United States Patent

Gluszek

[15] **3,658,384**

[45] **Apr. 25, 1972**

[54] DETACHABLE WRECKING DEVICE

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[52] **U.S. Cl.** **299/37**, 37/117.5, 173/29, 173/100, 299/70

[51] **Int. Cl.** **E21c 27/30**

[58] **Field of Search** ..... 37/2, DIG. 3, 12, 141 T, 142, 37/117.5, 2 R, 2 P; 172/777, 778; 299/36, 37, 69, 70; 173/29, 46, 100; 175/315

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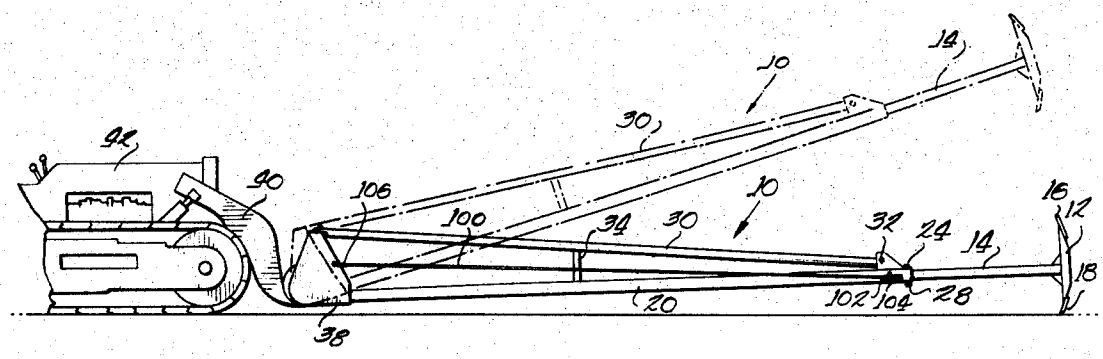
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[57] **ABSTRACT**

An implement for wrecking small buildings which may conveniently be attached to or removed from a bucket loader is described. It comprises upper and lower tubular booms for connection to the upper and lower sides of the bucket, a spreader between the booms, and a tool assembly attached to the lower boom and having a tool support and a tool head attached to the support. A jack is placed within the bucket to keep it from collapsing under the loads imposed by the implement.

13 Claims, 3 Drawing Figures



PATENTED APR 25 1972

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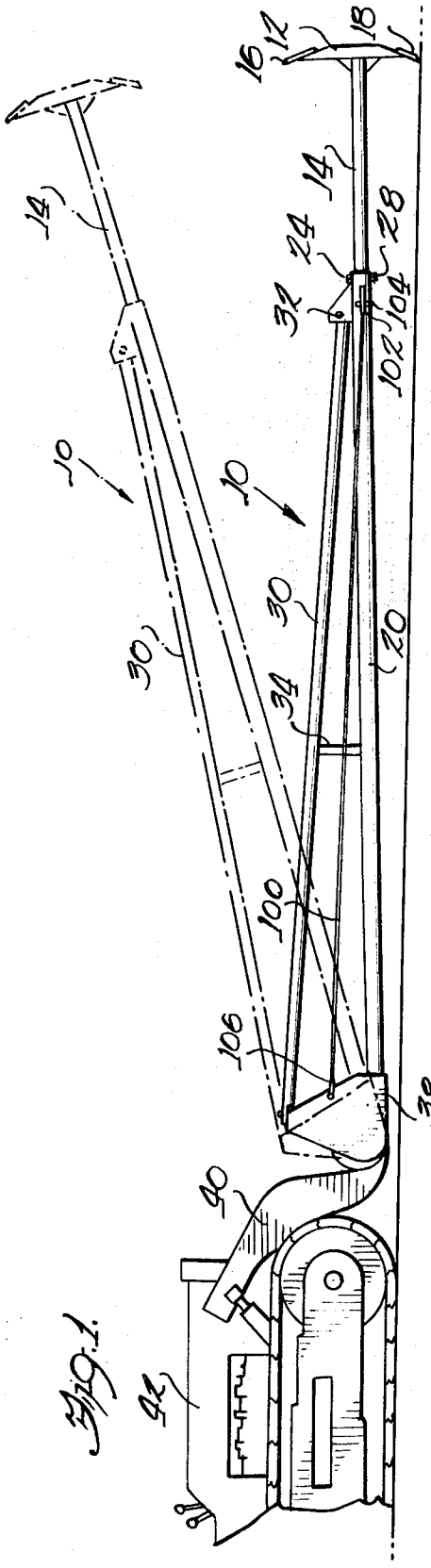


Fig. 1.

