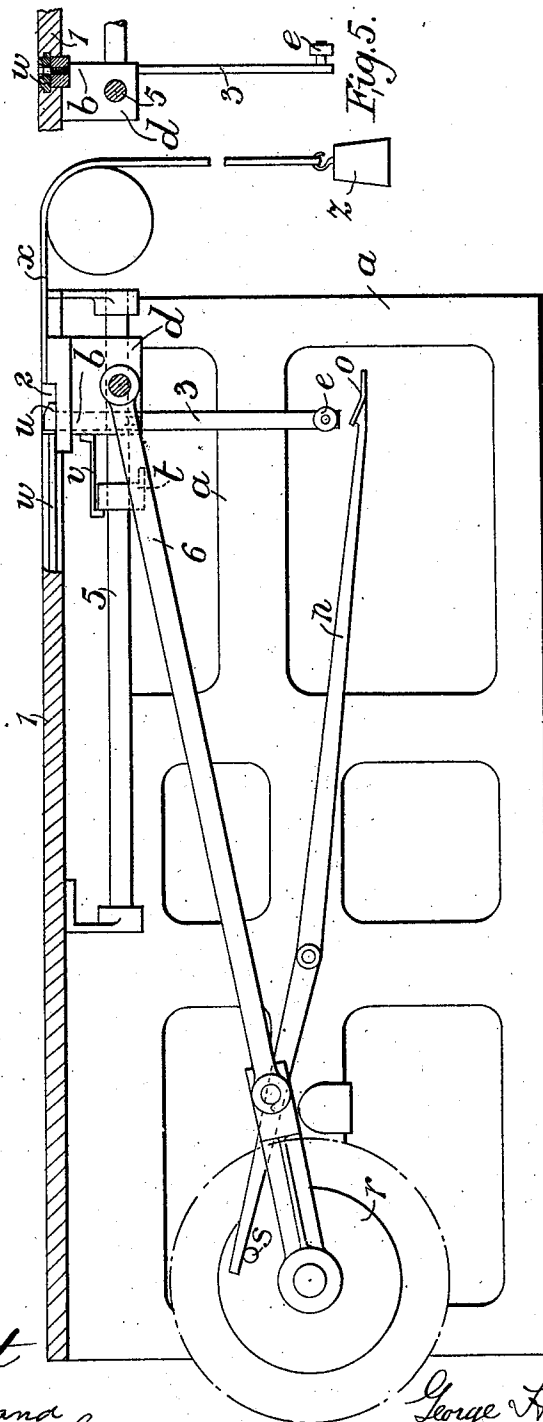


Fig. 4.

