No. 863,642. PATENTED AUG. 20, 1907.

B. H. PUGH.

POTATO SORTER.

APPLICATION FILED NOV. 26, 1906.

2 SHEETS—SHEET 1.

Fig. 1.

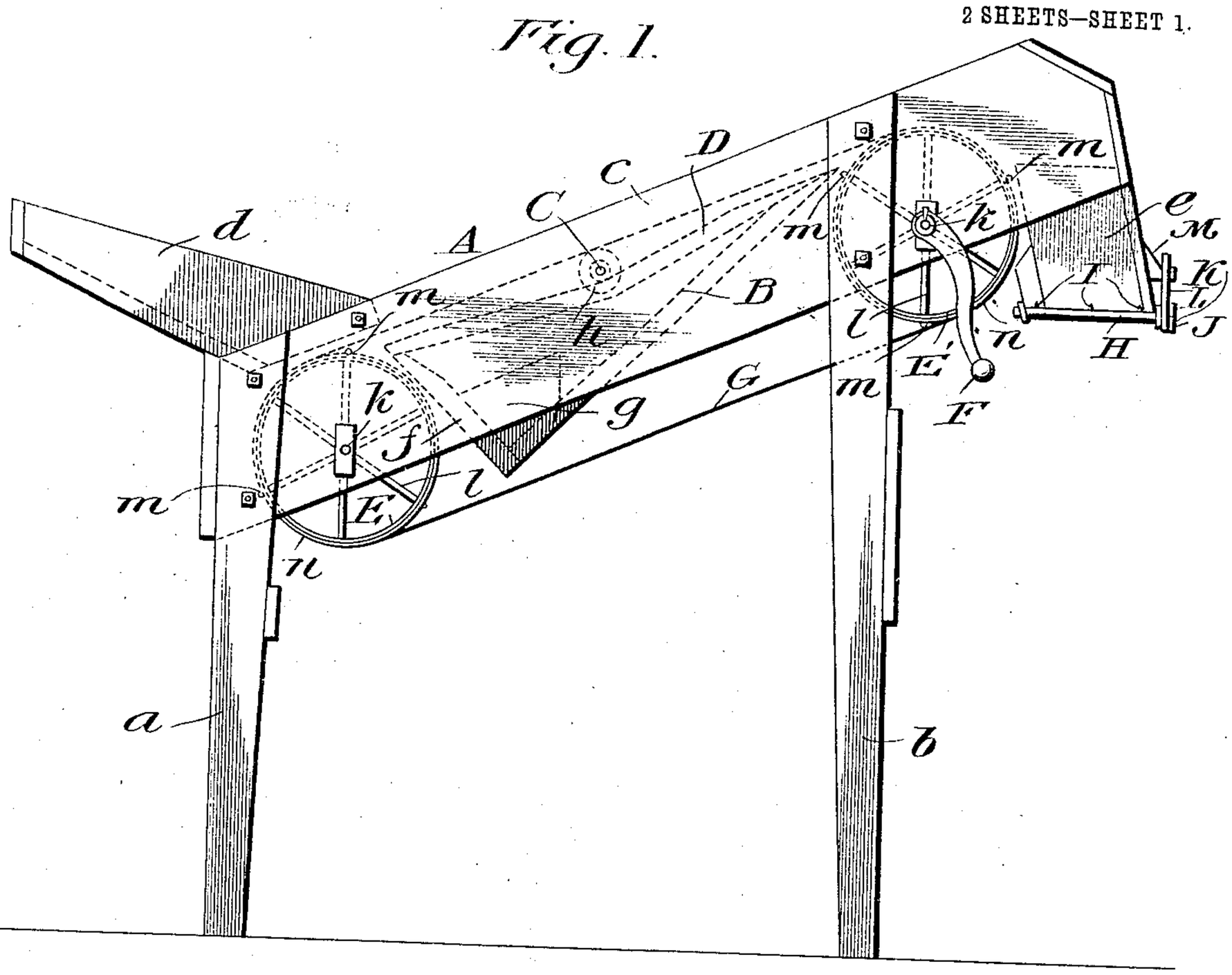
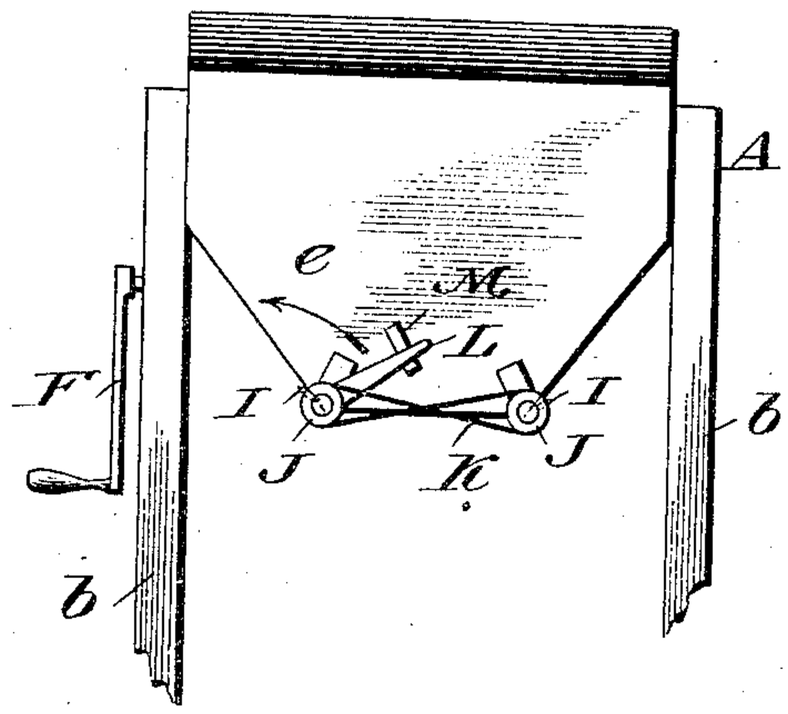