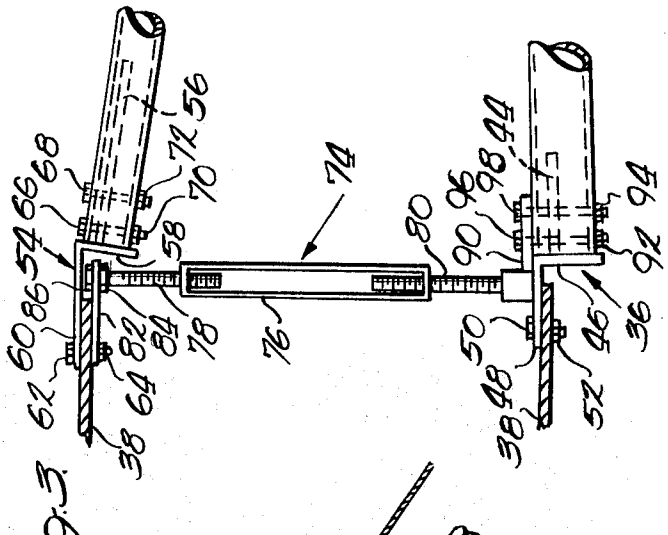


Fig. 3.

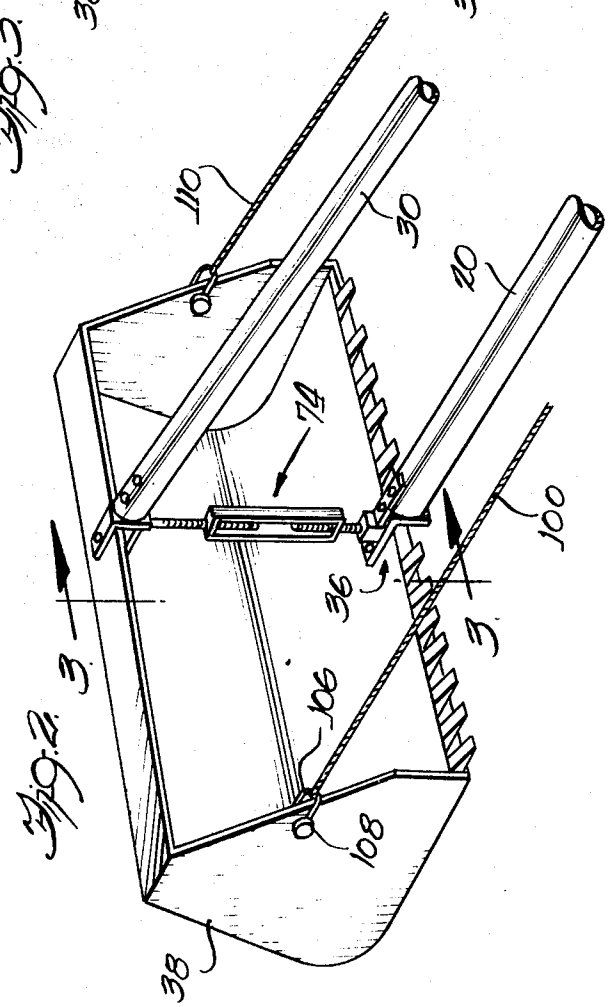


Fig. 2.

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DETACHABLE WRECKING DEVICE

This invention relates to tools for use with tractors and, more particularly, to implements which may be conveniently attached to the front of a bucket loader or bulldozer and used to wreck small buildings.

In the business of wrecking small buildings, it is highly desirable that any individual building be wrecked as cheaply as possible, i.e. both rapidly and using a minimum number of men and machines. In order to wreck relatively small buildings, say two to four stories high of brick or wood frame construction, ti has in the past often been found necessary to use two separate machines, one, such as a crane with a heavy ball swinging from it, to demolish the building, and the other, such as a bucket loader, to load the resultant debris onto trucks to be hauled away. Using separate machines for the demolition and loading operations increased the per unit cost of building wrecking because of the increased cost of operating two machines rather than one, the necessity to hire men skilled in operating two separate types of machines, and the logistic problem of having to have two machines at the demolition site rather than one. These problems are particularly acute to the small, independent wrecking contractor. It has thus been found desirable to develop a machine capable of performing both the the demolition and loading steps.

SUMMARY

This invention provides a detachable implement for use with a bucket loader, bulldozer, or similar tractor-driven machine which may be used for demolishing small buildings. It comprises an elongate boom assembly for attachment to the bucket or blade at one end thereof and a tool assembly attached to the other end and including a tool support and a tool head. The tool assembly is, preferably, capable of being extended from the boom assembly so that the length of the implement may be adjusted. Support means may also be provided within the bucket or blade to strengthen it while the implement is in use.

Accordingly, it is an object of this invention to provide an implement for use with tractor-driven machines that may be used to wreck small buildings.

It is an object of this invention to provide such an implement which may easily be attached to and detached from the machine.

It is an object of this invention to provide such an implement which has an easily adjustable length.