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 W. C. Orr and
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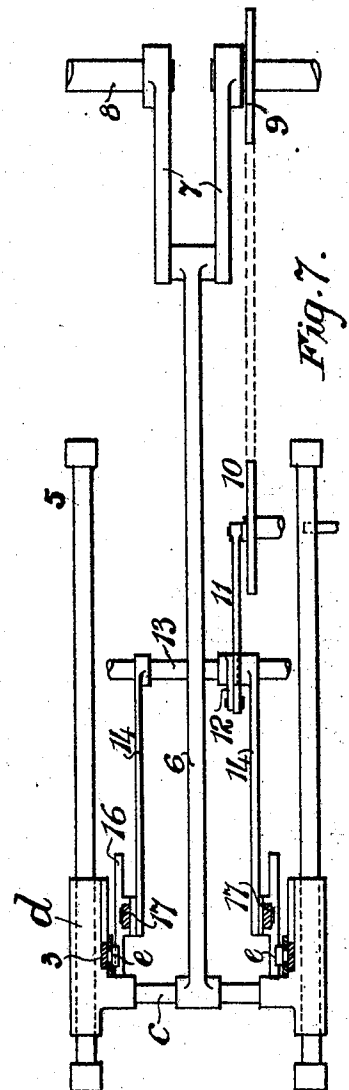
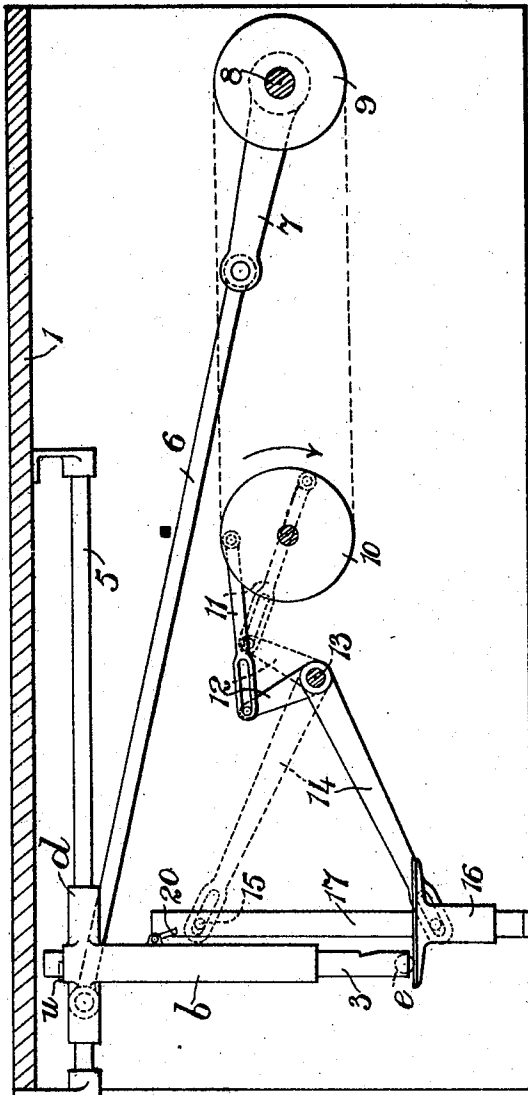
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4 SHEETS—SHEET 3.



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4 SHEETS—SHEET 4.

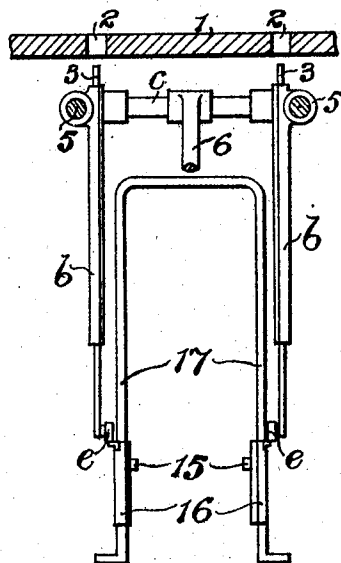


Fig. 8.

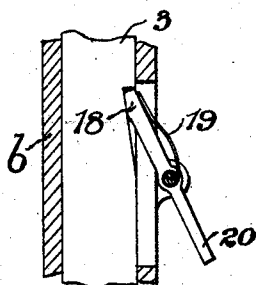


Fig. 9.

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UNITED STATES PATENT OFFICE.

GEORGE HERBERT ADSHEAD, OF LONDON, ENGLAND.

PARCEL-BUNDLING MACHINE.

No. 823,751.

Specification of Letters Patent.

Patented June 19, 1906.

Application filed May 1, 1905. Serial No. 258,368.

To all whom it may concern:

Be it known that I, GEORGE HERBERT ADS-
HEAD, a subject of the King of Great Britain
and Ireland, residing at 294 Stanstead road,
5 Forest Hill, London, S. E., England, have in-
vented new and useful Improvements in and
Relating to Parcel-Bundling Machines, of
which the following is a specification.

The invention relates to improvements in
10 bundling-machines of the type described in
my application for patent, Serial No. 182,922,
filed November 27, 1903.

The object of the invention is to modify
the bundle-feeding mechanism so that more
15 time may be allowed for the insertion of the
bundle or pile of loose papers to be bound.

The invention consists, in a machine of the
type indicated, in means for causing the main
feeding-fingers to make substantially the
20 whole of their return stroke in such a manner
as not to interfere with the insertion of a fresh
bundle or pile of papers.

The invention also includes means for clos-
ing the slots in the table through which the
25 feeding-fingers pass.