Fig. 2.



Witnesses

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2 SHEETS—SHEET 2.

Fig. 3.

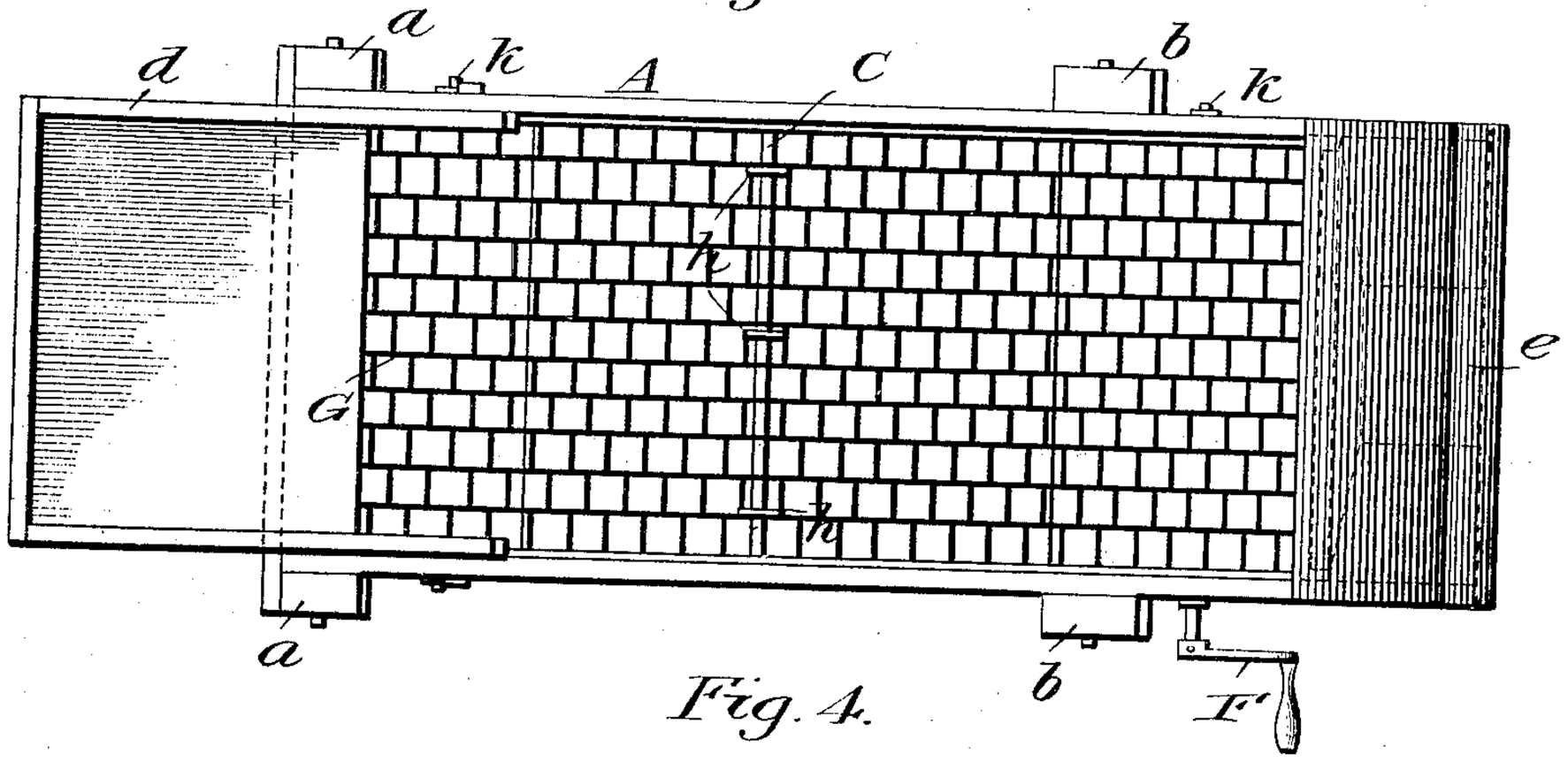

Fig. 4.