It is an object of this invention to provide such an implement which includes means for strengthening the bucket or blade to which it is attached.

It is an object of this invention to provide such an implement which is characterized by simplicity of design and ease of construction.

DESCRIPTION OF THE DRAWING

FIG. **1** is a side view of an implement incorporating one embodiment of this invention attached to a tractor-driven bucket loader;

FIG. **2** is a pictorial, detail view of the implement of FIG. **1**, showing how it is attached to the bucket loader; and

FIG. **3** is a cross section view taken along the line **3**—**3** of FIG. **2** showing in detail the jack and attachment brackets of the embodiment of FIG. **1**.

DESCRIPTION OF THE PREFERRED EMBODIMENT

An implement **10** incorporating a preferred embodiment of the present invention is disclosed in FIG. **1**. It is shown solid in a lowered position and dashed in a raised position ready for use. A tool head **12** to a tool support beam **14**. In the embodiment shown, the tool head is in the form of a pick and has two blades **16** and **18** attached to opposite ends thereof. Tool support beam **14** is attached to a lower boom **20**. The lower boom

may be hollow having interior dimensions slightly greater than the exterior dimensions of support beam **14** so that it may slidably receive the tool support beam. Tool support beam **14** may have a series of regularly spaced adjusting holes (not shown) diametrically therethrough while lower boom **20** has a mating hole (not shown) diametrically therethrough. A lock bolt **24** is placed through the mating hole and the adjusting hole with which it is aligned and secured in place by a lock nut **28**. It will be seen that the overall length of implement **10** may be varied by sliding tool support beam **14** in and out of lower boom **20** until one of the adjusting holes is aligned with the mating hole. Placing lock bolt **24** through the aligned holes and securing it with lock nut **28** then secures the tool assembly of tool head **12** and tool support beam **14** in place. Alternatively, the implement might be lengthened by similarly adding extension sections between lower boom **20** and tool support beam **14**.

A hollow upper boom **30** is attached to lower boom **20** at a pivot joint **32**, which is preferably such that upper boom **30** may be folded down against lower boom **20** when the implement is not in use for ease of transportation and storage. A spreader **34** is connected to lower boom **20** and upper boom **30** at a point approximately midway between pivot joint **32** and the end of implement **10** opposite tool head **12**. The means of connection, as by bolting, is preferably such that spreader **34** may be easily moved to allow upper boom **30** to rotate towards lower boom **20** when the implement is not in use. When the spreader is positioned as shown, it aids in maintaining the upper and lower booms in a fixed relationship.

A lower attachment bracket **36** is connected to lower boom **30** at the end thereof opposite tool head **12** for attaching the lower boom to the lower side of a bucket **38** which is part of a bucket loader **40** driven by a tractor **42** in the conventional manner. Any similar tractor-driven operative instrument might be substituted for the bucket. The bracket has a boom plate **44**, shown dashed in FIG. **3**, extending into and fixedly attached to as by bolting, as shown, or welding, hollow boom **20**, a cover plate **46** perpendicular to the boom plate extending over the end of the boom and attached thereto, and a bucket plate **48** extending obliquely from the boom and cover plates. Bucket plate **48** has a hole, not shown, therethrough which aligns with a hole through the lower side of bucket **38**, also not shown. A bolt **50** extends through those holes and is secured by a nut **52** thus attaching lower boom **20** to bucket **38**.

An upper attachment bracket **54**, similar to lower attachment bracket **36**, connects the end of upper boom **30** to the upper side of bucket **38**. The upper bracket has a boom plate **56**, shown dashed in FIG. **3**, extending into and fixedly attached to upper boom **30**, a cover plate **58** perpendicular to the boom plate extending over the boom and fixedly attached thereto, and a bucket plate **60** extending obliquely from the boom and cover plates. Bucket plate **60** has a hole, not shown, therethrough which aligns with a hole through the upper side of bucket **38**, also not shown. A bolt **62** extends through those two holes and is secured by a nut **64** thus attaching upper boom **30** to bucket **38**. Bolts **66** and **68** and nuts **70** and **72** may cooperate with holes through upper boom **30** and boom plate **56** to attach the boom plate to the boom.

A turnbuckle jack **74** is placed between the upper and lower sides of bucket **38** to keep the bucket from collapsing under the loads imposed by implement **10**. It is comprised of a loop **76** to which tow support rods **78** and **80** are threadably attached. An upper jack plate **82** is rotatably affixed to support rod, **78**, as by bolts **84** and **86**, and a lower jack plate **90** is rotatably affixed to support rod **80**. The jack **74** is placed between lower attachment bracket **36** and the top of bucket **38** when the implement is attached to the bucket and expanded by turning loop **76**. The jack may be attached to the attachment bracket by nuts **92** and **94** and bolts **96** and **98** through corresponding holes in lower jack plate **90**, boom plate **44**, and the lower boom **20** and to the upper side of bucket **38** by nut **62** and bolt **64** through a corresponding hole in upper jack plate **82**.