Referring to the accompanying drawings,
which form part of this specification, Figures
1 and 2 show plan and end view of the feed-
ing-fingers and vertical slides. Fig. 3 shows
30 a side elevation of one form of mechanism
adapted to secure the object of the invention,
Fig. 4 being a similar view of a modified form.
Fig. 5 is a cross-section through the table,
showing slot-closing devices. Figs. 6, 7, and
35 8 show elevation, plan, and end view of yet
another modification, while Fig. 9 shows a
detail of the spring-retaining catch.

Where desirable, the same reference-sym-
bols have been used in the different drawings
40 to denote corresponding parts.

In carrying the invention into effect ac-
cording to one form the feeding-fingers 3 are
adapted to pass through slots 2 in the table 1,
carried by the frame *a*. These fingers pass
45 through slides *b*, relatively to which they
are capable of an up-and-down movement.
The slides *b* are attached to a cross-bar *c*,
this cross-bar carrying brackets *d*, adapted
to be reciprocated by the connecting-rod
50 6 and crank 7 on the slide-bars 5, as in the
patent above referred to. I may some-
times for convenience form the slides *b* and
the brackets *d* in one piece. The feeding-fingers
3 are provided at their lower ends with
55 the runners or rollers *e*, as shown. In order
to give the feeding-fingers 3 the desired up-

and-down movement, according to one form
(see Fig. 3) I arrange top and bottom hori-
zontal guides *f* and *g*, respectively, and in-
clined guides *h i*, running in an upward direc- 60
tion from the ends of the bottom guides
g, the former of these inclined guides being
hinged. I also arrange other inclined guides
k, pivoted or hinged to one end of the top
horizontal guides *f*, and at the other end of 65
the top guides I provide cams *m*, driven from
any convenient part of the machine. The
function of these various parts will best be
indicated by describing the action of the com-
plete device.

During the feeding-stroke the rollers *e* on 70
the feeding-fingers run on the top horizontal
guides *f*, which are so disposed that the fin-
gers project above the table to the desired
extent. At the end of the feeding-stroke the 75
rollers pass onto the cams *m* or the like, the
function of these cams being by their motion
to transfer the rollers without shock to the
guides *h*, hinged at their lower ends to allow
for the passing of those parts of the cams more 80
distant from their axes, the guides *h* being re-
turned by any suitable springs or the like.
The feeding-fingers are in this way lowered
beneath the level of the table 1, in which posi-
tion they make their return or non-operative 85
stroke, the rollers being then supported by
the bottom horizontal guides *g*. Toward the
end of the return stroke the rollers pass along
the upwardly-inclining guides *i* and during
this part of their movement push past the 90
hinged guides *k*. Finally at the commence-
ment of the working stroke the rollers pass
up these hinged guides *k* (which have mean-
while fallen back against suitable stops) onto
the top horizontal guides *f*, the cycle of oper- 95
ations above described being then repeated.
In this manner the feeding-fingers are below
the level of the table for a large proportion of
their return stroke, thus affording more time
for the placing in position of a fresh bundle of 100
papers.

According to a modified form of the inven-
tion (see Fig. 4) I dispense with the various
guides described above and use levers *n*, ful-
crumed, for example, on the shaft 45. These 105
levers are each provided with a long and
short arm, the long arms having at their ends
suitable surfaces *o* to receive the rollers. The
shorter arms are weighted to such an extent
as to overbalance the long arms, together 110
with the feeding-fingers carried by them. A
disk *r* or the like carrying a pin *s* is adapted

to engage the short end of each lever, respectively, in a manner to be hereinafter described. These disks may be mounted, for example, on the shaft 8; but any other suitable positions of the lever fulcrums and disks may be adopted. The action of this form of my invention is as follows: At the end of the return stroke of the feeding-fingers the shorter ends of the levers n are released by the pins s and fall, owing to the manner in which they are weighted, thus lifting the feeding-fingers. The working or forward stroke then beginning, the feeding-fingers are transferred to the carriers t , which are pushed along the guides 5 by the advance of the slides b , a bundle being thus fed forward into the compressing position. The first few inches traversed during the return stroke suffices to withdraw the feeding-fingers from the support afforded by the carriers, the feeding-fingers thereupon falling by their own weight. Any suitable spring-buffer or the like is provided to take up the shock of the fall. A lug, such as u , forming part of each feeder-arm, respectively, then rests on the top of the slide b , in which position the greater part of the return stroke is completed. Toward the end of the return stroke, however, the pins s escape from the short ends of the levers, which they have in the meantime raised, thus allowing the weights to raise the feeding-fingers again to their working position, when the above cycle of operations is repeated. It will be seen that the carriers t are returned by the hooked pieces v , attached to the slides b .