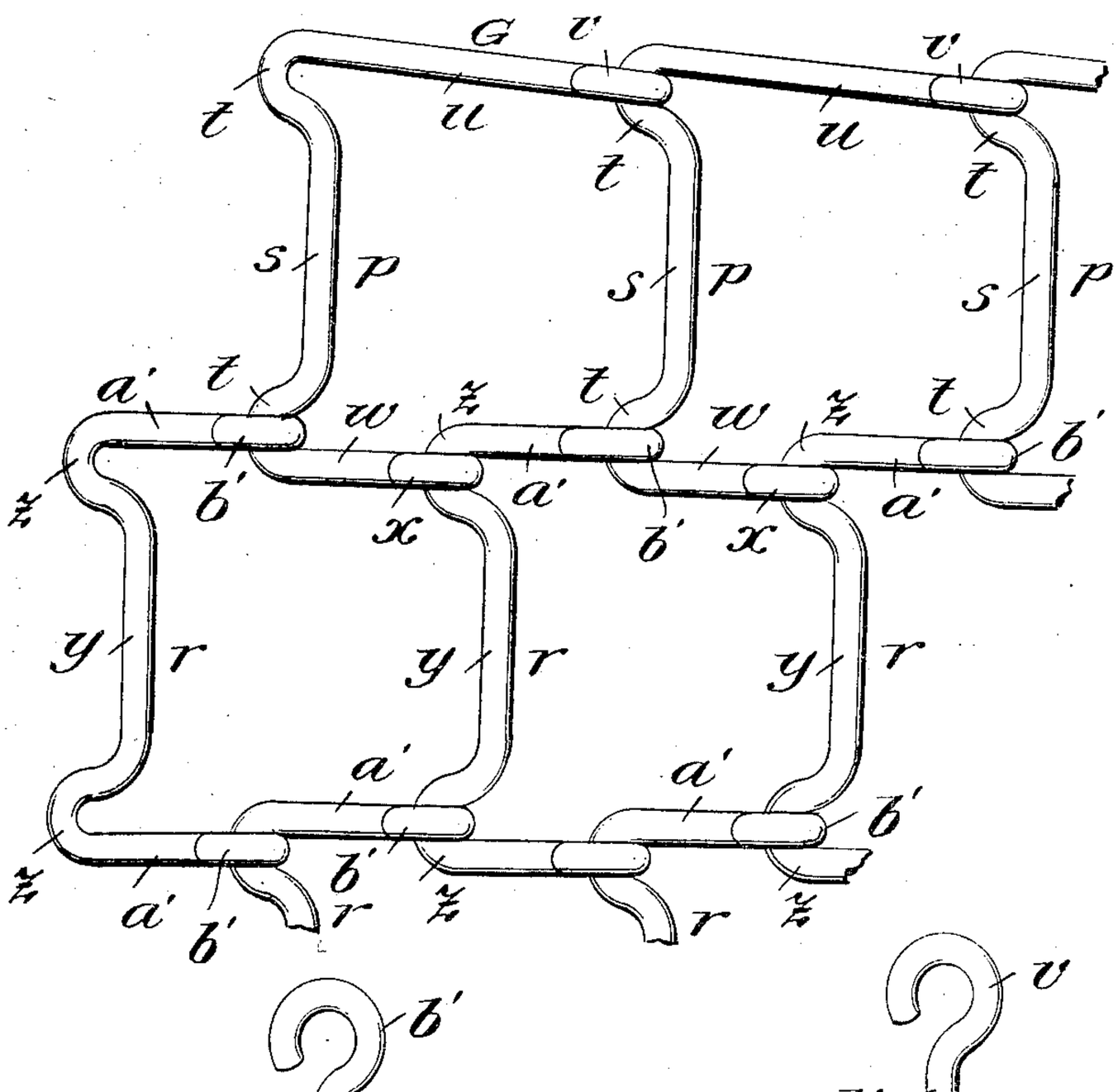

Fig. 5.

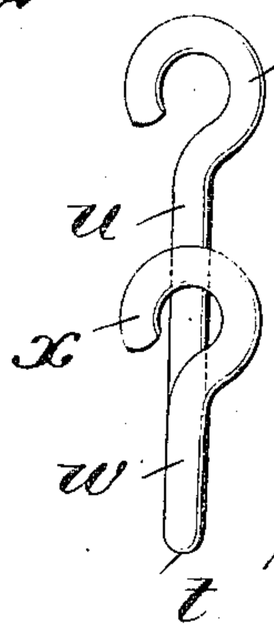

Fig. 6.

Witnesses

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"

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UNITED STATES PATENT OFFICE.

BURTON H. PUGH, OF TOPEKA, KANSAS.

POTATO-SORTER.

No. 863,642. Specification of Letters Patent. Patented Aug. 20, 1907.

Application filed November 26, 1906. Serial No. 345,085.

To all whom it may concern:

Be it known that I, BURTON H. PUGH, a citizen of the United States, residing at Topeka, in the county of Shawnee and State of Kansas, have invented new and useful Improvements in Potato-Sorters, of which the following is a specification.

My invention relates to potato sorters—*i. e.*, machines for separating culls or small potatoes and dirt from large size, marketable potatoes; and it has for one of its objects to provide a simple, easily operated and efficient potato sorter, and one constructed particularly with a view of avoiding bruising, scraping or other injury to the potatoes handled.

Another object of the invention is the provision in a potato sorter, of a simple and strong bag holder embodying such a construction that a bag may be readily attached to the machine in position to receive the marketable potatoes, and as readily released when full of potatoes.