A guideline **100** is connected between one side of the bucket and lower boom **20** to restrain lateral movement of the implement. A pin joint **102** is provided on the side of the boom with a pin **104** passing through an eye at one extremity of guide line **100**. A shackle **106** is attached to the other extremity of guideline **100** and is placed through a hole in the side of bucket **38**. A pin **108** through the shackle may be easily removed so that the guide line may be disconnected from the bucket when the implement is removed. A similar guideline **110** is provided on the other side of the implement.

It will be obvious that certain modifications of the specific embodiment described above may be made without departing from the spirit and scope of this invention. For example, the arrangement of the boom might be altered, different means might be used for attaching the boom to the bucket, or the implement might be used on the blade of a bulldozer rather than on the bucket of a bucket loader.

It will thus be seen that a wrecking implement has been provided which fulfills all of the above-mentioned objects. In particular, it may be easily affixed to or detached from bucket **38** by inserting or removing bolts **50** and **62** and connecting or disconnecting guide line **100** and **110**. Moreover, it may be collapsed for easy transportation by removing spreader **34** and jack **74**. While a particular embodiment of this invention is disclosed above, it will be understood, of course, that the invention is not to be limited thereto since many modifications may be made. It is contemplated, therefore, by the appended claims to cover any such modifications as fall within the true spirit and scope of this invention.

I claim:

1. A building wrecking device for attachment to an operative instrument, said operative instrument being coupled to a tractor through a set of push arms and adapted for motion relative to said push arms, and comprising first elongate boom means for attachment to a first portion of said operative instrument, second elongate boom means for attachment to a second portion of said operative instrument removed from said first portion, coupling means for coupling said second elongate boom means to said first elongate boom means, pick means for attachment to said operative instrument through said first and second boom means, and adjustment means for adjusting the length of said device.

2. The building wrecking device of claim **1** further comprising a spreader for connection to said first and second elongate boom means and maintaining said boom means in a relatively fixed relationship.

3. The building wrecking device of claim **1** further comprising guidelines for connection to said operative instrument.

4. The building wrecking device of claim **1** further comprising a jack for placement within said operative instrument to strengthen it.

5. The building wrecking device of claim **4** further comprising a tool support beam having a first extremity thereof connected to one of said first or second elongate boom means and having a second extremity thereof connected to said pick means.

6. The building wrecking device of claim **5** wherein said tool support beam is slidably connected to said one of said first or second elongate boom means.

7. The building wrecking device of claim **6** wherein said operative instrument is the bucket of a bucket loader.

8. The combination of a tractor, a set of push arms operatively connected to said tractor, an operative instrument coupled to said push arms and adapted for motion relative to said push arms, a first elongate boom attached to one side of said operative instrument, a second elongate boom attached to another side of said operative instrument and said first boom, a pick operatively connected to at least one of said first and second elongate booms, and adjustment means interposed between said pick and said operative instrument for adjusting the distance between said pick and said operative instrument.

9. The combination of claim **8** further comprising guidelines for connection between said operative instrument and said first or second elongate booms.

10. The combination of claim **8** further comprising a spreader for connection to said first and second elongate booms for maintaining said booms in a relatively fixed relationship.

11. The combination of claim **10** further comprising a jack for placement within said operative instrument to strengthen it.

12. The combination of claim **11** wherein said operative instrument is a bucket forming part of a bucket loader driven by said tractor.

13. A building wrecking device for use with a bucket loader, said bucket loader including a bucket operatively coupled to a tractor through a set of push arms and adapted for rotational motion with respect to said push arms, said device comprising:

first elongate boom means for attachment to the top of said bucket;

second elongate boom means for attachment to the bottom of said bucket;

coupling means for coupling said second elongate boom means to said first elongate boom means;

tool support beam means coupled to one of said first or second elongate boom means and having a first extremity slidably received by said one of said boom means;

pick means affixed to a second extremity of said tool support beam means; and

jack means for placement within said bucket to strengthen it against the loads imposed by said device.

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UNITED STATES PATENT OFFICE

CERTIFICATE OF CORRECTION

Patent No. 3,658,384 Dated April 25, 1972

Inventor(s) Rudolph J. Gluszek

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Page 1, address of the inventor - "14th St." should be -- 74th st. --;

Column 1, line 14 - "ti" should be -- it --;

Column 1, line 72 - After "12" insert -- is attached --; and

Column 2, line 64 - "tow" should be -- two --.

Signed and sealed this 19th day of September 1972.

(SEAL)
Attest:

EDWARD M.FLETCHER,JR.
Attesting Officer

ROBERT GOTTSCHALK
Commissioner of Patents

FORM PO-1050 (10-69)

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