According to yet another modification, which I prefer to those above described on account of its greater simplicity, (see Figs. 6, 7, and 8,) I mount a chain-wheel 9 rigidly on the crank-shaft 8 and connect this by a chain to a similar wheel 10, which I mount loosely on its shaft. A link 11, pivoted at one end to the chain-wheel 10, serves to transmit motion from the latter by way of the lever 12 to the rocking shaft 13, on which the levers 14, slotted at their free ends, are mounted. These slots engage, respectively, with pins 15, mounted on the carriers 16, adapted to slide in the fixed guide-bars 17, the rollers e of the feeding-fingers 3 being adapted to rest on these carriers while lifting takes place. I wish it to be understood that in order to show the different parts of the mechanism as clearly as possible the chain-wheels 9 and 10 are not represented as set in their correct relative working positions. I preferably arrange these so that lifting of the feeding-fingers commences before the crank has reached the dead-point at the end of its non-feeding stroke and ends more or less symmetrically on the other side of this dead-point. The whole lift is thus effected with a minimum traverse along the guide-bars 5. In order to prevent return of the feeding-fingers when lifted into their working position, I arrange a

catch or pawl 18, (see Fig. 9,) pivoted to each of the slides b and pressed by the spring 19 to enter a notch in the feeding-fingers 3. At the end of the feeding-stroke a tailpiece 20, attached to this pawl, abuts against any suitable stop, thus releasing the feeding-fingers, which then fall by their own weight. The action of this modification will be readily understood in view of the foregoing description without further explanation. The invention also includes means such as adjustable bars, strips, or the like for closing the slots 2 in the table through which the feeding-fingers pass.

According to one form, as shown applied to the feeding mechanism of Fig. 4, the slot-closing device may consist of strips w , checked into the edges of the slot, as shown in cross-section in Fig. 5, the strips being attached to the slides b , or according to a modification flexible bands x , made, for example, of leather, or similar to those used for manufacturing band-saws, may be employed, these strips being likewise attached to the slides b and held taut by weights z or other suitable tension device, as seen in Fig. 4.

In some cases I may close the slots by moving strips thereover in a direction at right angles to the movement of the feeder-arms. Slot-closing devices of the nature described are preferably arranged both in front of and behind the feeding-fingers.

I have found when developing the underlying idea of my invention—viz., the modification of the feeding-gear shown in my previous patent so as to obtain more time for the insertion of a fresh bundle—that it may be embodied in a variety of different mechanisms. The examples which I have given, however, of which I consider that shown in Figs. 6, 7, and 8 the most satisfactory, sufficiently indicate the scope of my invention.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In combination in a machine of the class described, a table, a bracket reciprocating beneath the same horizontally, feed-fingers slidable vertically through the said bracket and means controlling the elevation of the feed-fingers in respect to the table whereby they will be projected above the same for the feeding stroke and will be lowered for the return stroke, substantially as described.

2. In combination in a machine of the class described, a feeding-finger movable vertically in relation to the table or surface over which the material is to be fed, and means for lowering the said feed-finger on its return stroke to avoid contact with the material, said means including a lifting-lever, substantially as described.

3. In combination in a machine of the class described, a feeding-finger movable vertically in relation to the table or surface over which the material is to be fed, and

means for lowering the said feed-finger on its
return stroke to avoid contact with the ma-
terial, said means including a lifting-lever
and means for holding the finger up and
5 adapted to be disengaged therefrom when a
certain position is reached, substantially as
described.

4. In combination in a machine of the
class described, feeding-fingers, means for
10 raising and lowering the feed-fingers in rela-
tion to the table, means for moving the feed-

fingers along the table, a table slotted for said
fingers and means for closing the slots along
which the feeding-fingers pass, substantially
as described.

In testimony whereof I have signed my
name to this specification in the presence of
two subscribing witnesses.

GEORGE HERBERT ADSHEAD.

Witnesses:

ALBERT E. PARKER,
P. T. SEAFORD.