Other advantageous features of the invention will be fully understood from the following description and claims when the same are read in connection with the accompanying drawings, forming part of this specification, in which:

Figure 1 is a side elevation of the potato sorting machine constituting the preferred embodiment of my invention. Fig. 2 is an end elevation of the machine showing in particular my novel bag holder. Fig. 3 is a top plan view of the machine. Fig. 4 is a fragmentary plan view, on an enlarged scale, illustrating a portion of the endless apron comprised in the machine. Fig. 5 is an end elevation of one of the inner links of the said apron, and: Fig. 6 is an end elevation of one of the outer links comprised in the apron.

Similar letters designate corresponding parts in all of the views of the drawings, referring to which:

A is the main frame of my novel machine. The said frame A is supported on short legs *a* and long legs *b*, and is made up of side bars *c*, a feed chute *d* arranged between the rear ends of the said side bars, and a discharge spout *e* depending from the forward portions of the side bars.

Fixed in the frame A between the side bars *c* thereof is a stationary, inclined screen B which terminates at its forward lower end in an upward and forward reaching portion *f*. The office of this stationary screen B is to separate dirt from the culls or small potatoes, and to permit the dirt to drop through to the floor while the said culls or small potatoes are conveyed to an opening *g* through which the same pass to a receptacle placed to receive them.

C is a transverse shaft extending between and journaled in the side bars *c* of the main frame A. This shaft C is equipped at intervals of its length with idler wheels *h* which have for their purpose to support and prevent undue sagging of the endless apron presently described in detail:

D is a dirt screen disposed in the main frame A at the right thereof, and at this point it will noted that both the screen B and the screen D are stationary and located between the lower and upper stretches of the endless apron, and that while the screen D is located at the right of the machine the screen B is located at the left thereof. To this construction, however, I make no claim, and I therefore desire it distinctly understood that any suitable means compatible with the general function of my machine may be employed to separate dirt from the culls and to convey the culls to a point of discharge without involving departure from the scope of my invention as claimed.

E and E′ are drums located adjacent to the opposite ends of the main frame A and between the side bars *c* thereof. These drums respectively comprise a shaft *k* journaled in suitable bearings in the side bars, end wheels *l* fixed on the shafts and having sprocket teeth *m* on their peripheries, and sheet-metal *n* extending between and connected to the peripheries of the wheels and designed to support the portion of the endless apron, presently described, intermediate the side edges of the apron. The said drums E and E′ differ in that the drum E is an idler while the drum E′ is provided on one end of its shaft *k* with a crank F through the medium of which the drum may be turned by hand to move the endless apron. It is of course obvious that in some cases a band wheel or other element of a driving connection may be substituted for the crank F when it is desired to operate the potato sorter from a motor.

G is the endless apron of the machine which is arranged and adapted to be moved on the drums after the manner best illustrated in Fig. 1. The said apron G is peculiar in that it comprises a plurality of outer or edge links *p* and a plurality of inner or intermediate links *r*. The outer or edge links each have a body portion *s* terminating at its ends in loops *t*, an outer, comparatively long arm *u* extending from one loop *t* and disposed at an approximate right angle to the body *s* and terminating at its outer end in an eye *v*, and an inner short arm *w* extending from the other loop *t* and at a right angle to the body *s* and terminating at its outer end in an eye *x*. Each of the intermediate links *r* has a body portion *y* with loops *z* at its ends and also has arms *a′* extending from the loops *z* and at right angles to the body portions *y* and terminating at their outer ends in eyes *b′*. The several links are pivotally connected together in the manner best shown in Fig. 4—that is to say the loops of the links are loosely arranged in the eyes of adjoining links, and from this it follows that a very flexible apron is produced and one having large interstices through which the culls or

small potates are free to drop. It will also be apparent that an apron formed in the manner described is exceedingly strong, has no parts that are likely to drop out of place incident to the operation of the machine, and hence is well adapted to withstand the rough usage to which potato sorters are ordinarily subjected.

In the practical use of my novel potato sorting machine, the potatoes to be sorted are placed on the chute *d*, and pass from the said chute to the upper stretch of the apron G. The large and marketable potatoes are carried forward on the said stretch of the apron and are discharged into the spout *e*, while the culls or small potatoes drop with the dirt and other foreign substance through the large interstices of the apron. From the said upper stretch of the apron the culls and the dirt pass to the stationary screens, and the dirt drops through the said screens while the culls are guided by the same to the discharge opening *g*. It will be apparent from the foregoing that the turning of the drum E′ brings a continuous and moving stretch of apron under the potatoes received from the chute *d*, and this without any shock or jar so that the potatoes are efficiently sorted without any of the same being bruised, scraped or otherwise injured. The flexible character of the apron G enables the said apron to accommodate itself to and closely fit the drum, and consequently the upper stretch of the apron as it takes under the mass of potatoes received from the chute *d* does not present any projections such as would be liable to strike and cut or otherwise injure the potatoes. When the apron G is properly positioned on the drums E and E′ the sprocket teeth *m* of the drums enter the outer interstices of the apron, and consequently the apron is positively moved by the drum E′ as well as held against casual lateral movement on both of the drums.

Journaled in suitable bearings at opposite sides of the mouth of the discharge spout *e* are longitudinally disposed shafts H which are provided at intervals of their length with radial pins I and are also provided at their forward ends with pulleys J fixed on said ends. The pulleys of the two shafts are connected by a crossed belt K of suitable description, Figs. 1 and 2, and fixed to one of the shafts is a hand lever L designed to be placed in engagement with and disengaged from a keeper M which has for its office to normally retain the said lever in the position shown in Fig. 2. When the shafts H are in the position shown in Figs. 1 and 2 it will be apparent that a bag that is to be filled with marketable potatoes may be quickly and easily hung on the pins I in a secure manner; and it will also be apparent that when the hand lever L is disengaged from the keeper M and moved in the direction indicated by arrow in Fig. 2, the shafts H will be rocked outward and downward so as to direct the pins I downward and release the bag therefrom. It will be gathered from the foregoing that my novel bag-holding means is not only advantageous because of the facility with which a bag may be released from the machine, but also because of the fact that the said means is adapted to hold a bag clear of the floor on which the machine is arranged so that the bag may be filled completely to the bottom thereof.

The machine herein shown and described constitutes the preferred embodiment of my invention, but I desire it understood that in practice various changes in the form, construction and relative arrangement of parts may be made within the scope of the appended claims without involving departure from the spirit of my invention.

Having described my invention, what I claim and desire to secure by Letters-Patent, is:

1. The combination in a potato sorter, of a main frame, transverse drums mounted in said frame, and an endless apron mounted on said drums and comprising links having transverse body portions with loops at the ends thereof and also having arms extending from the loops and terminating in eyes; the loops of the said links being arranged in eyes of adjoining links whereby the links are pivotally connected together and are held against lateral movement with respect to each other.

2. An apron for the purpose described comprising links having transverse body portions with loops at the ends thereof and also having arms extending from the loops and terminating in eyes; the loops of the said links being arranged in eyes of adjoining links, whereby the links are pivotally connected together and are held against lateral movement with respect to each other.

3. An apron for the purpose described comprising outer or edge links having transverse body portions terminating in loops and also having short inner and long outer arms terminating in eyes, and intermediate or inner links having transverse portions terminating in loops and also having arms extending from said loops and terminating in eyes; the loops of the said links being arranged in eyes of adjoining links for the purpose set forth.

4. The combination in a potato sorter, of a main frame, transverse drums mounted in said frame, a feed chute arranged to discharge at a point above one of said drums, a discharge spout depending from the main frame at the outer side of the other drum, and an endless apron mounted on said drums and comprising links having transverse body portions with loops at the ends thereof and also having arms extending from the loops and terminating in eyes; the loops of the said links being arranged in eyes of adjoining links, and the interstices formed by certain of the links being arranged to receive sprocket teeth on the drums.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

BURTON H. PUGH.

Witnesses:
CHAS. STEIGER,
HELEN LANGAN.